TH NK

IDEAS • MALTA • RESEARCH • PEOPLE • UNIVERSITY

i

PHILOSOPHY

There is only one good, knowledge, and one evil, ignorance,' said the Greek philosopher Socrates. Philosophy, as the study of humanity's fundamental issues, falls squarely under good. TH**I**NK has been celebrating such goodness since its inception six years ago, so we are building on January's arts issue with 16 pages dedicated to philosophy.

Philosopher poet Prof. Joe Friggeri talks about his creative process as one of the powerhouses of Maltese philosophical thought and literature (pg. 24), while the link between philosophy and digital games is explored by Dr Daniel Vella (pg. 20). A shift in our philosophies pertaining to education are also being looked into to encourage social and emotional learning in children (pg. 16). Going deeper into the subject, our opinion section sees Amanda Mathieson reasoning out the cornerstone of civilisation to provide a unique answer to the science versus language debate (pg. 10). And, as a THINK first, Leli Psaila writes in Maltese about how the 1980s have inspired countless local authors (pg. 28).

The issue covers other topics as well. From trust in blockchain (pg. 38) to toys to improve language skills (pg. 30). Our design section features students visions to reinvent the University of Malta campus (pg. 8). Our Without Borders article straddles the divide in work-life balance between men and women (pg. 6), while students discuss insurance history and virtual reality (pgs 12 and 13). And if you're looking for some career inspo, head to Alumni section to read about Dr Joanna Drake's journey at the European Commission (pg. 60).

Do some good today and enjoy the read!

Edward Duca
EDITOR-IN-CHIEF
✉ edward.duca@um.edu.mt
🐦 @DwardD

Cassi Camilleri
EDITOR
✉ cassian.camilleri@um.edu.mt
🐦 @CassiCamilleri

CONTENTS

ISSUE 24 • JUNE 2018

PHILOSOPHY

TH!NK Issue 24's cover represents our creative mind. Designed by illustrator Roberta Scerri, it shows the merging of thoughts through a rainbow of colours as they swarm together to bring the next revolutionary idea to life.

CONTRIBUTORS

TOOLKIT
Prof. Godfrey Grech

WITHOUT BORDERS
Dr Anna Borg

DESIGN
Dr Rebecca Dalli Gonzi
Alison Galea
Jessica Galea
Brandon Saliba

OPINION
Amanda Mathieson
Dr Philip Bonannot

STUDENT SECTION
Natalia Mallia
Mark Laurence Zammit

FOCUS
Dr Carmel Cefai
Cassi Camilleri
Dr Daniel Vella
Jasper Schellekens
Prof. Joe Friggieri
Emanuel Psaila
Miriam Calleja

FEATURES
Emanuel Balzan
Dr Ing. Philip Farrugia
Prof. Simon Fabri
Dr Owen J. Casha
Prof. Helen Grech
Dr Daniela Gatt
Flying Squirrel Games
Anthony Demanuele
Loridana Buttigieg

Giulia Buhagiar
Cassi Camilleri
Dr Joshua Ellul
Prof. Gordon J. Pace

IDEA
Dr Robert Camilleri

RIDT
Sarah Spiteri
Wilfred Kenely
Dr Mark Abela
Laura Bonnici

CULTURE
Caldon Mercieca
The Valletta 2018 Foundation
Valletta Design Cluster

ALUMNI
Teodor Reljic
Dr Joanna Drake

START UP
Dawn Gillies
Simon Dotschuweit
Nick Porsche

LAB TO LIFE
Becky Catrin Jones
Dr Tracey Camilleri
Prof. Kenneth Camilleri
Dr Owen Falzon
Ing. Rosanne Zerafa

ILLUSTRATIONS
Roberta Scerri

PHOTOGRAPHY
James Moffett
Edward Duca
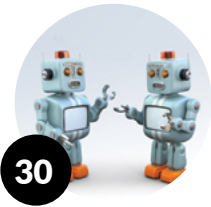Andrew Gauci Attard
Dr Ing. Stefania Cristina

WEBSITE
Cassi Camilleri
Kirsty Callan
Roberta Scerri

THINK

IDEAS · MALTA · RESEARCH · PEOPLE · UNIVERSITY

JUNE 2018 - ISSUE 24

L-Università ta' Malta

TOOLKIT

Luminex xMAP®: Enhanced lab efficiency

Stereotypical depictions of researchers involve crazy hair, oversized goggles, shabby lab coats, and loads of test tubes. While the first three may be exaggerated, the sheer volume of tubes and wells needed in a lab cannot be overstated, especially when the lab is dedicated to anything biological.

One tissue sample can be used for a gamut of tests, all of them attempting to identify something different in it, be they antibodies, DNA, or RNA (biomarkers). Often, many samples are required due to all the tests needed to highlight the variations in those biomarkers. But the size of samples is now decreasing thanks to machines like the Luminex System running xMAP technology.

> *By identifying these biomarkers, it may be possible in future to detect the disease earlier and give patients better-targeted therapy.*

The Luminex System is a research/clinical diagnostics platform that allows detection of multiple analytes in a single well of a microtiter plate—100 or more reactions using a single drop of fluid.

Multiplex assays are widely used in experiments investigating the characteristics of molecules within a biological sample. This approach can be used to see whether an experimental treatment works, or what changes a DNA mutation causes in the molecules or molecular pathways within cells.

In real terms, this machine allows for analyses to be done to determine whether or not a patient has a particular disease or gene variant in their blood that would prevent a drug from being effective. It also allows them to determine the ideal dosage for those drugs. The machine can also be used to identify and characterise viral infections.

A particular research group at the University of Malta, headed by Prof. Godfrey Grech, has used Luminex xMAP technology to develop novel markers which are allowing them to classify a subset of triple-negative breast cancer patients. By identifying these biomarkers, it may be possible in future to detect the disease earlier and give patients better-targeted therapy. **T**

WITHOUT BORDERS

Sharing is caring, but at what cost?

Life is hard sometimes. Juggling the demands of work with family while remaining healthy and sane can be tough. Done successfully, that lifestyle can look like a carefully choreographed dance. Add a bout of the flu to the mix though, and the dance gets thrown off. Now you find yourself strewn on the dance floor, with hurdles coming your way.

Dr Anna Borg

So far, mothers in our societies have carried the lion's share of caring responsibilities and bear the Motherhood Penalty, affecting their earnings and career progression, amongst many other things. The International Labour Organisation claims that closing the gender gap in caring responsibilities between women and men is a priority for social development in the 21st Century.

The European Union (EU) is proposing a series of measures which aims to do exactly that. The first tackles paternity leave. At the time of writing, men in Malta are allowed at most two days off from work when they become parents. Under the new scheme, fathers will be able to take at least 10 working days of paid paternity leave around the birth of their child. When it comes to parental leave, a non-transferable quota of four months will be reserved for each parent to take, up until the child is 12 years old. It should be noted that 90% of fathers across the EU do not make use of parental leave at present. Finally, there is caring leave for workers who care for seriously ill or dependent relatives. These people will be entitled to five additional days of paid leave.

Whilst these three initiatives make sense, when analysed through the gender lens, the reality is that when people make use of these measures, they will not be compensated in full, but at the replacement rate of compulsory sick pay level. This immediately sets off the alarm bells.

Taking parental leave could mean a reduction of around 80% in income. Are Maltese parents, especially fathers, willing to accept such a drastic pay cut with every new child that arrives, along with a spike in costs? The result will be that fathers are likely to shun this additional leave, while mothers may be more prone to take the extra leave at the reduced pay rate. This will simply reinforce gender roles and gender stereotypes.

The aspect of this law that equates parental and caring leave to sick leave has to be removed. Parents manoeuvring through the fast lane of life and trying to care for their children by taking paternity, parental, or caring leave are not sick, so why pay them as such? Why impose a parental penalty on parents who are bringing up the next generation of citizens? The EU needs to do some serious rethinking if it really wants to contribute to the most significant social development of the 21st century. ◨

DESIGN

Reinventing our campus

The University of Malta is a second home to thousands of students, academics, researchers, and staff. The question is: Is the Msida campus being used to its fullest potential to welcome and serve all these people? Following the M.Arch program at the Faculty for the Built Environment, a group of students turned their critical gaze towards the spaces in and around the Msida campus to answer this question.

There is no special formula for producing a design strategy. It is equal parts critical thinking and creativity. However, there is a key truth that helps frame things for designers: create the space as though you are using it yourself. In this case, the students were already users. As a result, they designed solutions for campus spaces wearing not only a 'student hat' but a 'design, user and evaluator' hat. They thought of planning tools, SMART objectives, space, and evaluation standards. They also considered the 'eight dimensions of product quality management: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality.

In the end, student Alison Galea brought life back into the light well inside the Faculty for the Built Environment, turning it into a student hangout area with a lounge and relaxation room. Jessica Galea revisited the outdoor space at the science lecture theatre to make way for some creative outdoor furniture and futuristic shapes intended for breaks between lectures. Brandon Saliba re-thought the Quad ditch, introducing new seating with versatile materials and better-managed spaces, perhaps encouraging others to soak in the summer sun during the end of semester time, preempting the much-needed summer break.

The designs show how spaces should reflect the way people really want to use them. Once designers place themselves as users in the centre of the project and build solutions around those needs, the gap between design for its own sake and design used to make change begins to close. 🅣
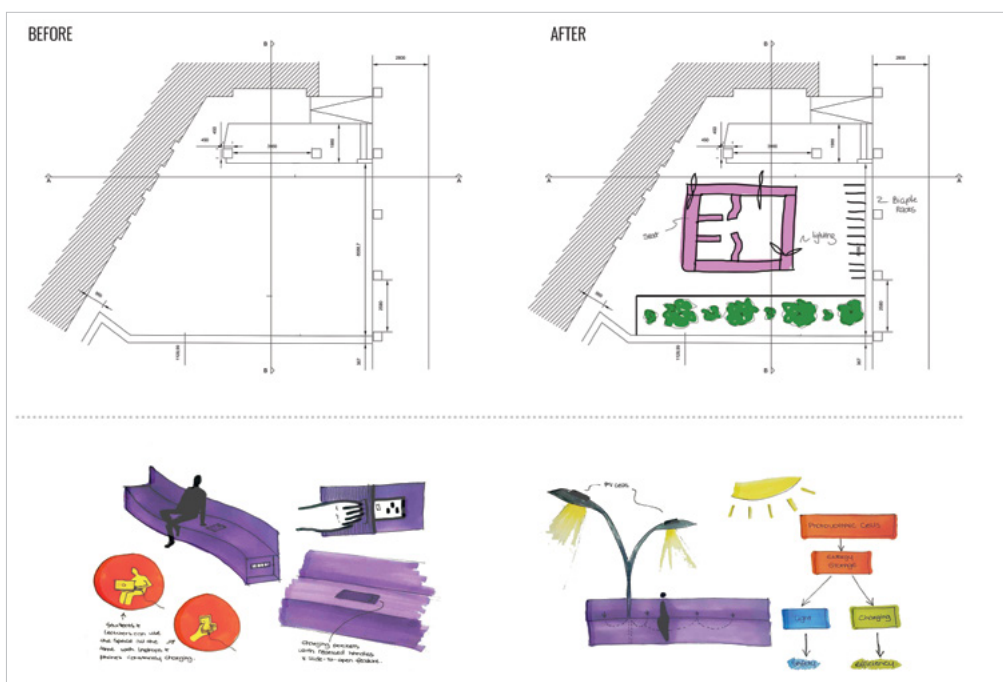
Opposite Page, Top: Realistic renders of the new relaxation spaces
Concept by Alison Galea

Opposite Page, Bottom: Concept layout plans of the space before and after redesign
Concepts by Brandon Saliba

Left: Plans and sketches of space before and after redesign
Concept by Jessica Galea

CONCEPT & LAYOUT

using the height of the space to create

a vertical connection between studios
pocket spaces on multiple levels ~ mezzanines
place for sitting
place for quiet study
place for relaxation

proposed plan
SCALE 1:200

existing layout
all measurements in metres
SCALE 1:200

proposed section
SCALE 1:100

RELAXATION AREA

LOUNGE

QUIET STUDY
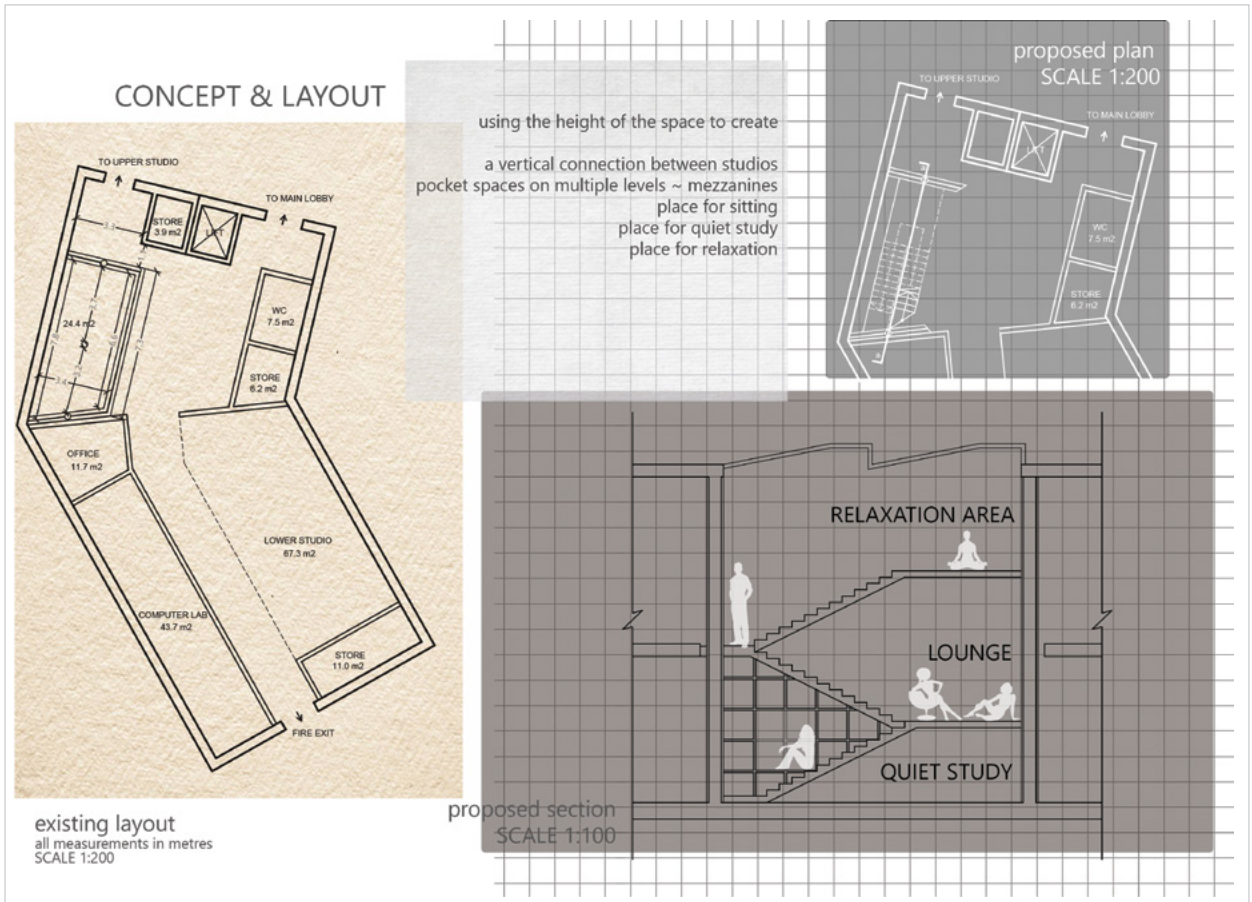
The designs show how spaces should reflect the way people really want to use them.

