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THINK

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editorial

Voices

In simple terms, a voice is the sound produced by the lungs and vocal organs, but what of those who cannot speak? What of those who can but are too shy or removed from society to be heard?

In truth, having a voice means more than just the production of sound. It is to have meaning and to express individual thoughts and experiences. This broadens what we understand as 'voice' to include other forms of language and communication. Thus, in becoming so synonymous with expression, voice comes to suggest a sense of belonging to a place or idea, a partaking in decisions, and inevitably, a divulging of ourselves to others. After all, what we do with our voice says a lot about us.

Beyond self-expression, voice is a social tool. Think of it this way, lions whose roar cannot be heard will not impart authority within their pride. And while human society does not function in the same way as a pride of lions does, society is still very much run by those with strong voices.

Yet, it comes as no surprise that the quiet ones have a lot to say, too.

In Issue 48, **THINK** turned to individuals at the University of Malta working on uplifting hidden voices. Surprisingly, children are at the forefront of these stifled voices, not at all for their actual quietness, but more for our predisposition to see them as young and inexperienced.

A voice can only have as much power as the listener will allow, so those at the periphery of our society will always suffer the most in this regard. By pulling these experiences into our line of sight, **THINK** aims to return our attention where it is needed.

Prof. Ing. Simon G. Fabri
Editor-in-Chief
simon.fabri@um.edu.mt

Rebekah Zammit
Editor
rebekah.zammit@um.edu.mt

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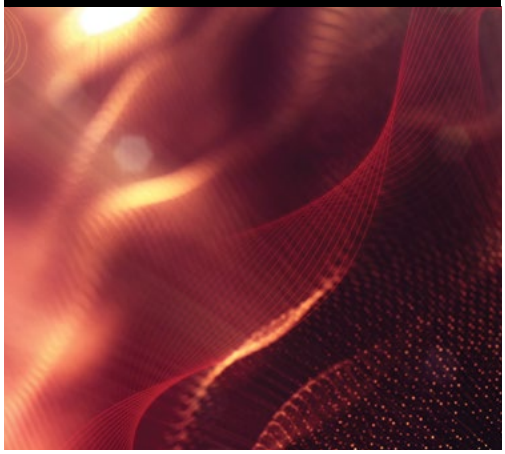

Beyond sound, voice is resonance and identity – a powerful current flowing through research, ideas, and stories, perpetually shaping our world.

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CONTRIBUTORS

OPINION
Nadia Abdilla
Dr Giuliana Fenech
Corrine Zahra

DESIGN
Elena Said
Ryan Scicluna

FOCUS
Prof. John Ardila
Prof. Godfrey Baldacchino
Prof. Claudine Borg
Coryse Borg
Sofia Dias
Prof. Alexiei Dingli
Jeremy Farrugia
Julian Galea
Prof. Michael Galea
Prof. Adrian-Mario Gellel
Christian Keszthelyi
Dr Alec Lapira
Prof. David Magri
David Mizzi
Amanda Maria Morales
Dr Alexiou Panagiotis
Prof. Eleanor Scerri
Sarah Schembri
Corrine Zahra

FEATURES
Courtney Ekezie
Noah Galea
Prof. Ivan Callus
Raquel Camilleri
Prof. JoAnn Cassar
Prof. James Corby
Prof. Melissa Formosa
Dr Niko Leisch
Esther Okafor
Dr Foteini Pavli
Jennifer Porter
Erika Puglisevich

WITHOUT BORDERS
Prof. Neville Calleja
Andrea Cuschieri

BEYOND ACADEMIA
Antónia Ribeiro
Xjenza Malta

START UP
Roderick Cassar
James Moffett

IDEA
Timothy Alden
Dr Valentina Cassar
Jonathan Firbank
Prof. Claude Mangion

STUDENT
Prof. Alan Deidun
Dr Adam Gauci
Alessio Marrone

TO-DO LIST
THINK Team

ILLUSTRATIONS
Gabriel Izzo
Gizelle DeGiorgio

PHOTOGRAPHY
James Moffett
Kristov Scicluna

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EDITORIAL
Prof. Ing. Simon G. Fabri EDITOR-IN-CHIEF
Rebekah Zammit EDITOR

DESIGN
Gabriel Izzo DESIGNER
Gizelle DeGiorgio DESIGNER

COPYEDITING
Rebekah Zammit

PROOFREADING
Noah Galea
Andre Pawney

PRINTING
Gutenberg Press Ltd., Malta

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University of Malta, Msida, Malta
Tel: (356) 2340 2340 | um.edu.mt

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Shaping Young Minds: Examining Children's Literature Through Wonder and Agency

Author:
Corrine Zahra

What if a rainy day isn't a ruined plan but the beginning of a new adventure? While adults often trade wonder for life's responsibilities, children are full of curiosity, seeing the extraordinary in the ordinary. Author ***Nadia Abdilla*** *and Senior Lecturer* ***Dr Giuliana Fenech*** *are exploring the power of wonder through children's literature.*

Children have the capacity to see the world through the lens of wonder and curiosity – an ability which adults have seemingly long forgotten. A downside to growing up is that the wonder and curiosity children are naturally attuned to seems to then wither in the eyes of the grown adult. Yet, in children's literature, this wonder persists, aiming not only to educate children as they grow, but also to enrich their everyday imagination.

CRITICAL THINKING IN CHILDREN'S LITERATURE

Maltese children's author Nadia Abdilla has always been fascinated by how children navigate the world through the lens of wonder. Working as an Equity Coordinator at the University of Malta, Abdilla's job is quite different from her passion for writing children's literature. In the past, she used to teach young children at summer school, and now, she is the mother of a two-and-a-half-year-old. Abdilla's passion for children's literature aligns with her motherhood. As she watches her daughter grow and observes her budding curiosity, she finds inspiration for her writing.

Nadia Abdilla
Photo by Kristov Scicluna

Nina n-Nokkla u l-Avventura Riħ Riħun
Photo courtesy of Nadia Abdilla

'I write because I find that the extraordinary hides in the ordinary – the same perspective as children,' Abdilla says. 'There is a distinct kind of rawness in how children observe and absorb everyday life.'

Published by Klabb Kotba Maltin, Abdilla has a series of children's books featuring *Nina n-Nokkla*. Her books engage curiosity by subtly inviting children to think critically about everyday experiences with some adventurous twists, of course.

For example, in *Nina n-Nokkla u l-Avventura Riħ Riħun*, Nina is expecting her cousin to come visit for a picnic and to play in the field. Nonetheless, the day turned out to be quite the opposite of what she had planned – rainy, dull and windy. Her cousin arrives, and they sit down and stare until Nina

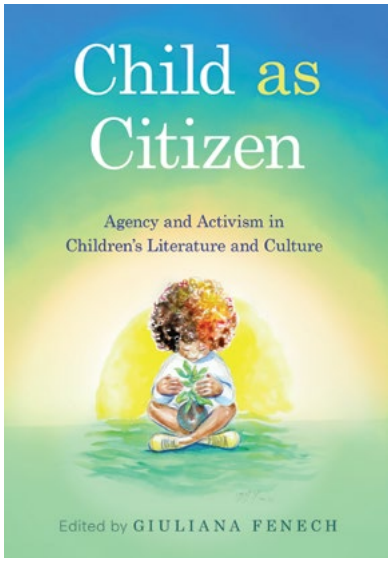
The authors connecting with young readers – through stories, creativity, and shared experiences.

Dr Giuliana Fenech

remembers that she has a box full of things in her room. Together, they build a kite and end up still having a great time outside. In this story and others in the Nina n-Nokkla series, Abdilla highlights the importance of stopping to reflect, thus guiding children on how to calm down and be present.

CHILDREN'S AGENCY THROUGH LITERATURE

Dr Giuliana Fenech, a senior lecturer in UM's Department of English, has been researching children's literature for almost two decades. Her journey started when she decided to explore how imagination inspires real-life change.