The new digital divide

Dr Philip Bonanno

Unequal access to technology and the Internet is traditionally termed the 'digital divide'. Both are expensive, which leaves some people behind. Today the situation has changed, with 98% of minors having home Internet access in Malta. Government targets digitally-deprived students by investing hefty sums to have tech at school. However, there is a new digital divide within formal education, and this time it is not about who uses technology but how they use it.

What is the attitude toward the technology that is being used in class? What is the goal that students are using that technology to accomplish? You can have countless schools on the receiving end of whole shipments of tablets and laptops, but the sad reality is that without an effective strategy, they are unlikely to reap the full benefits of that investment.

If technology is placed within a system that ignores students' needs and is unresponsive, if not completely resistant, to new teaching and learning methods, the result is completely counterproductive. A teacher's frustration with students being distracted by their devices is an everyday occurrence, and it needs to be addressed. The question is: Is this a technology-related problem or a more profound issue related to how humans discover and understand knowledge? Are these pedagogical conflicts arising from the presence of technology in class or from an epistemological clash between teachers' and students' beliefs about learning and knowledge sharing?

If we define pedagogy as 'guidance for learning', we need to provide guidance for a variety of learning methods. By focusing only on the 'chalk-and-talk' method of teaching delivery, we may actually limit access to different ways of acquiring knowledge. Besides using technology to enhance teaching, digital tools and resources need to be used to empower students: first to take over the management of their own learning, and second, to pursue different technology-enhanced learning avenues for acquiring, creating, and sharing knowledge. This gives the student better skills in digital and information (critical) literacy, in collaboration, and in networking, hence preparing them for the world of work.

To make this happen, challenges await both teachers and students. Teachers need to welcome new forms of learning, offering guidance and support rather than simply 'giving students all the information they need to know.' Students, on the other hand, have to overcome the mental conditioning that links learning directly to teaching so they can stand on their own two feet.

Students and teachers need to work together to adopt a more independent and customised approach to learning, enhanced and transformed through technology. **T**

A scientist and a linguist board a helicopter…

Amanda Mathieson

A scientist and a linguist board a helicopter, and the scientist says to the linguist, 'What is the cornerstone of civilisation, science or language?' It might sound like the opening line of a joke, but it's actually from the opening sequence of the film *Arrival* (2016). In the film, aliens have landed on our doorstep, and our scientist and linguist have been chosen as suitable emissaries to establish contact. The scientist, perhaps wishing to size up his new colleague, then poses the question. Whose field has been more important to the advancement of the human race? Science or language?

In reality, they are both wrong (or both half-right). It is true that language was necessary for us to organise as a species, forming complex networks of cooperation over vast distances and time. Without specialising our efforts and collaborating, we could not have built our great structures, supported large communities, or migrated over all continents. Yet, without science, without improving our understanding of the natural world, we would still be at its mercy.

Science is the tool we use to change circumstance. When populations are dying from an infectious disease, we create a vaccine. When we're unable to grow enough food to support ourselves, we develop a better strain of crop. When we struggle to transport materials over great distances, we create machines that will do it for us. Science is our secret weapon, transforming problems into possibilities. However, science alone means little. If innovation dies with its creator, who does it help? Science must be communicated to others before it can make a difference in any meaningful way.

It would be incomplete to bestow language or science with the title of 'the cornerstone of civilisation.' It was science communication that really drove our development. And I don't just mean this in the external sense. After all, is the transfer of genetic information from one generation to the next not science communication? What are we but a biological game of Chinese Whispers, the message mutating through each host but somehow continuing to make sense over millions of years?

The human race not only benefits greatly from science communication; we are the product of it. It is embedded into our biological and cultural history. Proof that it is not just knowledge but the sharing of knowledge that is the real root of power. Hopefully the aliens agree. 𝕋

STUDENTS

Insurance industry roots

Mark Laurence Zammit

Everybody wants peace of mind. From the moment we lock the front door before going to work, to the second the car's ignition turns off when we get back. Insurance makes that possible.

Insurance is one of the largest sectors of the Maltese financial services industry and a major pillar of its economy. Despite this importance, there is a research gap. Most historical records I referenced when looking into the history of insurance in Malta hinge on maritime history and historical accounts of bustling ports and the activity surrounding them.

My research aim was to initiate the first project actively chronicling the key contributors and events in Malta's insurance industry. I started with methods used by the earliest inhabitants of the island, tracing its roots in maritime trade, followed by the emergence of more complex and sophisticated insurance services and products.

Reference to insurance in Malta can be traced back as early as 750 BCE, the time of the Phoenicians. The earliest known insurance contract I found was dated to 1524, around 12 years before the oldest contracts known prior to this study. Intra and extra-territorial socio-political, economic, and regulatory events have strongly contributed to the development of insurance and have forged it into the industry it is today.

Through a series of semi-structured interviews, backed up by findings from empirical literature and archival research, I made some key discoveries. For example, after the Knights of St. John settled in Malta, Maltese farmers fearing a Turkish invasion sought security (insurance) from their landlords through contracts. I also found that in the 1980s, a very specific insurance existed for racing horses. These valuable insights are being published by Emerald publishing (London).

Understanding the past's lessons is the best way to prepare for the future. T

Escape the (Virtual) Room!

Natalia Mallia

Virtual Reality (VR) has created a whole new realm of experiences. By placing people into varied situations and environments, VR enables them not only to explore, but to challenge themselves and gain skills in ways never thought possible. With applications in medical and psychological treatment, VR is now being used to train surgeons, treat PTSD, and to help people understand what it's like to be on the autism spectrum. The key to this application is VR's ability to immerse its users.

Many agree that immersion needs two key ingredients: a sense of presence and interaction with the environment. Interaction comes in three main forms. Selection is about differentiating between items in the environment. Navigation allows travelling from one point to another and observing the environment. Finally, manipulation lets users grab, move and rotate selectable items. In addition to this, VR applications need a setting. Supervised by Dr Vanessa Camilleri and Prof. Alexiei Dingli, I chose to use escape rooms (adventure games where multiple puzzles are solved to leave a room) to experiment with these interaction techniques.

I used escape rooms because they're highly interactive and naturally immersive systems. And since interaction isn't a one-size-fits-all scenario, I also applied procedural content generation (PCG) techniques to create the escape rooms themselves.

People selected items using a reticle, a small circle in the middle of the screen which expands or contracts to indicate which objects they could interact with. They navigated the space by looking around through the VR headset and moving their joystick. They manipulated puzzles from a separate screen which I layered on top of the escape room. This allowed them to inspect objects to their heart's content, while also reducing the amount of clutter in the room.

Since there was no previous work in PCG escape rooms, I had to pave my own way. I used a genetic algorithm, a machine learning algorithm that mimics evolution in biology to select the best solution to a problem, to determine which puzzles and items would be placed in the escape room. I also programmed the game to create the rest of the room, placing floors, ceilings, and everything else that the algorithm didn't consider. This made the space look like it had been made by an actual person, despite being created through AI.

From the results gathered, most people found that the system allowed them to explore the VR environment in a very natural way. Players said that the room's generated interaction was consistent, reliable, and fun.

Understanding immersion is critical for VR's future applications. If we can help people hone these techniques by creating a few games along the way—so be it! **T**

PHILOSOPHY

Some focus on minutiae of day-to-day life: What do I do today? What food would make me happy? Others have wider aspirations and bigger questions to ask: What does it mean to be human? Why do I exist? Philosophy is the tool that allows us to even attempt finding answers. What follows are some of the answers from some of the University of Malta's avid thinkers.

TRAINING TO TEMPER:
EMOTIONAL LEARNING FOR YOUNG PEOPLE

*Over the last decade, workaholics have been glorified as the epitome of success. Problem behaviour is increasingly framed as 'interesting' and 'quirky' by certain media. But as mental health and well-being capture public attention, **Cassi Camilleri** speaks to **Prof. Carmel Cefai** about his efforts to promote social and emotional learning for children and young people—skills for a lifetime.*

ife is life, they say. Trial and error. You live and learn.

But how many times have you been frustrated with yourself because you 'never learn' from your mistakes?

How many times have you found yourself in a rough spot because deadlines are a dime a dozen and your to-do list is insurmountable? Your phone is ringing off the hook. All the people you have been ignoring are sending angry emails. You have not slept properly in days. All the while, you continue to dig your heels in, creating more issues with the people around you because you are so overwhelmed you cannot communicate like a decent human being. You are 40. Still think learning from experience is the only way you can go about this?

Human beings love patterns, routines. We love repeating what works. We also tend to repeat what doesn't though, because change is hard. But solutions exist. At the University of Malta (UM), Prof. Carmel Cefai (Faculty for Social Wellbeing), is hard at work pushing for social and emotional education (SEE) to be promoted and strengthened at all levels in Malta and Gozo.

His appreciation for the importance of relationships and addressing students' emotional needs in learning started over 40 years ago when Cefai was working as a primary school teacher. 'Getting to know the students individually, what they like, what makes them tick, providing individual attention according to their needs, was an important part of the teaching process. When I was teaching at Qormi, on Monday mornings my students and I would talk about horse racing—which horse won which race that weekend? I learnt many of the horses' names even if I wasn't that interested in horse racing. But then during the week we ended up using horses as examples during class. It was a good and easy way to engage students.'

Cefai agrees that while overprotecting young people is counterproductive, students should have the skills to make informed choices, avoid taking too many unsubstantiated risks, and make some but not too many mistakes. 'We do not need to experience highly stressful, painful, or traumatic experiences to learn or grow. The process of growth does not require that we become dependent on alcohol or drugs, engage in criminal behaviour, contemplate suicide or struggle with depression.' Playing devil's advocate, I say that such experiences provide their own brand of wisdom, but Cefai quickly retorts that whatever the takeaway may be, even if it is a positive: 'the price paid is much too high.'

WHERE DO WE BEGIN?

The majority of western culture, including Maltese, has a very particular problem when it comes to education—the whole process is vehemently geared towards academic achievement. There is a pervasive obsession with tests and grades. So the first thing we need to do, states Cefai, is move away from that. 'Education is not just preparation for work. It's also about the integration of cognitive, social, and emotional processes that make us human. If we provide an education based only on academic achievement, we will be shortchanging our children and depriving them from a good, quality preparation for adulthood,' he says—the whole aim of education.

SEE is the process by which an individual develops social and emotional competence through curricular, relational, and contextual approaches, skills that can be used for personal, social, and academic development. The concept already has a proven track record, Cefai notes. Where successfully implemented, SEE 'has already brought about a paradigm shift in education, [...] transforming it into a more meaningful, relevant, and humane process.' ◗
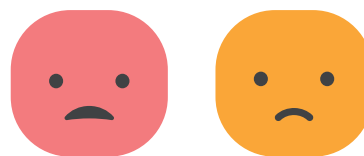
Rather than what kind of jobs people do, or what successful businesses need, as educators we need to ask: what kind of life would this child or young person be happy living?

Malta has come a long way already over the last few decades. Cefai remembers when, as a primary school teacher, he had tried to support a young school child with mental health difficulties who was not only ridiculed and bullied by the other children, but also shunned by adults because of his 'odd' behaviour. 'The boy clearly needed help from specialised professionals,' notes Cefai. 'But he also needed to attend school and learn with people his age. The alternative was to stay at home, which he inevitably did because he was often absent.' Thankfully, things worked out in the end. 'With the help of the head of school and some professionals, we managed to make some inroads and his behaviour started to improve. But I remember back then struggling with lack of professionals, fragmented services, and rampant stigmatisation.'

The situation has continued to improve since then. Cefai promptly lists the good practices which are already in place. 'We have Personal, Social, and Careers Education which has been in schools for years now. There have been various national initiatives promoting students' well-being, all working to prevent school bullying and violence, early school leaving and absenteeism, as well as to promote inclusion in all shapes and forms. Many colleges and schools have also been engaged in various initiatives to promote social and emotional learning, such as Circle Time, Restorative Justice and Resilience building.'

Not only that, but Cefai himself has worked with colleagues at the UM to found the Centre for Resilience and Socio-Emotional Health at the University, as well as with European counterparts to set up the European Network for Social and Emotional Competence. 'Our centre has been quite active over the years in providing training for school teachers in these areas, particularly in resilience development. We are also presently working with the Ministry on SEE training of practising staff in the early years,' he adds. But there is still much more to be done...

PRIORITIES

Children's development can be badly affected if their social and emotional well-being is not adequately addressed, says Cefai. This gap in emotional learning allows for educational systems to be driven primarily by market economy needs. Rather than what kind of jobs people do, or what successful businesses need, as educators we need to ask: what kind of life would this child or young person be happy living? The market-driven approach is focused on performance, individualism and competition, with little time and space for collaboration, sharing, compassion, and solidarity. Sadly, this situation is seen all too often.

So, how do we fix this? How do we make SEE a priority? Cefai immediately runs off a list of to-do's. 'We need to give social and emotional education more space and time in our schools. We need to invest more in teachers, giving them better training, and supporting them in taking care of their own health and well-being,' Cefai emphasises. 'Only when teachers take care of themselves and their well-being can they really create healthy, caring classroom environments where people build healthy relationships. It's only then that they can respond effectively to students' needs and become good role models.' We also need to put more effort into the early years, when the building blocks of mental health and well-being are laid. We need to encourage schools to take a more holistic approach, to give students a stronger voice, to encourage parents to take a more active, participative role in their children's education.

Of course this is not all achieved at the snap of our fingers. Resistance is to be expected, nods Cefai. 'In order for SEE to work, there needs to be good quality planning, implementation, monitoring, and evaluation. We know of state-of-the-art programmes which failed to make an impact as they were not implemented well, such as the Social and Emotional Aspects
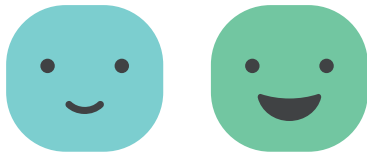
of Learning (SEAL) in the UK which was eventually withdrawn because of lack of effect.' Looking into reports about SEAL, 'a superficial approach to implementation ('box ticking')' was one of the main reasons the program failed.

Cefai also says that we need to be careful at all stages to avoid hijacking agendas. 'Social and emotional learning should always be centred on children and young people's needs. Their own and others' well-being. We need to ensure that SEE retains focus on the people it is meant to help, recognising individual differences, while avoiding labelling and pathologising children and young people. SEE is about mental health promotion and well-being and prevention, rather than on deficiencies, deficits, and illness. Another issue is not to let SEE be taken over by the neo-liberal 'business model' to fuel the market and global economy, where social and emotional skills are simply used to leverage productivity.' Despite all this, the case for SEE remains tremendously strong.

THERE ARE NO LOSERS HERE

A success story in SEE implementation is a success story for everyone. Reams of evidence through studies can be found touting SEE's praises. The approach enhances prosocial behaviour and mental health and well-being. It enhances academic achievement and prevents problem behaviours such as delinquency, anxiety, and depression. Such social issues cost taxpayers money to handle, mitigate, and fix. So much so, that the costs involved in setting up

Prof. Carmel Cefai
Photo by James Moffett

SEE are guaranteed to be not only returned, but exceeded. Some studies report that for every €1 invested, €11 will be returned to the economy in various shapes and forms.