Child as Citizen
Photo courtesy of Dr Giuliana Fenech

Her recent research for the three-year EU-funded project, *Seen and Heard: Young Adult Voices and Freedom of Expression* (featured in **THINK** Issue 45), is an example of how literature can invite dialogue on whose voices are most often heard in society and whose voices get left out. In reading children's literature, children are allowed to have agency over themselves as they relax, reflect, and imagine worlds. 'Storyworlds for children are becoming more complex, still harnessing the imagination, but also engaging children in social, cultural, and political spheres more actively,' Fenech states. As such, not only are children's minds developing through imagination, but they are also in the process of becoming adults.

In her latest publication, *Child as Citizen*, Fenech discusses the importance of children's voices being expressed and heard. Children see themselves in the books they read, which allows them some agency and builds their self-confidence. Abdilla, too, agrees with these thoughts. 'The message is that you exist – you matter,' she says. Fenech suggests that instilling these ideas in children allows them to become well-rounded citizens.

IMAGINATION IS A POWERFUL TOOL

Children's literature is a major part of children's upbringing. It is thus essential that parents incorporate reading into the everyday lives of their children, nurturing their imagination.

A child's voice should not only be valued as a marker for their own agency, but also as a reminder to ourselves as adults that we too should be more like children. To be a child is to see the world through this lens of wonder – every day. And we need that reminder. That the world is full of the extraordinary.

ART Connect: UM Library as a Living Canvas

Author: **Elena Said**

The ART Connect project offers UM students, academics, and administrative staff a platform to exhibit their creative work at the UM Library. **THINK** *speaks with Assistant Librarian* ***Ryan Scicluna*** *to learn more about the inspiration behind the initiative, how it came to life, and the impact it's having on the university community.*

Have you ever wanted to showcase your art but didn't know where to start? ART Connect at the UM Library offers the perfect platform for students and staff to share their creativity with the wider campus community. From photography and painting to sculpture and digital media, this initiative turns the Library into a vibrant space where artistic expression and academic life come together.

'The initiative took off from a comment made by one of our colleagues, who pointed out that the walls were empty, just like a blank canvas. So we thought, why not turn the Library into an ever-changing exhibition space?' explains Assistant Librarian Ryan Scicluna.

Ryan Scicluna
Photo by Kristov Scicluna

Scicluna has worked at the UM Library for 14 years, primarily in marketing, training, library instruction, and outreach, with a focus on bringing communities together in a library setting. From that initial spark, the team began collaborating with a student from the History of Art Student Association, aiming to connect people through creativity and drawing inspiration from the beloved TV show *Art Attack*, which also inspired the name ART Connect.

A PLATFORM FOR ALL

Every year, ART Connect holds two open calls, one around February/March and another in October/November, inviting students to submit artworks they've created either as part of their studies or as personal projects.

The initiative embraces all forms of creative expression. 'Once, we had a submission featuring a traditional *Għonnella* made from recycled materials, resulting in the Library purchasing a mannequin, which is now also used by fashion students,' claims Scicluna.

One current display includes a tree sculpture crafted from old books and electronic parts, symbolising the blend of knowledge and creativity. Staff and Erasmus+ students are also encouraged to participate.

'Many international students have contributed artworks that reflect their home countries, helping them feel more connected and offering a sense of ownership over the space,' explains Scicluna.

ART Connect goes beyond simply displaying artwork. Each submission is celebrated with an artist spotlight on social media, where participants share their story and creative journey. Submissions typically begin with a simple sketch or draft and are displayed alongside a QR code linking to the artist's profile, offering exposure at no cost.

Whenever feasible, all submitted artworks are displayed to ensure





A selection of artworks featured during ART Connect. The artworks were carried out by the following artists (in order of appearance): Adriana Mintoff, Michelle Gialanze, Anneleize Emily Strauss, Martina Psaila and Emily Therese Salnitro. ***Photos courtesy of Ryan Scicluna***

everyone's creativity is showcased. Pieces are usually exhibited for up to a year, giving the Library a continuously evolving atmosphere. Once taken down, artworks are either collected by the artists or safely stored to preserve their place in the ART Connect journey.

BUILDING COMMUNITY THROUGH ART

The Library is often called the heart of the University, and through initiatives like ART Connect, that phrase is being brought to life. 'As libraries around the world evolve into "third places" – welcoming spaces beyond home and classroom where people can relax, connect, and engage – showcasing student artwork is a natural extension of this shift,' notes Scicluna.

ART Connect has become a powerful tool for encouraging self-expression beyond academic or professional roles, offering students and staff a safe space to step outside their comfort zones. 'Because it comes from within the institution, it allows people to come out of their shell,' Scicluna explains. Many participants, particularly staff members who may be shy about showcasing their creativity, find encouragement through the positive feedback they receive, often leading them to submit more work.

One student, for example, submitted a photograph that resonated so deeply with a peer it was purchased on the spot, an empowering moment that offered a glimpse into the potential for creative work to be both personally and professionally rewarding.

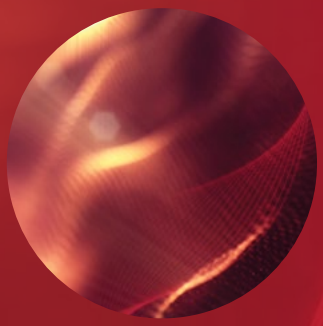
While the team initially expected only art students to participate, submissions have come from across the University, from ICT, engineering, and psychology to education, economics, and even dance studies, with one participant using AI to generate choreography.

With up to 18 pieces exhibited at a time, the Library space has become increasingly dynamic, filled with artworks of all shapes and sizes that reflect the creative pulse of the UM community.

The team hopes to extend ART Connect to other libraries, including public ones, encouraging a shift toward libraries as creative community hubs. The long-term goal for ART Connect is to keep it growing as a yearly initiative while boosting its reach and visibility.

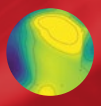
Beyond ART Connect, the Library also supports this broader vision of a welcoming space through events such as bibliotherapy sessions, canine storytelling with the SPCA, and exhibitions hosted in collaboration with embassies, each one reinforcing the Library's commitment to fostering connection, wellbeing, and expression on campus.

Scan the QR code to find out more and submit your work. The Art Connect page is regularly updated with new submission dates.



Voices

Living in a communications revolution, voicing ideas is not as simple as speaking. Technology provides extra channels and barriers. We are simultaneously able to reach more people and barred from imparting as much meaning. This effect, coupled with the disconnection felt by marginal groups, makes voicing one's beliefs and experiences a strenuous chore. In Issue 48, **THINK** strives to bridge the gap between speaker and listener, starting by understanding how the voice works and how children can contribute to research. From there, we'll turn to the forgotten women in history and explore how thought can be translated into speech. Next, we'll learn about literary translation and creative interpretation before wrapping up with an introspective look at UM through the eyes of our academics.



The Science of Voice: How Humans Produce Sound and How to Protect It

Author: **Christian Keszthelyi**

Humans speak, sing, whisper, laugh, groan, and yell, often without giving a second thought to how the voice works. Yet behind every word lies a finely-tuned biological process, one that transforms breath into language with remarkable precision and complexity.

Voice – arguably the most human of traits – goes beyond just noise from the mouth. It is a highly orchestrated, intensely physical, and surprisingly vulnerable process that combines breath, vibration, resonance, and precision control. The human voice is one of the most intricate and powerful instruments evolution has shaped.

To understand how the human voice is produced – and what happens when things go wrong – **THINK** spoke with Dr Alec Lapira, who is an ear, nose, and throat (ENT) specialist with over 30 years of experience and a career focused on voice and hearing disorders. In recent years, Lapira co-authored the EU Guidelines on Tinnitus treatment and diagnosis (a condition where a ringing noise is experienced in the ears). He currently works at St James Hospital while also lecturing at UM's Department of Human Communication Sciences and Disorders.

'The vocal folds are the structure which produces sound as we know it. As such, keeping them healthy is essential, especially for people who depend on their voice professionally,' Lapira says.

Producing voice is a remarkably coordinated process that relies on three interdependent systems working in harmony. It begins in the lungs, which act as the body's internal bellows. When people exhale, air is pushed up through the trachea, creating the necessary pressure to power the voice. 'The lungs produce the power source,' Lapira says. Without that airflow, the vocal folds – essential components of the voice – remain silent.

Once the air reaches the larynx, or voice box, it meets the vocal folds, sometimes referred to as vocal cords. These folds come together during exhalation and begin to vibrate, sometimes hundreds of times per second.