'I have been involved in various SEE and resilience projects in schools both in Malta and abroad,' says Cefai. 'I have always been very encouraged by the interest, enthusiasm, and collaboration of students, school staff, and parents. Staff and parents have been resistant at times, thinking it will take precious time from academic learning, until they realise that our approach actually enhances it. They may think that SEE is about mental illness, until they they realise that is about health and well-being and learning all rolled into one. Children really like to learn in this way, finding it enjoyable, meaningful, and useful, while teachers reap the satisfaction of seeing their students excel, improving their own lives through their contribution.'

So much of our lives are determined by our beliefs and perceptions. Learning how to process events and information in an effective way can make all the difference in how sequences of events unravel. That violent knee-jerk reaction, that long-standing bitter belief about 'how the world works'; in difficult times, these thoughts can lead anyone down a long, dark path that's very difficult to come back from. Social and emotional education that teaches young ones to listen to themselves and respect their feelings, as well as those of others, could begin to change that.

In a world where we are bombarded by stimuli every waking moment, it is not hard to imagine that we need to take the time to look inward and listen—our children depend on it. **T**

Prof. Cefai has recently published three major publications in this area: An EU commissioned report on the integration of social and emotional education in the curriculum, an edited book on the promotion of mental health in schools and another edited book on the child and adolescent well-being and prevention of school violence.

Read more:
Cefai, Carmel, and Paul Cooper. *Mental Health Promotion in Schools: Cross-Cultural Narratives and Perspectives.* Sense Publishers, 2017.

Cefai, C. et al (2018) *Strengthening Social and Emotional Education across the Curriculum in the EU.Review of the international evidence.* Luxembourg: Office of the European Commission.

TRANSCENDENCE
THROUGH PLAY

Even though philosophers like Kant and Schiller of the aesthetic tradition never had the opportunity to troll some noobs in Call of Duty or slay a dragon in Skyrim, their views on the concept of play can be critical to our understanding of how the player relates to the game world. **Dr Daniel Vella** *explores the work of aesthetic and existential philosophers. Words by* **Jasper Schellekens.**

Professional philosophy is often imagined as the realm of musty rooms full of Delphic books and stuffy university professors in tweed jackets or the future unemployed. Modern philosophy is a technocrat's game, with work in the field mostly done by researchers publishing in highly technical, peer-reviewed journals in specialised niches. The field of digital games is one of these niches, coming into its own as fertile ground for philosophy—and the Institute of Digital Games (IDG, University of Malta) is keen to explore.

Philosophy is key to analysing digital games. By giving us the tools to study the fundamental nature of knowledge, reality, and existence, it lies at the heart of much of the work the IDG does. Prof. Gordon Calleja has worked with Ubisoft on game immersion. Dr Stefano Gualeni, recently featured in the magazines **TH!NK** (see issue 20) and *Kotaku*, explores the ethics of creating AI that is worthy of moral consideration, while working on a new game that plays with the concept of indexicality (the indexing of an object in context). Together with Dr Daniel Vella, he is now looking into the idea of existential projects in the work of Heidegger and Sartre, examining an individual's ability to project themselves into a certain kind of being.

Vella's area of expertise is the examination of the player's relation to his game avatar. He is currently dissecting the philosophical notion of play and how various philosophers across the centuries have claimed that it allows the player to transcend beyond who they actually are in real life. Kind of like that magical time during childhood when our unbridled imagination could turn us into anything we wanted to be.

WHAT IS THE WHAT?

To effectively dissect a video game, you have to be able to break it down into its component parts. The branch of philosophy referred to as ontology addresses what entities exist and how such entities may be grouped, related within a hierarchy, and subdivided according to similarities and differences. In a way, it can be considered the 'dictionary' of philosophy, as philosophers come up with names for these entities in order to make referring to them easier. Applied to the study of digital games, it lets us draw the border lines between the player and the avatar, between reality and the game world—and you'd be surprised how difficult it is to determine those borders.

Studying the relationship between the player and the game world can teach us a lot about how games impact individuals, how to evaluate games critically, and even our own relationship with reality. After all, to make a good game, you need to know how your audience will interact with it. To evaluate a game, you need to understand how the parts interlink and agree on what to call them. To understand reality, you can observe phenomena that happen in virtual environments and extrapolate from there. In his most recent research, Vella has mapped out a route that starts in concepts set out by aesthetic philosophers and then continues by reflecting on existentialist philosophers to finally arrive at a meaningful analysis of how an individual experiences play in a fictional game world. The map can then be used as groundwork for the understanding of how a player can be engaged in the game to take on the role of the avatar—and how the taking-on of this new identity in the virtual world reflects back on their identity in the actual world.

AESTHETICS - KANT BEAUTY BE FREE

The start of Vella's path required an understanding of aesthetics, the branch of philosophy that studies beauty and taste. It emerged in the 18th century with the seminal works *Critique of Judgement* by Kant and *Letters on the Aesthetic Education of Man* by Schiller. Aesthetics focuses on the study of beauty, which is understood not as being in the eye of the beholder, but rather as an objective judgement.

Kant and Schiller conclude that beauty and freedom are intrinsically linked. Although the particular relationship to play is mainly implied, it is worth following their logic on how beauty and freedom are connected because it is on that same crossroads that play finds itself. And this sense

of freedom provides the foundations for existentialist philosophers and ultimately the work of Vella.

Kant and Schiller see beauty as resulting from breaking the chain of cause and effect and having no motivation outside of itself. Kant argues that freedom is attained where reason overcomes the senses. The individual is satisfied in its own thinking regardless of the input provided by the senses and therefore it is free. Schiller sees it less as a victory of one over the other. Instead he believes that freedom occurs where the rational and the sensual overlap. Normally the rational would constrain the external impulses of the world by making the claim of caution (do not climb up that tower Ezio, you could plummet to your death), or the external impulses would constrain the rational because they have no other choice (Oh Ezio, you jumped, I guess we'll have to get a cleaning crew to clean up the splat you left behind). But when they are united in play, they cancel each other out which leads to freedom, as the player is no longer imprisoned by cause and effect. While playing a game you know that rationally your actions will have a particular effect, but the impact is no longer governed by necessity. Go ahead and jump from that tower into the haystack, Ezio.

THE EXISTENTIALISTS - FINK ABOUT THE PLAYWORLD

Existentialists Fink and Sartre rework aesthetic dualism (rational vs physical) in existential terms: for the existentialists, the duality is only perceived. Individuals are able to take themselves, as subjects, and make themselves the object, meaning they are able to step outside of themselves and contemplate what they are doing from an almost external point of view. In this way, they are able to extend beyond themselves, allowing their consciousness to transcend their own material restrictions.

Sartre and Fink both explicitly acknowledge the importance of play. In Sartre's view, during play the individual is no longer determined by external reality (the sensual world) because as a player, they have the freedom to set their own tasks, demands, and expectations. The object the player is playing with still exists in external reality, but the act of playing with it makes it more than just that original object. Although the gamepad in the player's hand is still just a gamepad, it can, for example, be a gun at the same time. Therefore it can be argued to be more than just a gamepad.

This leads us to Fink about the playworld: a place where fictional actions are portrayed by actions in reality. The fictional action of shooting zombies in a game happens through pushing the R1 button on the gamepad. In the playworld, the player becomes an imaginary character, one that is different from the player and hence allows the player to be someone else.

This brings us back to that magical time of childhood where we were nothing but unbridled potential, and nothing actual. As we grow, we're confronted with the fact that life is (spoiler alert) finite and therefore with every second that passes the realm of possibilities shrinks. In play, it is no longer necessary for the individual playing to be constrained by the rules governing their life and the ever-decreasing realm of possibility. The playworld becomes a place where the imaginary is placed inside the actual. The individual playing the game becomes both a player (who they are in reality) and a role (the character they are playing in the playworld).

To illustrate this point with an example, imagine you are playing at

An individual playing a game is both themselves and someone else at the same time.

In the Playworld you put the fictive in a container of the actual - Fink

Dr Daniel Vella

being a valiant knight defending the serfs on your manor from a gang of bandits. In this scenario, you might use a device with a motion sensor that you will wield as a sword to fend off the bandits. This device is real, but in the playworld it is a knight's sword, which isn't real. In any case, you fend off a bandit attack with the skill and panache of a skilled swordsman, regardless of the fact that you have never held a blade in your life. By taking on this role in the game, you have transcended yourself and become more than you are. Through play you have become a valiant knight and skilled sword-fighter. This very transcendence is what Sartre and Fink refer to as the freedom to be other than themselves, hence play is a route to freedom.

TRANSCENDENCE - YOU CAN BE MORE THAN YOURSELF

Making a game without understanding how players interact with the playworld is like navigating without a map in a foreign country. If you're lucky, you may eventually get to your destination, but you'll probably end up wasting a lot of time going around in circles. By dissecting the

notion of play through the work of aesthetic and existential philosophers, we gain a better understanding of how a player interacts with the gameworld and where that boundary lies. In the same vein as a writer who needs to know which words to use to tug at the heartstrings of their reader, a game designer has to understand which game mechanics they can use to tug at the heartstrings of their players. They need to understand how players will react when a certain game mechanic is used. Fully understanding this interaction can even make the dreaded quicktime event—the 'push this button quickly or die' type events—an effective game mechanic because you can unlock how the player interacts with the game world and its rules. A quicktime event for shooting a zombie would be yawn-inducing, but it might work for a particularly cinematic sequence where the designers want to stretch the rules of the world.

An individual playing a game is both themselves and someone else at the same time. They become the character, and by becoming the character, they transcend beyond themselves. They take on the goals, history, or traits of

whomever they are playing as, and by doing so, they break reality's grip on the realm of possibility (Yes Johnny, even you can become an astronaut despite the fact that you haven't seen the night sky from your mother's basement since November). So even though the character in the game is performing the actions in the playworld, the individual is also performing actions in reality. Whether that is pressing a button on a gamepad or swinging a device at imaginary bandits, they are still actively interacting through a real object with the game world. This type of detailed examination also has interesting implications regarding the effects of play on a gamer's psychology, beyond just game design. Take the effect of violent games on players. Since players feel that they are external observers and not their real selves when playing a game, violent video games do not have the same impact as violence itself.

Individuals during play are still themselves. After all, people don't mutate into something else when they play a game. At the same time, they are not themselves within the playworld and take decisions they never would in reality. Few people would try and jump off that medieval tower into the haystack expecting to survive, but you as the character would. So when you do take that leap of faith, you become more than your actual self at the press of a button—so walk to the edge, push the d-pad forward, and press L1 and X. 🖪

Further reading:
Gualeni, S. 2018, (forthcoming). "A Philosophy of doing in the digital". In Romele, A. and Terrone, E. (eds.). Basingstoke (UK): Palgrave Macmillan

Gualeni, S. .2017 "VIRTUAL WELTSCHMERZ - things to keep in mind while building experience machines and other tragic technologies". In Silcox, M. (ed.), Experience Machines: The Philosophy of Virtual Worlds. London (UK): Rowman and Littlefield International.

THE PHILOSOPHY OF CREATIVITY

In this age of specialisation, finding a niche is key to most people's career progression. But it is not the only way. **Cassi Camilleri** *sits down with philosopher poet* **Prof. Joe Friggieri** *to gain insight into his creative process.*

t was a very warm April day when I found myself sitting in front of Prof. Joe Friggieri. My heart was racing—I had just run up three flights of stairs for a rescheduled meeting after having missed our first earlier in the day. I had lost track of time while distributing magazines around campus. My eyes briefly scanned his library, wishing it was mine, then got right down to the business of asking questions.

Friggieri balances between two worlds: the academic and the creative. His series *Nisġa tal-Ħsieb*, the first history of philosophy in Maltese, is compulsory reading for philosophy students around the island. His collections of poetry and short stories have seen him win the National Literary Prize three times. I ask Friggieri if he separates his worlds in some way. 'I can't stop being a philosopher when I'm writing a short story or play. Readers and critics of my work have pointed that out in their reactions,' he says. 'I do not necessarily set out to make a philosophical point in my output as a poet, short-story writer, or playwright, but that kind of work can still raise philosophical issues.'

'Dealing with matters of great human interest—such as love or the lack of it, happiness, joy and sorrow, the fragility of human relations, otherness, and so on—in a language that is markedly different from the one used in the philosophical analysis of such topics can still contribute to that analysis by creating or imagining situations that are close to the experiences of real human beings,' Friggieri illustrates.

THE URGE TO WRITE

In reality, Friggieri is usually inspired by day-to-day moments, things normally overlooked in today's loud and busy world. 'In my literary works, I am inspired by what I see, hear, and feel; by people and events, by what I read about and by what I can remember,' he says. It could be anything from a news item to a painting, a whiff of cigarette smoke, a piece of music, or a word overheard at a party. 'All of that can trigger off an idea. Then, when I'm alone, I seek to elaborate the thought and to convey it to others by means of an image or series of images in a poem, or as part of the plot in a short story or play.'

While on the subject of inspiration and starting points, I wondered: how does Friggieri work? First, he swiftly explains his aversion to using computers ➤

for his writing. 'I do all my writing the old-fashioned way,' he notes. 'I use pen and paper. I find it much easier to write that way than on my computer. It feels like my thoughts are taking shape literally as I push my pen from left to right across the page. I think with my pen, much in the same way that a concert pianist thinks with her fingers and a painter with her brush. It's that kind of feeling that makes me want to go on writing.' At this point, the subject of the Muse comes up. Is this something Friggieri believes in? 'Waiting for the Muse to inspire you is just a poetic way of saying you need to have something to write about and you're looking to find the right way of expressing it,' Friggieri explains. 'I write when I feel the urge or the need to write,' he tells me with a smile.

The sheer volume of work Friggieri has built up over the years seems to imply that he writes daily. But in reality, his workflow is more akin to sprints than a marathon. He tells me deadlines are a good motivator for him to write, providing a tangible goal he can work towards. 'My first two collections of short stories were commissioned as weekly contributions to local newspapers,' Friggieri says. 'That's how 'Ir-Ronnie' was born.' Ir-Ronnie is a man who finds himself overwhelmed by life's pressures: family, work and everything in between. As he starts to lose touch with reality, 'ordinary, everyday living becomes an ordeal for him, an obstacle race, a struggle for survival,' says Friggieri. More recent works, such as his latest collections of short stories—*Nismagħhom jgħidu* and *Il-Gżira l-Bajda u Stejjer oħra*—also reflect this realism, exploring the complexity of interpersonal relations between different people from different walks of life. On the other hand, *Ħrejjef għal Żmienna (Tales for Our Times)* finds its roots in magical realism, which makes these stories a very different experience for his readers. The books have been well received, with translations into English, French, and German. Paul Xuereb, who worked on the English translation, described the tales as 'drawing on the dream-world and waking reveries to suggest the ambiguity and often vaguely perceived reality of our lives.'

THE CREATIVE PHILOSOPHER

When it comes to talking about his other works and creativity, Friggieri often refers to language. When I asked him about his thoughts on creativity and whether he believed everyone to be 'creative', his response was positive. 'As human beings, we are all, up to a point and in some way, creative,' he says. A prime example is humanity's use of language. 'Think of the way we use language. Dictionaries normally tell you how many words they contain, but there's no way you can count the number of sentences you can produce with those words. Language enables us to be creative in that sense, because we can use it whichever
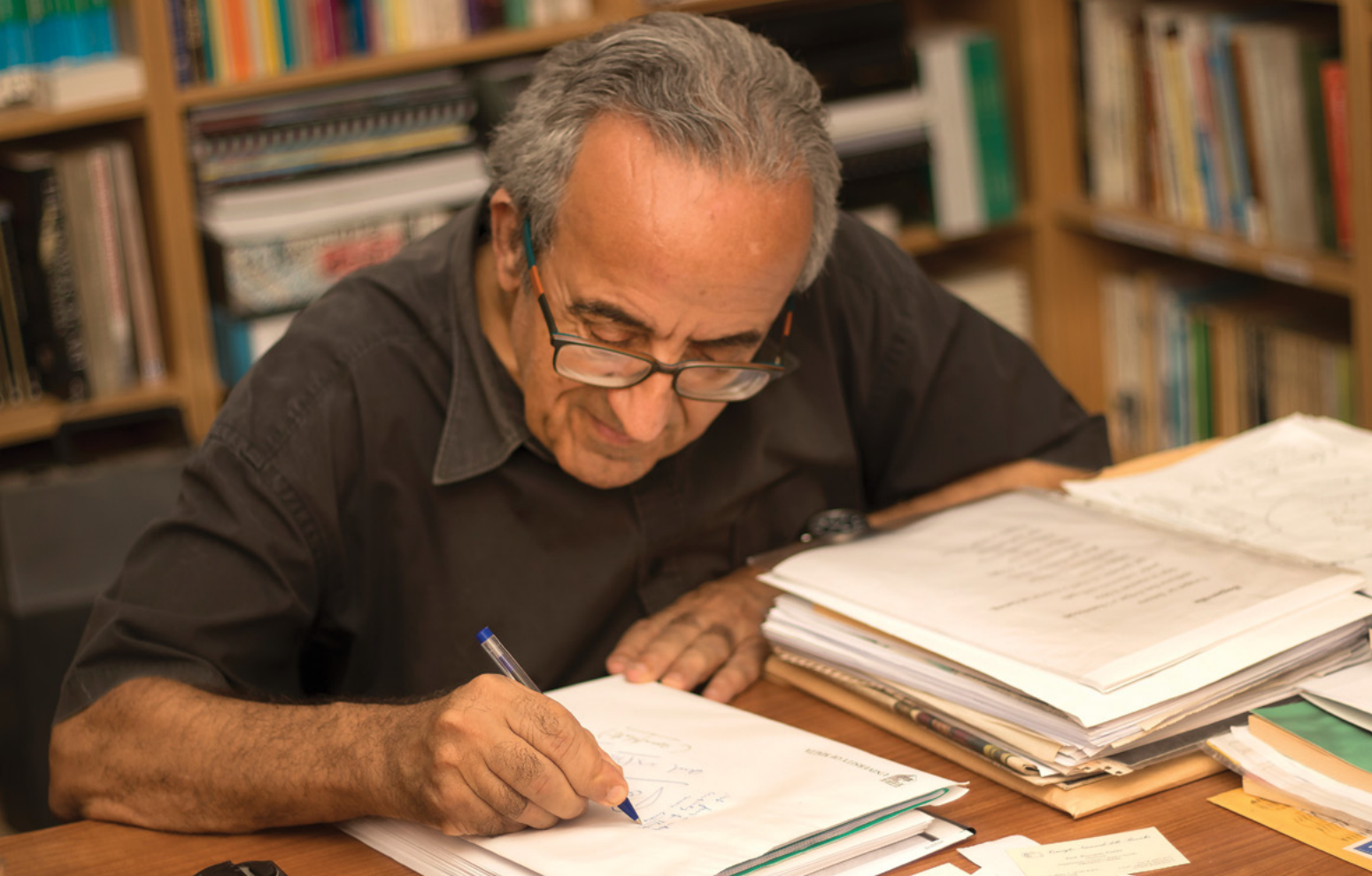
Prof. Joe Friggieri working on one of his literary projects
Photo by James Moffett

way we like, to communicate our thoughts and express our feelings freely, without being bound by any definite set of rules. In a very real sense, every individual uses language creatively, in a way that is very much his or her own. I think the best way to understand what creativity is all about is to start from this very simple fact.'

Is Friggieri creative when he writes his philosophical papers? 'Yes,' he nods. 'Each kind of writing has its own characteristic features. But creativity is involved in all of them.' With philosophy, 'you need more time,' he notes. 'You need to know what others have said about the subject, so it involves researching the topic before you get down to saying what you think about it. When it comes to writing a poem or play, you're much freer to say what you like, much less constrained.'

In fact, Friggieri has five plays under his belt. Here is where the two worlds of academia and creative writing merge. 'In three of my five

full-length plays, I make use of historical characters (Michelangelo, Caravaggio, Socrates) to highlight a number of issues in ethics and aesthetics that are still very much alive today,' says Friggieri. Taking *L-Għanja taċ-Ċinju (Swansong)* as an example, Friggieri explains how 'Socrates defends himself against his accusers by raising the same kind of moral issues one finds in Plato's *Apology*. The Michelangelo and Caravaggio plays, on the other hand, highlight important questions in aesthetics, such as the value of art, the relation between art and society, the presence of the artist in the work, the difference between good and bad art, and the mark of genius.'

Talking of theatre, Friggieri remembers how, before writing his first play, he had directed several performances. This was where he learnt the trade and what it meant to have a good production. 'I have also had the good fortune of working

with a group of dedicated actors from whom I learnt a lot. In my view, one should spend some time working in theatre before starting to write for it.'

As time was pressing, and the sun was starting to move away from its opportune place in the window, I asked Friggieri one last question, the one I had been obviously itching to ask. What advice does he have for writers? The answer I got was one I should have expected. 'Budding writers should write. Then they should show their work to established practitioners in the field. The first attempts are always awkward. As time goes by, one learns to be less explicit and more controlled, to use images to express one's thoughts where poetry is concerned, to develop an ear for dialogue if one is writing a play, to produce well-rounded characters in a novel, construct interesting plots, and so on. All this takes time, but it will be worth the effort in the end.' And with that, we had the perfect closing. 🔲

IL-LETTERATURA U S-SNIN TMENIN

Hemm min jgħid li konna viċin gwerra ċivili, hemm min ma jaqbilx. Li hu żgur hu li fil-letteratura, is-snin tmenin ħallew impatt b'diversi modi; mhux biss fin-narrattiva li nkitbet dakinhar, imma wkoll l-epoka bħala sfond ta' plott jew ispirazzjoni għall-awturi kollha li sabu refuġju fiha biex jesprimu l-arti tagħhom. Kliem ta' **Emanuel Psaila.**

-aspett soċjali għandu importanza kbira u l-medda taż-żmien hija vitali biex nifhmu dak li ġara fit-tmeninijiet, nifhmu għaliex seħħ, x'ġiegħel lill-poplu Malti jirreaġixxi b'dak il-mod, u x'sehem kellha l-letteratura f'dan kollu. Fuq kollox: kien ir-riżultat pervers tal-elezzjoni ġenerali tal-1982 li qanqal dan kollu? Jew l-għeruq kienu ilhom ġejjin mis-sittinijiet u saħansitra mit-tletinijiet?

Kienet ħaġa naturali li fit-teżi tiegħi *Is-snin tmenin u l-prożaturi Maltin* (iggwidat minn Dr Adrian Grima) inwaħħad flimkien żewġ affarijiet li nħobb: il-politika u l-letteratura. Apparti minn dan, fis-snin tmenin kont żagħżugħ militanti fi ħdan grupp politiku. Biss it-teżi għenitni nifhem perspettivi oħra, nara affarijiet li sa ftit

snin qabel ma kontx nifhimhom, kif ukoll li nfittex it-tekniki u l-għodod tal-letteratura li titkellem fuq dan iż-żmien.

Il-letteratura li dejjem ippruvat tqanqal ħsibijiet ta' kuxjenza ċivili u soċjali kienet tappartjeni lill-esponenti xellugin u fit-tletinijiet bdejna naraw kitbiet minn dawk li ftit snin qabel kienu xxierku fil-Partit Laburista Malti (hemm bosta biex issemmihom kollha). Dawn kienu jafu x'ġara u x'qed jiġri f'pajjiżi oħra, bħal Franza, l-Ingilterra, il-Ġermanja, u l-Istati Uniti, u għalhekk użaw il-letteratura biex imexxu 'l quddiem l-ideoloġija tagħhom. Użaw stili u ġeneri differenti, imma l-għan ewlieni kien li jnisslu kuxjenza soċjali, biex jgħinu lill-batut, jedukaw, u jgħallmu.

Lejn l-aħħar tas-sebgħinijiet u l-bidu tat-tmeninijiet din l-istrateġija fil-letteratura ntużat minn kamp

ieħor differenti u rajna esponenti tal-lemin jiktbu letteratura diretta b'għan li tikxef il-qagħda politika reali tal-epoka. Trevor Żahra kien minn ta' quddiem nett. Il-kotba tiegħu *Trid Kukkarda Ħamra f'Ġieħ il-Biża'* u *It-Tmien Kontinent* huma novelli li jattakkaw b'ironija diretta u b'sarkażmu qawwi lill-gvern tal-ġurnata. Żahra wkoll daħħal element qawwi ta' politika fi ktieb għat-tfal *Qrempuċu f'Belt il-Ġobon* fejn mhux faċli ssib il-parodija midfuna taħt parodija oħra. Biss meta l-qarrejja jindunaw biha, l-ironija tant tkun qawwija li ssir drammatika.

Ktieb li kien fuq fomm kulħadd fit-tmeninijiet huwa r-rumanz *Fil-Parlament ma Jikbrux Fjuri* (1986) ta' Oliver Friggieri. Huwa rumanz filosofiku ħafna u ftit kien hemm min fehmu, biss nofs Malta xtrat ir-rumanz u n-nofs l-ieħor warrbitu. Dan ir-rumanz intuża bħala

propaganda mill-Partit Nazzjonalista għall-elezzjoni tal-1987. It-tnedija tiegħu f'lukanda prominenti kienet qisha manifestazzjoni u saħansitra nqaleb bħala dramm u ntwera għal ġimgħa wara ġimgħa. Madanakollu l-istrateġija rnexxiet u l-letteratura kienet strumentali biex issir bidla.

Apparti l-letteratura tas-snin tmenin, dan iż-żmien sar sfida biex tinkiteb narrattiva dwaru. Wieħed minn tal-bidu li uża dan l-isfond kien Immanuel Mifsud. *L-Istejjer Strambi ta' Sara Sue Sammut* huwa kollu mpoġġi f'dan il-kuntest. L-ironija, is-sarkażmu, u ċ-ċiniżmu jinħassu sew u għalkemm inisslu tbissima fuq fomm il-qarrejja, iħallu stampa reali.

Clare Azzopardi ilha tesperimenta fuq is-snin tmenin u ktieb wara ktieb qed iżżid id-doża tagħha. Id-dramm tagħha *L-Interdett Taħt is-Sodda* jitkellem dwar il-kwistjoni politika reliġjuża tas-snin sittin u minn hemm naraw kemm Azzopardi qed tnawwar fil-fond fuq żminijiet li kienu nieqsa mil-letteratura tal-epoka. Fin-novella *Linja Ħadra*, li hija parti minn ġabra li ġġib l-istess isem, hemm l-ewwel mistoqsijiet u l-isfond huwa l-istrajk tal-għalliema f'nofs is-snin tmenin. Id-doża politika, għalkemm sottili, żdiedet f'ġabra oħra ta' novelli - *Kulħadd Ħalla Isem Warajh* - fejn isem Dom Mintoff, personaġġ li jiddomina t-tmeninijiet, jinsab minqux f'kull novella taħt l-akronomu PDM. Jidher

Emanuel Psaila

li Azzopardi qed tipprova tgħix il-memorja tas-snin tmenin permezz tal-letteratura. L-aħħar rumanz tagħha, *Castillo*, jitkellem b'mod ċar fuq it-tmeninijiet, dwar il-bombi li kienu jsiru, dwar ir-rwol tal-pulizija u dwar r-relazzjonijiet li kellu l-Gvern Malti ta' dak iż-żmien, speċjalment ma' Gaddafi.

Pierre J. Mejlak isemmi t-tmeninijiet mil-lenti ta' tifel żgħir li trabba fil-Każin Nazzjonalista tal-Qala, Għawdex. F'*Qed Nistenniek Nieżla Max-Xita* hemm xi novelli b'laqta awtobijografika li fihom nistgħu nħossu t-tensjoni tal-elezzjoni ġenerali tal-1987 kif ukoll iċ-ċelebrazzjonijiet mar-rebħa tal-Partit Nazzjonalista.

Ġużè Stagno fix-xogħlijiet tiegħu jdaħħal battuti ta' persuna li għexet Marsaxlokk u jitfa' botti bħall-

kwistjoni tat-televixin tal-kulur li kien novità għal dak iż-żmien.

Is-Sriep Reġgħu Saru Velenużi ta' Alex Vella Gera għandu l-plott ibbażat proprjament fuq kumplott ta' qtil tal-Prim Ministru Dom Mintoff u miktub b'mod miftuħ, tant li n-narratur u l-protagonist huwa Nazzjonalist kbir.

Hemm ukoll kittieba oħra li jużaw dawn is-snin bħala sfond biex jibnu l-plott u rumanz li l-ftuħ tiegħu huwa bbażat fuq din l-epoka huwa *Xandru Miżżewweġ u Gay* ta' Javier Vella Sammut.

Kull deċenju fih tiegħu, u kollha xi ftit jew wisq għenu fl-iżvilupp tal-letteratura. Inħoss li fit-tletinijiet ippruvajna nersqu lejn dak li kien qed jiġri barra minn Malta, imma l-gwerra tellfet l-iżvilupp ta' kollox u kellna nistennew sal-ħamsinijiet biex bdejna naraw xi ħaġa żgħira. Fis-sittinijiet il-Moviment Qawmien Letterarju, għalkemm kien progressiv u kien hemm bżonnu, żamm lura milli jitkellem dwar l-attwalità speċjalment dwar il-kwistjoni politika reliġjuża. Biss is-snin sebgħin u tmenin reġgħu xprunaw lill-kittieba biex jiktbu fuq il-fattwalità u ma jibqgħux iktar passivi.

Is-snin tmenin, bit-tajjeb u l-ħażin tagħhom, u bit-turbulenza tagħhom, għenu ħafna fl-iżvilupp tal-letteratura Maltija u għalkemm għaddew tliet deċenji, kienu u ser jibqgħu jiġu mfittxija minn kittieba biex fuqhom isawru x-xogħlijiet tagħhom. ■

Talking Toys
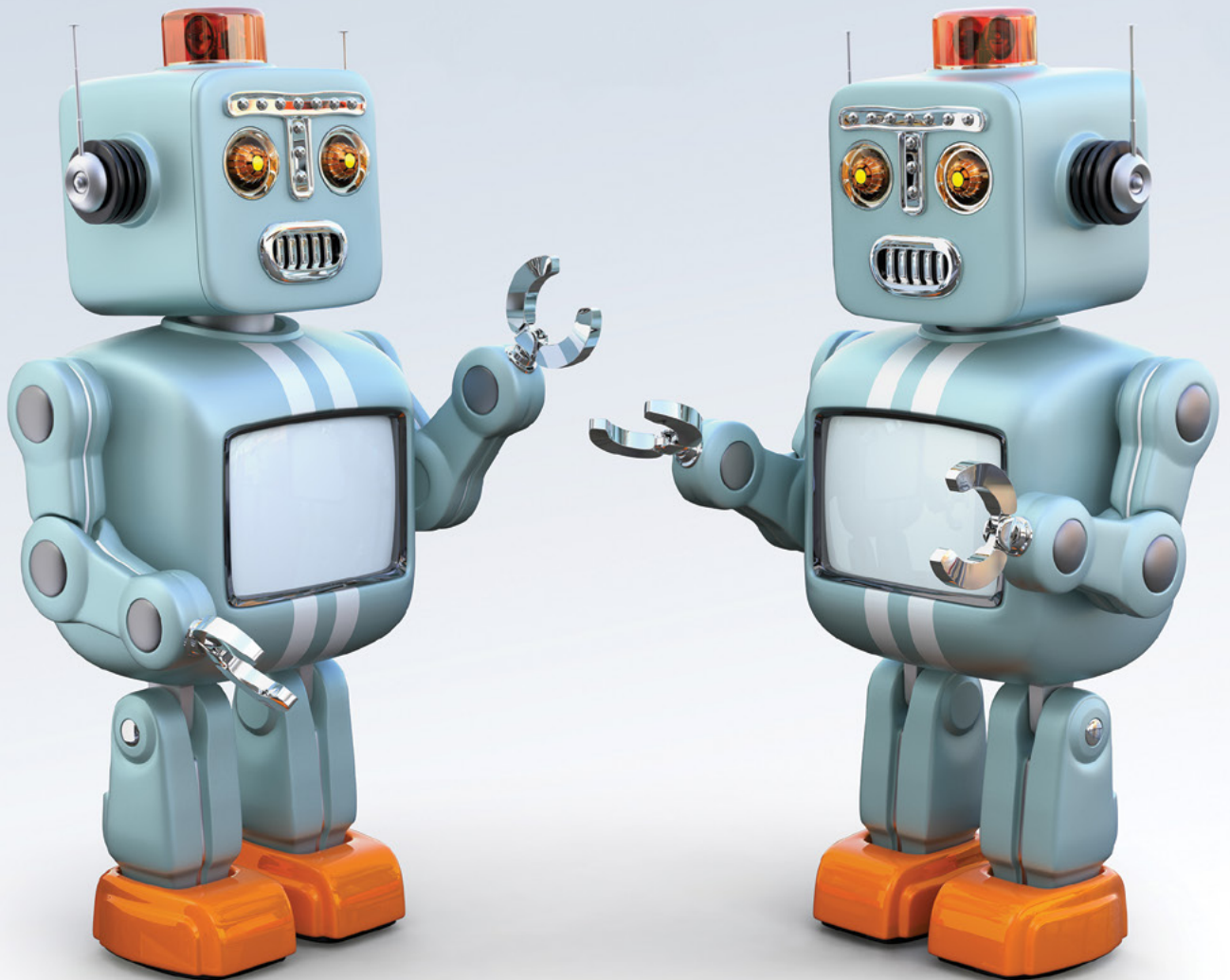
UI Icon characters
Courtesy of the SPEECHIE team

While speech development starts early in life, the course of acquiring and processing language in a bilingual country like Malta is challenging. Engineers and language experts at the University of Malta have teamed up to build a toy that will help children overcome that hurdle. Words by **Emanuel Balzan**.

Toys and play are critical in children's lives. It is through play that children learn how to interact with their environment and other people while developing their cognitive, speech, language, and physical skills.

The way children play reveals many things including whether or not they are hitting particular development milestones. Play is also used by professionals who intervene when those skills are not acquired. Speech and language pathologists (SLP) use toys to tailor tasks based on their objectives for the child, determined following their assessment. For this reason, toys are vital tools.

With technology moving at the rate it is, electronic components are easier and cheaper to access. As a result, a lot of smart, educational toys are now available on the market. However, Dr Ing. Philip Farrugia (Department of Industrial and Manufacturing Engineering, Faculty of Engineering, UM) honed in on a gap in the market—a smart toy that supports English and Maltese.

To make this happen, Farrugia recruited a team of researchers from the university. Engineers Prof. Simon Fabri and Dr Owen Casha joined the effort. Researchers Prof. Helen Grech and Dr Daniela Gatt brought their expertise in speech and language acquisition and disorders. The team was finally complete when game development company Flying Squirrel Games stepped into the picture.

GETTING DOWN TO BUSINESS

The SPEECHIE project is divided into three stages. During the first phase, we sought to understand the process of speech and language acquisition, assessment, and therapy. We involved users through workshops that allowed us to observe children's play and their toy preferences. We also conducted focus groups with parents to identify what they most wanted from toys. During these sessions, one parent noted how 'there are not any [educational] toys in Maltese our little ones can play and interact with.' Others agreed with this observation. Parents also raised concerns about children's attraction to tablets and smartphones, noting how they interfered with social

interaction. On the tail end of this discussion, one parent quickly added that 'the toy must have something to make it feel like a toy and not a gadget.'

With further questioning, we also came to realise that different parents have different criteria when deciding to buy a toy. One parent told us that before buying a toy for her daughter, she would 'try to see for how long she will play with it and what the toy will give her in return.' Another parent, concerned about toys' safety, checks for the CE mark (Conformité Européene) prior to purchasing the toy, saying that he associates the mark with better quality. However, he also confessed that 'in the hands of children, nothing remains of quality. Give them something which is unbreakable and they will manage to break it in one way or another.'

Since our toy is intended for use in speech therapy, we went ahead and organised more focus groups with SLPs. Outlining the role of toys in their clinics, SLPs said '[they] are normally used as a reward. If you know that this child likes blocks, then you use them to motivate the child.' Toys are also used as part of the ●

language tasks SLPs give. 'We use objects to put a grammatical structure in a sentence. Many times you find something that represents a noun, a verb, an object and then put them together' to model the appropriate sentence construction. This prolific use of toys, however, brings with it a very practical problem. One SLP explained how challenging things can get on a day-to-day basis due to the lack of multipurpose toys. 'We are always carrying toys... we are always carrying things around with us. Even our cars... it is like I have ten kids,' she said.

To address this issue, SLPs emphasised how useful it would be to have a flexible toy with multiple functions. One that does not bore children and which they can use to target different speech and language therapy goals. They also drew our attention to a prevalent but damaging mentality that they are trying to address. 'Unfortunately, the majority of Maltese parents have a mentality that the more money they spend and the more therapy sessions for their children, the sooner the problem is alleviated, but in reality this is not true. The work needs to continue at home on a daily basis. It is not solely our responsibility,' the SLP said. Much like when we practice daily to learn to play an instrument, speech and language therapy works the same way.

Sharon Borg, an experienced occupational therapist from the government's *Access to Communication and Technology Unit*, said that the toy we had in mind could provide a simple way for parents to engage with their children and work at home on related exercises. Borg's colleague, Ms May Agius, also noted the need for the toy to offer 'surprises', saying that 'anticipation and elements of surprise draw kids and keep them engaged.'

Here we have only touched the surface of all the ideas brought forth. However, by considering the children's, therapists', and parents' needs early in the engineering design process, we should be able to reduce the number of design iterations we have in future.

REACHING OUT

Design is key. Based on the feedback from the focus groups, we have now started working on the hardware and the software. But the journey is not straightforward. One issue we needed to deal with was the lack of compatibility between the 3D modelling software Flying Squirrel Games used and the technology used by the UM. From an academic point of view, because of the innovative nature of the toy we are making, we needed flexibility, so we modified Flying Squirrel's virtual model to add different mechanisms which involve moving parts. These alterations now allow us to create support to fix electronic components within the device and ensure that no moving part is impeded by another part. As a result, assembly is much easier.

Emanuel Balzan and Dr Ing. Philip Farrugia
Photo by James Moffett

Front left to right: Dr Ing. Owen Casha, Loridana Buttigieg, Emanuel Balzan, Dr Ing. Philip Farrugia, Prof. Helen Grech, Anthony Demanuele, Prof. Simon Fabri. Missing from the photo: Dr Daniela Gatt and James Attard.
Photo by James Moffett

We have also made the decision to build SPEECHIE software using modular blocks. This will enable us to switch parts and functions around so we can widen the idea of who might enjoy our product. The toy will not only be of use to children with speech and language impairments, but also to others. This approach was inspired by a meeting with behavioural economist Dr Marie Briguglio who warned us that labelling the toy could be stigmatising. She explained that it should not become 'an isolated toy which kind of becomes a label: because I have this toy, that means I have speech impairment.'

Despite the aversion some parents felt towards technological devices, as said during focus groups, Borg also encouraged us not to shy away from using them. She said children with autism responded very well to technology, and therapists will

make the best choice for the child to improve their skills. To hit a sweet spot in between these views, we are incorporating functions that will allow for a kinesthetic learning experience that involves physical activities rather than passive consumption of instructions. We want to mix different modes of play to encourage effective learning. We do not want kids to sit and watch their toy, but to move around, dance, and sing with other children.

With all of these choices under our belt, we now have a working prototype. But the SPEECHIE toy is not yet complete. In fact, the coming months will see us working on the mechanisms and the interfacing of electronics.

Towards the end of the year, we will start putting the toy into preschoolers' hands to determine its effectiveness and efficiency in regard to speech and language therapy. To do this, we

will compare the progress of children who use SPEECHIE with those who only use traditional SLP methods.

What we hope is that this toy will encourage parent-and-child interaction through play. We want to enable more frequent use of both Maltese and English and allow children to be safely exposed to technology and to a fantastic learning experience—all while having a ball. **T**

MIND THE GAP!

The world is changing. Technologies are developing rapidly as research feeds the accelerating progress of civilisation. As a result, the job market is reacting and evolving. The question is: Are people adapting fast enough to keep up?
*Words by **Giulia Buhagiar** and **Cassi Camilleri**.*

M*ur studja ha tilħaq*.' (Study for a successful future.)

From an early age, most Maltese students are conditioned to think this way. You need a 'proper education' to land yourself a 'good job'. But students graduate, and with freshly printed degrees in hand, they head into the job market only to be disappointed when the role they land seems unrelated to their degree. Yet vacancies are ready for the taking; there are many unfilled jobs in the STEM fields, which create 26% of all new vacancies according to recent research from the National Statistics Office.

So, if there are vacancies available, what is the problem? A skills gap.

Academic qualifications do not guarantee that graduates have the right skills for work. At a conference addressing the skills gap organised by the Malta University Holding Company (MUHC) and the Malta Business Bureau (MBB), Altaro Software co-founder and CEO David Vella confirmed this problem.

In previous years, Altaro mostly employed experienced developers; however, increased demand led them to realise that there weren't enough of these candidates out there for them.

To fill those roles, they extended the call to younger people, but Vella found that they were not fully equipped and ready to go. This was when he realised that they needed to change tactics. 'Now we realise that we need to start hiring junior people and build up their skills.' Investment needs to be made by both sides.'

WHAT EVERY RELATIONSHIP NEEDS

Better communication between business and academia could improve the skills gap. However, this kind of engagement is easier to manage in some institutions and industries than others, and bringing those worlds together poses many challenges. At the same conference, MUHC CEO Joe Azzopard noted how start-ups and small businesses often do not have the resources to organise such exchanges. The wall between them and students is a difficult one to get over. ➤
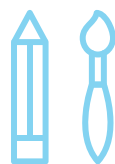
However, there is a new initiative seeking to remedy this situation.

Go&Learn is a project bridging education and industry through an online platform that effectively catalogues training seminars and company visits in a multitude of sectors, for students and educators alike. The initiative has garnered a slew of supporters. Sixty companies from all over the world are listed on the site, including some local names: Thought3D, ZAAR, and Contribute Water, to name a few. This year was Go&Learn's third edition, and with 17 European regions from across 10 countries involved, it focused on the STEM fields. In Malta, the team behind Go&Learn, also a collaboration between MUHC and the MBB, have worked together to create two new programmes.

One was dedicated to ICT for business, leisure, and commodity. It saw students visit and learn from local companies Altaro, Scope, MightyBox, Trilith, and Flat Number. Students said that the visits helped them achieve a better understanding of the sector and its nuances. 'For us students, the fact that we are exposed to the internal working of a business's environment, it's an eye-opener,' said University of Malta (UM) student Maria Cutajar. The second was related to food, involving Elty food, Benna, Fifth Flavour, Da Vinci Pasticceria, and Contribute Water. In this case, the opportunity even attracted foreign students.

Go&Learn is acting as a vital bridge between education and industry that can help to minimise the skills gap.

BRINGING STEM TO LIFE

The skills gap exists for many reasons: prejudices towards certain industries, lack of information available on others, and much more. However, education can play an important part in fixing this problem. Currently, local systems are falling short of reacting quickly and addressing new needs in industry. A lot of attention is placed on short-term goals such as exams and assignments, rather than the bigger picture and real-world tasks. This kind of attitude in science education tends to be exacerbated by the notion that its subjects are for 'nerds' and 'brainiacs'. This can be a daunting prospect for young children who don't see themselves as 'smart enough'. It can drive lots of young talent away from STEM subjects.

We need to bring fresh talent into STEM by showing how exciting, accessible, and relevant the field actually is. The solution, UM Rector Prof. Alfred Vella says, is to start right

> *The skills gap exists for many reasons: prejudices towards certain industries, lack of information available on others, and much more. However, education can play an important part in fixing this problem.*

at the beginning: 'We need to inspire teachers.' This includes attracting the best teachers by providing appropriate salaries. Through education, we need to change the impressions given to children about science and what it means. 'When I was younger, they used to tell me, why do you want to do science? Wouldn't it be better to be a doctor? Engineers were seen more as grease monkeys,' Vella said with a smile. Science should be engaging, inspiring, and fun. For this reason, he commends ESPLORA as being 'the single most important feature in Malta.' Vella believes classrooms should be an extension of the ESPLORA centre in their efforts to bring science to life. In addition to teachers inspiring future generations, parents also need to see STEM jobs as a good career for their children, and businesses need to show parents that exciting careers are available by pursuing STEM subjects. Without this, early encouragement might be fruitless.

With more young people taking up STEM subjects, the potential ripple effect will be vast. These future professionals will be able to conduct more research. The enormous benefits to be reaped from having more people excited about STEM subjects means the burden does not fall solely at the feet of teachers and parents. 'It is also the job of businesses to show the relevance and benefits of STEM,' says the CEO of the MBB, Joe Tanti. Go&Learn is providing an arena for business to interact with students and for universities to use their influence positively.

LOOKING AHEAD

From children's classrooms to the skills gap in our economy, everything is intertwined. We need a multi-pronged approach to tackle as many aspects as possible and implement lasting changes. For one thing, we need to take a good look at our education system and how it treats STEM subjects. We also need to bring business and education together, enabling them to communicate more effectively. With Go&Learn starting this much-needed shift, the door is open to more innovative initiatives. Who's in? **T**

ENTERING THE AGE OF

THE BLOCKCHAIN OF THINGS

*What happens when you put smart washing machines on a blockchain? In writing this article, **Dr Joshua Ellul** and **Prof. Gordon Pace** explain their investigation into how to combine the interconnectedness of all things promised by the Internet of Things with the trust promised by blockchain technologies.*

t's a quarter to midnight. You're finishing your dinner party. It was a terrific evening, but a headache has started to niggle. Due to your intolerance you specifically bought wine with no added sulphites. Or so you thought. Suspecting that something might be amiss, you scan the bottle with your phone. Up pops a detailed list of certificates, showing that all the production processes ensured that sulphites weren't added and that all the necessary spot checks were made. Maybe you just had one too many, you think.

Heading to bed, you walk over to your dispenser and down a couple of glasses of water. As the last water bottle gurgles empty, the dispenser automatically places an order for a few new ones and pays for them straight away to benefit from the 10% discount you get with advance payment. As your eyes start to feel heavy, you quickly set your automated home system to let the delivery man in, after verification from your security camera, to drop off the water bottles. You have a long day at work tomorrow, and there's no way you're going to be back before 19:00.

Such a future seems distant, but it could actually be implemented tomorrow. Technically, that entire scenario could have been our reality a decade ago. But there is one problem we're still having trouble with—trust.

All of these services require trust. Trust that the farmers and their field sensors are inputting correct data. That the actual grapes and all production processes are tracked from the farm to table. That the water delivery company will indeed deliver the

order. In the past, obtaining such trust in automated systems required involving a number of entities: the farming co-op, the post office, the water supply company, the bank and the government. But is such centralised trust required? No.

Taking Internet-connected computational devices that can sense and act on their environment, known as the Internet of Things (IoT), and using blockchain (a decentralised digital ledger technology, DLT) will enable a way forward to decentralise these services in a trustless manner.

THE BLOCKCHAIN OF THINGS

The Internet has become an integral part of life for many, providing instant communication, news, updates from social circles, and a multitude of services from wherever you may be.

The IoT takes the Internet to the next level, whereby not only are services made digitally available, but interaction with the real world is digitally integrated as well. This capability is made possible by embedding Internet-connected computational devices into existing products or spaces, which in turn enables more efficient processes. Vineyard employees no longer need to manually check temperature, humidity, moisture, or other environmental factors, since they can automatically be sensed by smart IoT systems which can deliver the optimal amount of water at the right times. Similarly, a smart home system could detect a water delivery employee and automatically give the employee access to drop off the delivery. ▶

Prof. Gordon Pace

Dr Joshua Ellul

In real life, trust is built over a network of people, news reports, and so on—some of which we trust more than others.

If the IoT can enable such automation, then why is blockchain technology needed? It all boils down to trust. If consumers trust the wine producer to follow processes which ensure that no sulphites were added, then there is no need for a blockchain solution here. Similarly, if consumers are fine with paying upfront for the delivery of water and trust the water delivery company to deliver, then a blockchain solution is not required.

The recent blockchain and DLT hype, however, seems to indicate that consumers and users are organically expecting more transparency and decentralisation of trust in systems which they use. It is hard to argue against a system which imposes more transparency, with in-built guarantees, rather than requiring trust in institutions.

We envisage that consumers in the future will prefer products and services with built-in trust mechanisms. By integrating blockchain with the IoT—let's call it the Blockchain of Things—more assurances of real-world physical processes can be provided. For example, ensuring that vineyard environmental sensor data were not tampered with, and that payment is only released to the water supplier upon delivery.

To realise the Blockchain of Things, we need to overcome a number of challenges. Many devices used within the IoT have around 10 kilobytes of memory and 100 kilobytes of storage space. That's around 400,000 times less memory and 100,000 times less storage space than the mobile phones which most of us carry around in our pockets. On the other hand, most blockchain systems require substantially more storage space than is available on mobiles, let alone resource-constrained IoT devices. Also, typical blockchain software requires around 500 megabytes of memory (50,000 times more than is available on such devices) and more than 600 gigabytes of program space!

Recent work at the University of Malta attempts to overcome this challenge using a *split virtual machine*. This separates parts of the code that are more 'resource hungry' and sends them to the network's more powerful machines. This leaves the less resource hungry parts to be run on the resource constrained IoT devices.

Another challenge is that of connectivity. IoT devices tend to connect to the Internet and surrounding devices in an ad hoc manner—only when requiring service. Blockchain systems need devices to be connected constantly, able to receive all new transactions pertaining to the blockchain network. Solutions to overcome this have been proposed that provide lighter-weight communication requiring less 'always-on' connectivity and faster transactions (such communication protocols include IOTA's tangle and Bitcoin's Lightning Network).

CAN THE IoT BE TRUSTED?

The final problem faced is that of trust. On a blockchain system, the network itself ensures that transactions are performed in a well-regulated fashion. For instance, when one uses a cryptocurrency such as Bitcoin, the network itself ensures that a user does not overspend money, without having to resort to trusted entities such as banks or government authorities. Similarly, a blockchain system may use smart contracts to regulate an auction. The network, according to the rules set out in the smart contract, would

ensure that no one can outbid someone with a lower bid, and that once the auction is closed, no more bids will be accepted. These guarantees, without the need to trust any individual entity, are the reason why everyone is so excited about blockchain and related DLTs. As long as the transactions remain on the blockchain, these technologies ensure well-founded trust.

But what happens when the bits leak from the blockchain to affect the real world? Consider extending the blockchain-based auction to also cover item delivery. How can the network ensure that the seller is not lying if they say they have sent the item? Should it believe the buyer if he claims that he has not received the item? What if fulfillment of the transaction involves other parties—the courier service, the delivery person, the porter at the building where the buyer lives? Whose information should be trusted?

In real life, trust is built over a network of people, news reports, and so on—some of which we trust more than others. A treatment recommendation from a doctor may be trusted more than the same recommendation from a friend. We decide what to trust based on who provides us the information and where we think they obtained that information from.

We are working on a solution to build trust over the Blockchain of Things by mimicking these networks of trust. I may trust a thermometer installed in my building, but not the device installed by the landlord on the washing machine to keep track of how many times it has been used. Using a network of trust, devices in the Blockchain of Things may take action based on information gathered, together with trust measures based on the origin of the information and the carriers in between.

In the end, we may never be sure whether the package was really lost in transit. But if the seller, who has a good reputation, claims to have posted the item, and the post-office claims to have passed it to the courier in my country, but the courier claims never to have received it, then a *'lost-in-transit'* judgement is more likely than a *'never-sent'* one.

By building trust into the Blockchain of Things, we can have our real-world transactions taking place on the blockchain. Although not every action may be 100% guaranteed, the network may compute the level of trust it has in each piece of data. In this manner, your air conditioner may decide whether or not to trust information coming in from your washing machine, freezer, and toaster to decide the temperature to set your home. Why stop there? You could allow artificially intelligent robots to make decisions on who should be allowed in or evicted from your home—or perhaps our story's protagonist should have avoided that last glass of wine. **T**

WHAT DOES BLOCKCHAIN MEAN TO YOU?

Blockchain is all about trust, or rather the ability to remove trust from a centralised authority by making use of a decentralised system with inbuilt trust. Consider how you typically send money to a friend using a bank account. You store your money in an account. The bank keeps track of your funds. For any transactions you make, the bank will alter your balance accordingly. Upon sending money to a friend, you trust that the bank will perform the transfer of funds and update your account balance correctly. The entire process requires trust. And it's not that trust in banks or other institutions need necessarily be questioned—but for services in which centralised trust is not acceptable, blockchain technologies provide a solution.

IDEA

Cool batteries are
good batteries

*As consumers, we are all-too-familiar with the daily chore of charging our smartphones or tablet. With increasing emphasis on greener technologies such as electric vehicles and renewable energy generation, battery technology becomes more important. Words by **Dr Robert Camilleri.***

As consumers, we are all-too-familiar with the daily chore of charging our smartphones or tablet. With increasing emphasis on greener technologies such as electric vehicles and renewable energy generation, battery technology becomes more important.

Classic lithium-ion (Li-ion) batteries are currently the most common, storing energy in chemical form. The problem with these is their temperature sensitivity. During repeated cycles of charging and discharging, the chemical reaction that drives the battery creates heat which affects its storage capacity and lifetime. Not only that, but these high temperatures present a real health and safety concern. Thermal runaway, where a battery creates a vicious cycle of heat generation, can lead to catastrophic failure. Remember the Galaxy Note 7 explosions?

So how can we cool batteries down?

KEEPING THINGS CHILL

While a number of studies have attempted to apply traditional cooling (such as the air cooling in the laptop I'm using to write this article) to batteries, this was found to be inefficient for high-performance battery packs. As air passes over the battery cells, it gradually warms up and its effectiveness cooling subsequent batteries deteriorates, leaving battery cells in the same pack operating at different temperatures. The battery cell with the highest temperature becomes the weakest link.

High temperatures limit dis/charging rates and energy storage capacity, causing batteries to degrade faster, dictating the life of the pack. While attempts to use liquid cooling proved to be more efficient than air cooling, they still did not solve the issue. To counter this problem, the industry has developed complex and expensive ▶

Dr Robert Camilleri
Photo by James Moffett

The need to have a fast charging mechanism, especially when it comes to consumer products, is real.

electronic battery management systems that monitor the temperature of each cell and adjust the charging rate. But again, while this protects the cells, it limits the current flow during discharging, causing long waiting times in between battery use. The need to have a fast charging mechanism, especially when it comes to consumer products, is real. Battery-powered electric vehicles, for example, are much more likely to be accepted if a fast charging mechanism is introduced. This would make them comparable with regular cars that need to be taken to traditional petrol stations for fuel.

A DIFFERENT APPROACH

Our project NEVAC (short for Novel EVAporative Cooled battery technology) solves this problem with a novel cooling strategy. With NEVAC, we want to keep the entire battery pack at a uniform temperature. We're using a liquid coolant with a low boiling point which absorbs latent heat as battery cells warm up. When the coolant reaches its boiling point, it evaporates and turns into gas. The gas travels to a cooler part of the battery pack, lets off the heat it has absorbed into the ambient environment, and condenses back to liquid, closing the loop of this self-sustained cooling cycle. As the coolant within the entire battery pack boils at a single temperature, all the battery cells within the pack are kept at one uniform temperature.

NEVAC is currently developing an experimental proof of concept of this technology with Abertax, our industrial partner. Following a proof of concept, the project will be scaled up with the prospect of developing the technology for the market. It will show how an improved battery cooling technology will lead to higher battery storage capacity, longer battery life, and better dis/charging rates. That daily chore of charging your smartphone for more than a few minutes could soon be forgotten. 🔵

Read more:
Selyukh, A., As Batteries Keep Catching Fire, U.S. Safety Agency Prepares For Change, retrieved on 30th March 2017
https://n.pr/2fBZsfJ

VALLETTA 2018
EUROPEAN CAPITAL OF CULTURE

Latitude36
A Transmedia Exhibition

MALTESE MIGRANT STORIES FROM ACROSS THE GLOBE

30 JUNE – 14 JULY
Blitz, Valletta

For more info visit valletta2018.org

ARTS COUNCIL MALTA   GAGLIARDI   BRITISH COUNCIL   BORTEX FINE TAILORING

START UP

MALTESE GAMING
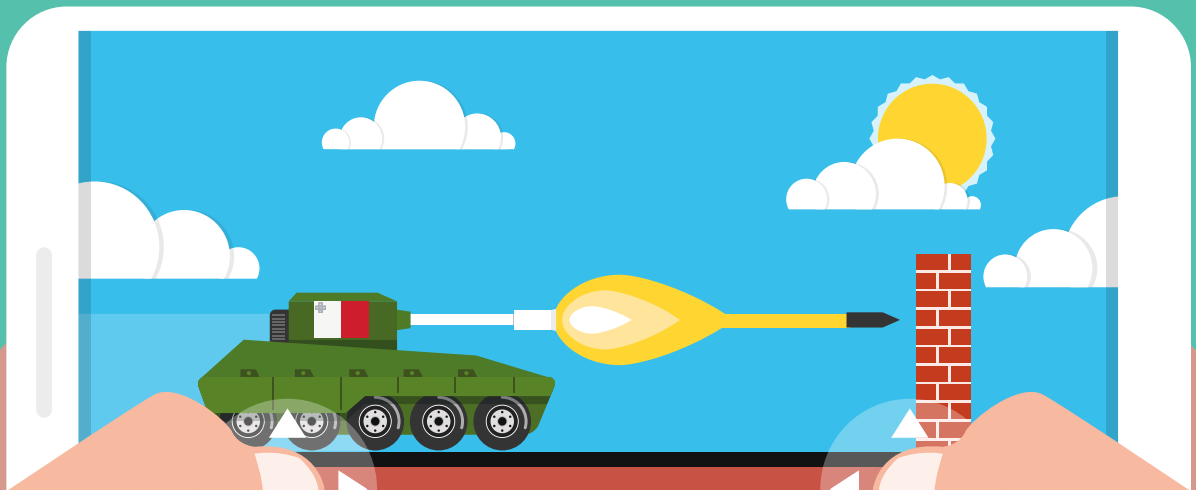
GOES
GLOBAL

*With ever more digital games companies opening their doors in Malta, standing out can be difficult. **Dawn Gillies** talks to Dorado Games co-founder **Simon Dotschuweit** to find out how a small company is carving out its niche in an industry of big players.*

n 1974, long before the Internet was around, *Mazewar* introduced the world's first computer-generated virtual world. With a serial cable to connect computers, friends could play over a network, competing with and against one another for the first time. The Internet now allows thousands of people from opposite sides of the globe to battle it out simultaneously in games set in online virtual worlds like *World of Warcraft*.

Digital gaming is an industry on the rise, and Malta has seen success after success. It's a multi-billion dollar enterprise, taking in an astounding $30.7 bn globally in 2017 alone according to Statista. In recent years there has been a surge in free-to-play online games. With so many free games competing for our attention, you might wonder where the money comes from. It may seem counterintuitive, but these free online games sometimes generate higher profits than paid counterparts. Multiplayer PC beat 'em up *Dungeon Fighter Online* reportedly made an astonishing $1.6 bn in 2017.

With more than 30 digital games companies in Malta alone, it's a competitive industry to take on. Yet Simon Dotschuweit and Nick Porsche have created Dorado Games, launched real-time grand-strategy game *Conflict of Nations*, and gained over 400,000 customers.

DORADO'S ORIGIN STORY

Whilst working for the independent creators, publishers, and distributors of digital games Stillfront Group, Dotschuweit was already mulling over some new game ideas. The game engines,

platforms, and building blocks were all at his disposal. What he needed was a collaborator. That was when Nick Porsche appeared on the scene.

Porsche and Dotschuweit brought different skills to the table: Dotschuweit came from an IT and technology background, while Porsche gained his experience as creative director for the *Battlestar Galactica* online game. Their ideas had Stillfront interested. They were in the early stages of building a game, and the endeavour was gaining support. 'It was going well, and the company wanted to go ahead with it.' Two years later, Dorado Games was acquired by the Stillfront Group.

When most of us think video games, we immediately think of games consoles. So why choose to create an online game? Or, for that matter, one that's free?

Dotschuweit says, 'They're a lot more fun to do. You have more control. Usually you self-publish. You can do stuff more iteratively. You can release and then improve. With console games, you need a large publishing partner that will take a large portion of the revenue.' With Dorado constantly striving to improve their online world for players, the ability to continually update was a big draw for them.

The world of online gaming better lends itself to strategy games. With Dotschuweit and Porsche already big fans, their goal was to create a game they wanted to play. Their business model is also better suited to online gaming than consoles. 'It's free to play, so we incentivise players to pay for extra features, which doesn't work well on console.' This is where the money comes from. Players pay ❯

Conflict of Nations concept
Image supplied by Dorado Games

Porsche and Dotschuweit brought different skills to the table: Dotschuweit came from an IT and technology background, while Porsche gained his experience as creative director for the Battlestar Galactica *online game.*

to construct buildings or train their troops more quickly, giving them an advantage over the competition.

But Stillfront's acquisition of Dorado meant it was decision time for Dotschuweit. He had to choose between keeping his comfortable job with Stillfront, or taking on a new challenge in the startup world. Living in China with his family at the time, the ramifications of that decision were huge. Porsche was already in Malta, incentivised by the Maltese government's support of new businesses. In the end, Dotschuweit felt the opportunity to join forces was too great to pass up. He made the leap.

THE RISE TO SUCCESS

Money was key. Dotschuweit tells us, 'We managed to secure quite a sizeable employment-based grant from

Malta Enterprise for our company, which was of course a very nice plus. And Malta is a really nice place!' The grant not only helped Dorado win over investors, but it reduced risk in an industry that's infamous for its kill rate, both in-game and in real life. Suffice to say that coming out on top in the gaming world is not guaranteed.

Working in a start-up was also a change for Dotschuweit. Having previously worked for US tech giant IBM, he wanted to make a mark with this new venture. 'You get to have a lot more impact. Your presence matters a lot more to a small business; it's a lot more fun. You get to wear lots of hats and get a lot of experience.' The busy and exciting nature of a small business appealed to him much more than clocking in to a regular office job.

The good times continued rolling

Simon Dotschuweit and Nick Porsche together with the Dorado Games team
Photo by Edward Duca

with more support coming in from the University of Malta's (UM) Centre for Entrepreneurship and Business Incubation (CEBI). CEBI houses the TAKEOFF programme which supports new businesses and provides facilities for them. Dr Joseph Bartolo and Prof. Russell Smith are familiar names when it comes to Maltese start-ups, and they have both been an influential part of Dorado's story. They now operate from the TAKEOFF building on UM's Msida campus.

But Dorado's journey is not all smooth sailing. 'We are a live service and we don't have separate teams for operations and expansions, so that sometimes means your plans change!' explains Dotschuweit. It's all hands on deck to fix any problems. 'It's part of the bane and the fun of operations. But it doesn't get boring!' he says. This means that a day of meetings can quickly turn into a hectic day of making sure the game is running smoothly. They don't want to disrupt players' gameplay if they can avoid it.

In the past, Dorado hired game developers to bring their ideas to life. But this *modus operandi* changed when it came to *Conflict of Nations*.

With this project, Dotschuweit and Porsche wanted more control, and they were ready to invest. They dug their heels in and hired their own team.

A game of political and military tactics with elements of espionage, *Conflict of Nations* requires real-world diplomacy skills to move up in the world. Unlike most other strategy games, it takes place right here on Earth, making use of Google Maps to make the game truly global.

Bringing their dream team to life was a challenge. 'Finding talent back then wasn't the easiest thing,' says Dotschuweit. But their perseverance has seen them build a close-knit team who have all contributed to Dorado's success.

The quest for perfection is a common theme in Dorado's story. The perfect team, the perfect platform, the perfect game. Their commitment to giving players the best possible experience is a testament to their investment in their projects. Taking the time to get the right team together has proved to be one of the many reasons for Dorado's fast climb up the games industry ladder. Another was getting their game out quickly to get fan feedback as soon as

possible. The Stillfront platform restricts them somewhat in their design, as it wasn't made specifically for Dorado, by Dorado, but it has reduced their workload massively, allowing them to get *Conflict of Nations* launch-ready in a fraction of the time. Identifying and taking advantage of opportunities has also been key to their quick rise.

MANY LESSONS LEARNT

In the crowded world of online games, Dorado games has skillfully managed to carve out its place. Real-time negotiations and political tactics in *Conflict of Nations* are the stand-out features for fans who enjoy the long timescales and mental strategy involved. With this victory under their belt, we'll soon see more from Dorado. They have plans to develop another game this year.

With years of experience in the industry, Dotschuweit has some advice for any future gaming entrepreneurs. 'Get it out fast and get feedback. You can always improve it later.' He notes the success of game jams in turning ideas into businesses and urges people to get involved. So, what are you waiting for? **T**

LAB
TO
LIFE
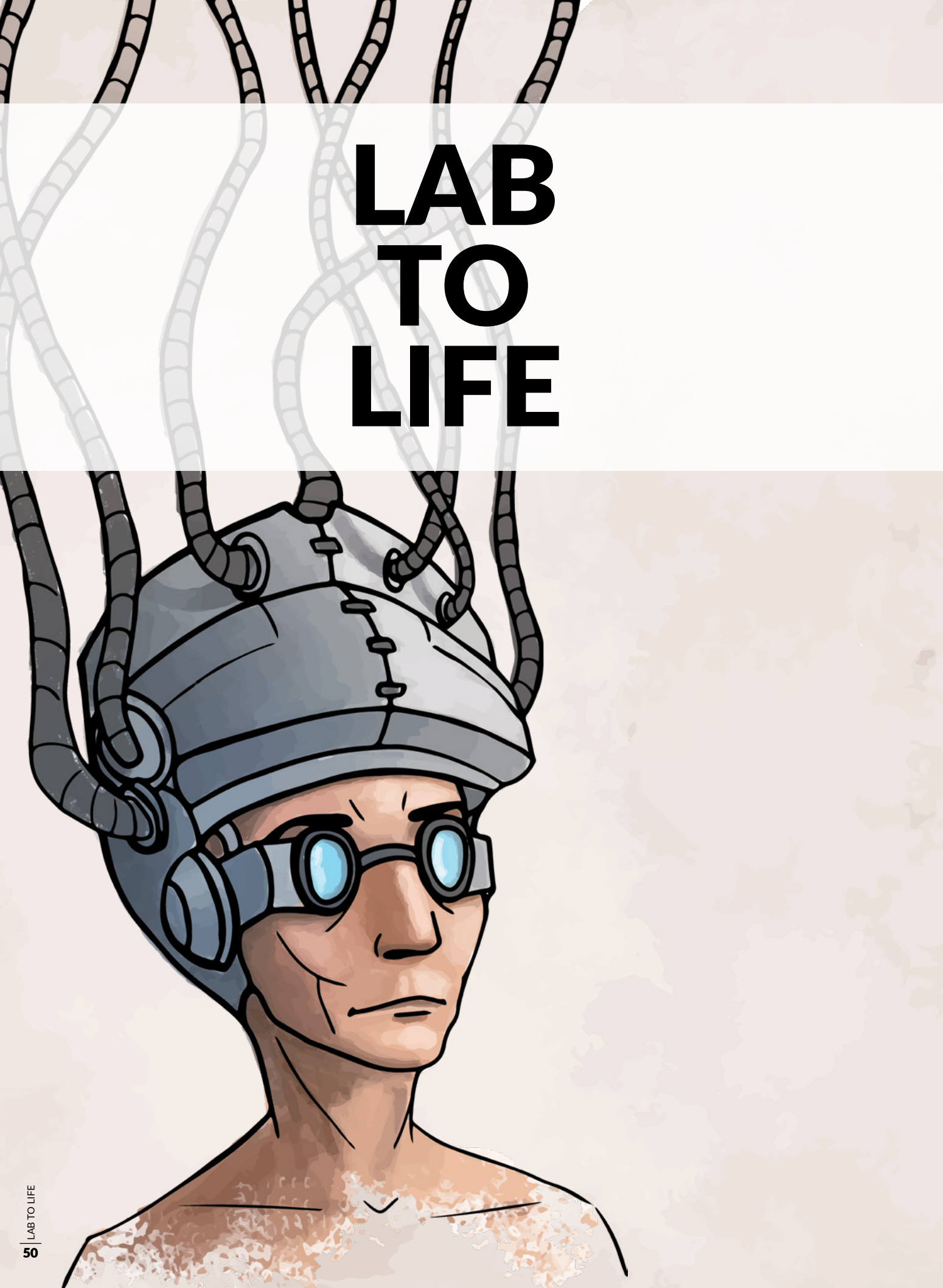
BRAIN CONTROL

The power to control objects with your mind was once a dream held by science fiction fans worldwide. But is this impossible feat now becoming possible? **Dr Tracey Camilleri** *tells* **Becky Catrin Jones** *how a team at the University of Malta (UM) is using technology to harness this ability to help people with mobility problems.*

magine having the power to control devices around you without moving a muscle. A quick glance at a control panel and you could change the channel on your TV, play your favourite song on YouTube, turn on a light, or get your coffee machine to prepare you the perfect brew. But automation can go far beyond these menial tasks.

Co-ordinator of the BrainApp project, Dr Tracey Camilleri, together with her colleagues Prof. Kenneth Camilleri, Dr Owen Falzon, and Ing. Rosanne Zerafa, have been working steadily over the last 14 years to make it possible for movement-impaired individuals to control computers or machines using their brain signals. The team combined their backgrounds in signal processing, biomedical cybernetics, and programming to produce a system that can monitor brain activity, recognise patterns in this activation, and then translate this to control an external appliance, using nothing but brain power.

HOW IT WORKS

To change the station on your TV with your mind, communication needs to be established between your brain and the TV. Brain Computer Interfaces (BCI) can make this link happen. Brain cells use small electrical pulses called action potentials to pass a message on from one cell to another. Their firing rate depends on the stimulus; if you focus on a flashing light, the neurons' action potentials will follow the same frequency. A BCI decodes the brain patterns generated in response to these stimuli

and determines what the user intended to do. Once deciphered, the system sends a message to the gadget to carry out the desired task.

'If the brain activity of a subject is 'high enough' at specific frequencies, then the system will trigger a signal,' says Tracey Camilleri. This also means that the system must be able to distinguish between intended commands and the idle state. 'A robust system can handle the time when the user is not using it. If it handles the idle state well, then the chance of the system being triggered accidentally is reduced considerably,' she continues.

For this to work, the user must wear a headset with electrodes touching their head. These electrodes record the brain signals picked up from neurons just below the scalp, a technique known as electroencephalography (EEG). In medical research, it is widely used to monitor sleep and diagnose epilepsy, among other things. 'EEGs allow us to record the brain signals at a good resolution, while being non-invasive,' Tracey Camilleri states. By using EEG rather than the eyes to control a device, the system becomes even more accessible to people with limited eye movement and is less likely to be distracted by changes in light, shadow, or nudges of the head.

This system was first implemented in Malta with WALNUT, a brain-controlled music player app. Whilst wearing the headset, users could focus their attention on one of a set of flashing squares on the app and choose a song from a list, control the volume, pause, or skip to the ➤

A user controlling the WALNUT music player application
Photo by Dr Ing. Stefania Cristina

Co-ordinator of the BrainApp project, Dr Tracey Camilleri, together with her colleagues Prof. Kenneth Camilleri, Dr Owen Falzon, and Ing. Rosanne Zerafa
Photo by James Moffett

next song. Although currently only tested in a lab setting, the team were confident the system was solid. 'Response of the brain to visual stimuli comes naturally for all subjects and the BCI can be tailored for the subject using it to ensure a good performance,' says Camilleri of the trial system.

NOBLER AIMS

While the prospect of changing your music without using your hands may be really exciting to many, the team have even more ambitious projects in mind. Similar programs and BCIs could be used to empower those with limited mobility. One focus of the team at the UM is to expand this technology and apply it to a motorised bed. This will enable people with limited mobility to control the various bed functions on their own and live a more independent life. This is the main goal of the BrainApp project.

The goal has attracted the support of many. So far, the project has received a three-year funding package from the Malta Council for Science & Technology,

and has established a partnership with Idox Health (formerly known as 6PM Group) to develop a platform for brain-controlled applications. They also have support from Karen Grech Hospital and FITA, who are giving their input on what features patients would need to have in their motorised bed. 'It is important for us to make sure that the system we develop is suitable for its intended users,' highlights Tracey Camilleri.

The choice of EEG headset is a critical issue for BCI applications. Traditional EEGs use gel to improve electrical conductivity to the electrodes, but this is messy and difficult to apply. Replacing these with dry sensors is far more practical and makes everyday use a possibility. Such headsets have also plummeted in price, now available for a mere $250, meaning that more people can buy and use them. The downside is that these cheaper headsets lack electrode coverage and sensitivity, but the field is at least heading in the right direction. Once good quality, cheap devices reach users, the market could explode.

Challenges come with the territory. Most BCIs have been tested within a lab setting: a controlled environment with minimal distractions. The real world could be problematic. BCI recognition systems depend on wearers focusing on one spot. As a result, the UM team is going a step further, investigating these nuisance signals such as audio, visual distractors, or movements, and determining how they affect brain signals. All this will help them answer the question of what signal processing techniques need to be used to make sure the system is reliable in a practical scenario.

The concept of the work and prototype seen in WALNUT is amazing, but even more exciting is the technology's potential. With continued research and development, the application really is limitless, and the impact it could have on the lives of those with restricted mobility and independence is huge. Keep your eyes focused on this group as they use the powers of their brains to help ours slide into a hands-free technological age. **T**

Young hearts run free

*For the first time in Malta, a cardiac screening programme for young people aims to identify who among them are most at risk of sudden cardiac death. Here, **Laura Bonnici** chats with **Dr Mark Abela** to learn more about the Beat It project and the impact it is having on young lives across Malta.*

There are times in life when death haunts us all. It is most tragic when it strikes down our youth. This year, Italian footballer Davide Astori and Belgian cyclist Michael Goolaerts made headlines after they died unexpectedly. Also making headlines was sudden cardiac death (SCD).

Ischaemic heart disease is the most common cause of cardiac deaths, its likelihood increasing with age. A blockage in one of the arteries supplying the heart starves it of oxygen and nutrients, leading to heart attacks, sometimes resulting in cardiac arrest, in which there is sudden and unexpected loss of electrical heart function. But SCD in young people is very different from cardiac death later in life.

Much like Astori and Goolaerts, SCD victims are generally presumed to be in good health. Early symptoms are often incorrectly attributed to other issues or life changes. The result is a horrendous loss for the sufferer and their family and friends, who also have to weather biological, psychological, and social repercussions. Seeing these events unfold, specialist trainee in Cardiology Dr Mark Abela felt the time was right to offer an SCD screening programme to young people in Malta. He called the project Beat It.

The idea behind Beat It was inspired by the UK-based NGO Cardiac Risk in the Young [CRY], Abela notes. 'CRY offers screening to young people between 14 and 35 to identify those who might be prone to heart disease. They then give follow-up advice, support, and evaluations accordingly. I realised that a similar programme would be very beneficial to young people here in Malta,' says Abela.

In Malta, the Beat It project has focused mainly on fifth form students between the ages of 14 and 16. The cardiac screenings attempt to identify those who may be susceptible to SCD, with those prone to it referred to hospital for further tests to catch the condition before it can strike.

'Because athletes are believed to be at a higher risk for SCD, we need to have routine screening across all sporting disciplines,' says Abela. 'Sport has shown the medical community that young individuals who are susceptible to genetic heart disease are still at risk of SCD. Screening helps decrease this burden. Current evidence also supports that this risk is present for non-athletic youths—so why neglect these youngsters?'

Launched officially in October 2017, the Beat It project saw nine doctors, accompanied by a team of technicians

Dr Mark Abela
Photo by James Moffett

and nurses, going into schools and running screenings. Students filled in a simple questionnaire and took an Electrocardiogram (ECG) test on the spot. 'We analysed the results in the hope of identifying heart disease in the early stages, then advised the young people if they should consider some lifestyle changes,' says Abela. This included advice ranging from easing up on tennis, to which career choices might be most appropriate for the student based on their health.

The team also advised further medical treatment and organised follow-up appointments with specialists Dr Mark Sammut, Dr Tiziana Felice, and Dr Melanie Burg in some instances. In the end, the project screened 2,700 of the 4,300 eligible fifth form students across Maltese schools, all with the support of the school administrators and teachers, who ensured that everything ran smoothly.

The significance of this project could also reach well beyond the lives of the young people themselves. 'Since the country is so small and families are often inter-connected, genetic diseases in Malta tend to be more prominent,' Abela emphasised. 'The discovery of susceptibility to hereditary cardiac disease in any young person therefore also suggests that their parents or siblings may be at risk of SCD. With appropriate testing, the ripple effect of Beat It could preempt problems in entire families, maybe even saving someone's life in the process.'

The project boosted awareness of cardiac disease and SCD for Maltese young people, their parents, and their teachers. UK data reports that eight out of 10 young deaths do not report symptoms beforehand. There is also a tendency for symptoms to be downplayed by educators who are not aware of potential problems. With this in mind, Beat It will also act as a learning platform. Since young people with cardiac abnormalities are at higher risk for exercise-related symptoms, physical education teachers are now more aware about potential red flags.

Celebrating the completion of the Beat It project, Abela expressed his gratitude for the team who made it possible. 'The incredible dedication and teamwork of everyone involved has helped Beat It to effect positive change in young people's lives, potentially saving some in the process.' **T**

Location of the Valletta Design Cluster
Image provided by the Valletta 2018 Foundation

Openness: The case of the Valletta Design Cluster

Valletta 2018 Foundation

*Valletta should be a unique experience, open to all. This is Valletta 2018's key vision for the bustling capital. A group of people focused on making this a reality is the **Valletta Design Cluster** team. Located at the Old Abattoir site in Valletta, the initiative is going to create a community space for cultural and creative practice. Words by **Caldon Mercieca**.*

According to Anna Wicher from the PDR International Centre for Design and Research, design is 'an approach to problem-solving that can be applied across the private and public sectors to drive innovation in products, services, society and even policy-making *by putting people first*.' This people-centred approach to design is not just a theoretical framework, but a concrete method that engages people in a co-creative process.

By bringing together people active in the cultural and social spheres, we want to have a concrete and meaningful impact on Malta's diverse communities. We aim to provide support for students, start-ups, and creative enterprises and give social groups the necessary tools to empower those with different interests who nonetheless share the common purpose of using creativity for the social good. We also want to provide a new networking space for everyone. From students, to cultural and creative professionals, to residents, budding businesses and civil society groups, everyone will be welcomed at the Valletta Design Cluster.

This philosophy of openness and diversity is one that has permeated every aspect of the project from the very beginning. Over the past three years, we have consulted with residents, students, schools, higher education institutions, artists, makers, and creatives to build the vision for the space. A range of public and independent organisations are also contributing to the project, providing both expertise and generous support.

Thanks to the support from the European Regional Development Fund, the physical space for the Cluster as well as the urban public spaces ➤

around it are currently undergoing serious regeneration. Once finished, the Cluster will have a range of facilities, which were decided on following consultation with potential users. It will include a makerspace, coworking spaces, studios, a food-space, several meeting rooms and conference facilities, an exhibition space, and a public roof garden. All of these facilities have benefitted from input contributed by various potential users, by residents, and

community on a daily basis, or to the ever-evolving scenario that surrounds it, but rather cultivating a readiness to learn, an aptitude to develop networks built on trust, and a capacity to address problems with a practical, positive, can-do attitude.

One valuable experience we are developing with our community stakeholders is Design4DCity. This annual initiative, which the Valletta Design Cluster team started back in 2016, sees creatives, residents,

initiatives are providing very important insights into the application of collaborative, co-creative approaches involving multiple stakeholders.

But the work of the Valletta Design Cluster is not restricted to the restoration or transformation of space. For the past three years, we have collaborated with the Malta Robotics Olympiad, teaming up with artistic curators and student organisations from the University of Malta (UM) to design and construct the pavilion

They also stressed that the Cluster needed to serve as a catalyst for networking and for strengthening entrepreneurial skills for people working in the creative sector.

by organisations that have been interacting regularly with the team working on the Valletta Design Cluster.

We believe that a community can only truly reach its potential when it opens itself up to collaborations which share a common goal. This does not mean turning a blind eye to the challenges faced by the

and local authorities joining forces to rework and improve a public space. We worked with the Valletta community in 2016, and continued with the Birżebbuġa community in 2017. In 2018 we plan to work again in Birżebbuġa as well as in Siġġiewi, and will involve children and young people in our public space projects. Such

for Valletta 2018. By the end of the project, participants had constructed a fully-recyclable 300 square meter pavilion and presented it to the public. This year we also supported SACES, the architecture students' association at the UM, through a number of design and construction workshops. Branching out, we have

Work in progress at the Valletta Design Cluster
Image provided by the Valletta 2018 Foundation

done work with a number of creatives from various backgrounds in projects involving video-capture, artifact-curation, narrative development linked to cultural identities, and flexible use of available space through appropriately constructed spatial modules.

Several workshops have also been held where project stakeholders were fully involved in training sessions, with the aim of building skills in user-centred design, applied to specific contexts. This meant interacting with students, researchers, creatives, residents, and organisations in developing what the Cluster can offer. One tool used in this process is the construction of a user persona, where the characteristics, interests and concerns of the user are gathered through interaction with potential users of a service. Students from a number of faculties have also provided their input in this process through dedicated workshops at the UM.

All of this has become possible thanks to continuous collaboration and international networks which have contributed their resources to our projects. To assist us in this, the Valletta 2018 Foundation has joined Design4Innovation, an Interreg Europe project bringing together eight European countries all working towards using design to benefit society.

While we have been on the receiving end of a lot of support, translating our philosophy of openness into practice involved an element of risk. During a series of tours that we organised on site for potential users of the Cluster, we had to be open to various views and perspectives about what the Cluster could be. Participants highlighted issues related to accessibility and affordability as key concerns. They also stressed that the Cluster needed to serve as a catalyst for networking and for strengthening entrepreneurial skills for people working in the creative sector. In some cases, we had to revisit some of our plans and open new discussions with the architects to made adjustments. On other occasions, we called people in again to discuss their ideas further and see how we could integrate their suggestions into our vision.

Although we speak of cultural and creative industries, we should realise that the average number of people working in any single company is two. Indeed, 40% of designers in Malta are actually freelancers. The challenge for the Valletta Design Cluster here is to ensure flexibility and adaptability both in the physical infrastructure as well as the management of the Cluster. In this way, we can make the facility relevant for our users' current needs, as well as cater to future ones.

The next stage in understanding our community of potential users better is to work together on the creation of a Design Action Plan. The Design Action Plan will highlight concrete actions to be undertaken by the Cluster during the first three years of its operation. It will serve as the main reference tool to structure the Valletta Design Cluster's interaction with its community of users, practitioners, enterprises, and beneficiaries. Based on this open process, the Valletta Design Cluster aims at establishing itself as a new community-driven platform for cultural and creative practice in Malta. 🅣

'DON'T SHY AWAY FROM INSPIRING OTHERS'

While it may have taken a few hard knocks of late, the European Union (EU) is still a cornerstone in the lives of the continent's citizens. And with the rising tide of populism the world over, fuelled by values which are the polar opposite of the EU's unity-in-diversity model and putting into question the sustainability of the EU, it becomes easy to forget about its advantages.

It also becomes easy to forget just how impassioned and hard-fought the road towards accession was for some countries—Malta included. For millennials, the EU referendum in 2003 was, in many ways, our first truly 'political' moment. Beyond the rote rhythms of party politics, the event gave us the feeling that something larger than us was happening. History was being shaped right in front of our eyes.

But as this moment ossifies into nostalgia for some, and others edge towards a rising euroscepticism, one person that holds steadfast to the EU and all that it stands for is Dr Joanna Drake.

Acquiring her Doctorate in Laws from the University of Malta in 1988 was the spark that paved the way for an eclectic career for Drake. She prefers to characterise it as 'varied with lots of spice', and it is one in which the EU has played a central part from early on.

'Yes, throughout everything, there has been a major common thread—the European Union. I pride myself in having such a powerful and inspiring reference point in my career. It has opened so many doors, and it keeps on being enticing in the challenges it presents,' Drake says.

It has been a journey with many rungs and steps along the way... all of which Drake diligently and patiently takes the time to enumerate during our conversation.

VOTE YES

In 1990, Drake's world transitioned from the academic to the professional. She joined Malta's first-ever professional team at the Malta Foreign Office, which was charged with preparing Malta's EU membership application —a seed that would of course bear its most significant fruit just over a decade later.

Another significant step forward came five years later, when Drake took up teaching at her alma mater for a period that would last from 1994 to 2002. The position was no small feat. It meant

For millennials, the EU referendum in 2003 was, in many ways, our first truly 'political' moment.

that, at the relatively tender age of 30, Drake was lecturing in the Department of European and Comparative Law (Faculty of Laws) at both undergraduate and postgraduate level.

'I was humbled to be teaching EU law to many of Malta's preeminent lawyers, judges, magistrates, journalists, researchers, and politicians, including those who went on to become prime ministers and Presidents of the Republic,' Drake reminisces, adding how her experience also dovetailed into the private sector. This part of her career overlapped with the 'EU Moment', as Drake served as Head of Legal and Regulatory Department for Vodafone Malta Limited from 2000 to 2005, during a stretch of

time she describes as being a 'very challenging period of transition for Malta's telecommunications sector'.

Juggling so many high-profile, high-responsibility jobs was a big challenge for Drake, especially considering the social expectations on women. But she is quick to point out that all of that has its own silver lining. 'Being a woman from a non-privileged background and facing tough competition, and even betrayals, including by those whom you had loved and respected, all go towards galvanising your resilience and bringing out the best in you while allowing you to grow.'

Despite such hardships, Drake has not been stopped from living a fulfilling life. 'Of course, during this period, my private life did not stand

still: I was also bringing up my two adorable kids, with whom I have been blessed and who continue to enrich my life every day...'

Drake's value of human rights and justice have given her career a crucial focus point, which would reach its critical point come 2003. Serving as the Chair of the YES referendum campaign, whose Maltese-language rallying call 'Moviment IVA Malta fl-Ewropa' is bound to stir memories in all those who experienced it, Drake remains unequivocal about the importance of this position for her.

'My direct and visible political involvement in persuading the Maltese voters to vote YES in the EU referendum of March 2003 is something I remain immensely proud

of. Standing up to be counted is always something that resonates deeply with me, and I would say that my involvement with the referendum was an ideal example of all that.'

Malta's successful entry into the EU led to another key stepping stone in Drake's career. In 2005 she took on the role of the Head of Representation of the European Commission office in Malta. She was then promoted to Director of Entrepreneurship and Small and Medium Enterprises (SMEs) as well as deputy SME Envoy. She now serves as Deputy Director General in the Directorate-General (DG) Environment in Brussels.

As deputy SME Envoy, she was directly involved in shaping EU policy and helping SMEs face contemporary challenges, like the rise of industries such as Airbnb and UBER. This work yielded positive results in her previous posting as Director of SMEs and Entrepreneurship at DG GROW, where she represented the Commission in high-level dialogues and negotiations in China, US, Tunisia, Abu Dhabi and most EU member states.

It was also a post that allowed her to deliver presentations at numerous major events, cementing a career built on both practicality and advocacy.

Dr Joanna Drake

THE UNIVERSITY OF LIFE

With such an impressive CV in hand, I wanted to find out what drove Drake to such success. And it turns out that the University of Malta helped lay the groundwork of some good habits for her.

'I've learnt plenty of lessons along the way, and I keep discovering new ones all the time! But I would certainly highlight the following: passion helps you achieve your goals. Keep investing in knowledge and real friendships. Networking is key. Keep it simple. Reach out, always. Stay humble. Don't shy away from inspiring others. Take every opportunity to grow as a person, and in your conscience,' Drake emphasised, adding that: 'These are some of the stimulants that make my getting up in the morning and going off to work so much more worth it.'

And what about the new generation of graduates or to-be graduates? Students which, we should point out, have reaped the benefits of EU accession and all that that implies? Drake's advice to any who dream of following a similarly heady and rewarding path is quite simple, though it requires both commitment and passion. 'Keep an open mind as to how and where you could deploy your newly learned skills,' Drake says—a reminder that self-knowledge and self-awareness truly go a long way.

In fact, Drake is keen to stress that a career—as opposed to a one-off and possibly dead-end job—is something that requires the full implementation of your personality and the gravitational pull of your most deeply held passions.

'So in this way, building your career is about adding your personal value to what you have learned and churned out at university. If those ingredients are in place, a true professional may very well be born. Think about this when preparing for your next interview.'

Her parting-shot of advice is, however, far more to the point, but it resonates all the same: 'Remember to just enjoy the journey! It's loads of fun.' 🆃

Building your career is about adding your personal value to what you have learned and churned out at university. If those ingredients are in place, a true professional may very well be born.
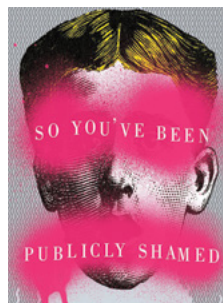
TO-DO LIST

MUSIC 🎵
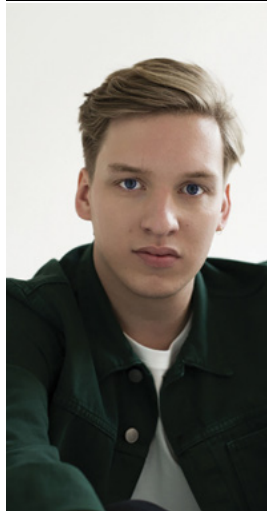
George Ezra's dulcet tones are all around the office. *Paradise* is a popular one. Try it.

BOOK 📖

British journalist Jon Ronson's book *So You've Been Publicly Shamed* explores the re-emergence of public shaming as an Internet phenomenon, especially on Twitter. Maybe we can all be nicer online? Such dreamers, we are...

YOUTUBE CHANNEL ▶️

Created by Mitchell Moffit (@mitchellmoffit) and Gregory Brown (@whalewatchmeplz), *ASAPScience* is a great place to get your weekend dose of science.

PODCAST 🎤

We've been consuming a lot of crime stuff. The *Sword & Scale* Podcast is ace. Be prepared to never sleep again.

MOVIE 🎞️

It swept through the house this Awards season, if that means anything to you. If not, just know that *The Shape of Water* will restore your faith in love that comes in all shapes and sizes.
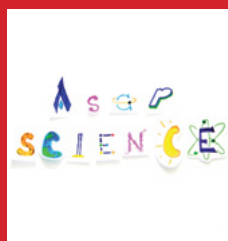
TV 🖥️

Netflix's *Dirty Money* takes a long, hard look at scandal and corruption in business, exposing the seedy, slimy underbelly of some of the worst cases of corporate greed out there.

INSTAGRAM 📷

If you're looking for cute illustrations with a whole lot of soul—*bymariandrew* is the one for you.

With you wherever

um.edu.mt/think