'This vertical vibration of the mucous membrane is what produces sound,' Lapira says. He likens it to blowing air between pursed lips to create a buzzing sound, except what occurs in the larynx is far more refined and controlled. Changes in the shape and tension of the vocal folds determine the pitch and volume of the sound.

'Shorter cords mean higher pitch. Longer cords mean deeper, bassier voices. That's why men typically have deeper voices. Their cords are longer and thicker,' he adds. In fact, compared to women, men's vocal cords are around 6mm longer (Roers et al., 2009).

But raw vibration is not yet speech. The final transformation occurs as sound travels through the vocal tract, which includes the throat, oral and nasal cavities. Here, it is shaped by the articulators – the tongue, lips, and teeth – into intelligible speech. These structures modify the sound into the vast range of expressions, tones, and languages that constitute human communication. In essence, the voice is not produced in a single location, but rather through a complex orchestration of breath, vibration, resonance, and articulation.

AGEING VOICES

Just like skin and muscle, the voice ages too. In fact, according to Lapira, this ageing process can be surprisingly dramatic. The first significant shift happens during puberty.

Dr Alec Lapira

'In males, the vocal cords lengthen and thicken significantly. That's why a boy's voice suddenly drops in pitch. It's one of the most noticeable markers of adolescence,' Lapira says. On the other hand, female voices shift more subtly, often expanding slightly in range but staying relatively stable.

The second shift comes as humans become seasoned parts of society. 'After the age of 60, we see a gradual loss of flexibility in the larynx. The joints stiffen. Cartilage calcifies. The cords lose muscle tone and elasticity. They can bow out,' he says. As a result, the voice becomes weaker, breathier, and less resonant. In men, pitch tends to rise. In women, it often lowers. The phenomenon, known clinically as presbyphonia, is indicative of a correlation between blood levels of testosterone and the frequency produced by males and females (Bruzzi et al., 2017).

'With age, the voice becomes less powerful – and sometimes less expressive. But with good care, you can preserve it remarkably well,' he adds.

VOCAL ATHLETES

Singers are often admired for their soaring high notes and emotive delivery, but behind that vocal artistry lies a remarkable level of physical discipline and control. 'Singing is a full-body technique. You need to control breath, pitch, tone, articulation, and stamina – all simultaneously,' Lapira says.

Vocal performance rests on five essential pillars. The first is breath control, which involves using the diaphragm to regulate airflow. This technique enables singers to sustain notes, project with power, and maintain vocal stability. Closely linked to this is pitch control – the ability to train both the ear and the vocal muscles to produce accurate, in-tune frequencies. Then comes vibrato, a deliberate oscillation in pitch that adds warmth, richness, and expressive nuance to a note. Diction is equally essential. The clear, precise articulation of words is vital not only for intelligibility but also for conveying emotion. Finally, singers work on expanding their vocal range, strengthening their cords to reach both higher and lower notes beyond the natural limits of everyday speech. Together, these elements form the foundation of skilled and healthy vocal expression.

Like any athlete, vocal performers must maintain their biological instrument with care and discipline. This is where vocal hygiene becomes essential.

VOICE-SAVING TOOLKIT

For professional singers, lecturers, and teachers alike, the voice is a vital tool of the trade. Over time, however, even mild misuse or consistent neglect can lead to lasting strain and damage.

Lapira offers a wealth of practical advice for maintaining vocal health, beginning with the most fundamental principle: Stay hydrated. Lapira notes that 'especially in places like Malta, where summer heat and air conditioning dry the air, hydration is crucial. Dry vocal folds are more prone to strain, irritation, and injury.'

Equally important is avoiding habits that can damage the voice. Throat clearing, for instance, may seem harmless but can be surprisingly abrasive. 'It's like rubbing your vocal cords with sandpaper,' he warns. Adequate sleep and a balanced diet also play a critical role, as overall well-being directly affects vocal function.

Environmental and lifestyle factors matter too. Smoking, alcohol, caffeine, and exposure to airborne chemicals or cleaning agents can all irritate the vocal tract and compromise vocal quality. In dry conditions, the use of a humidifier can help maintain moisture and protect delicate tissue.

Ultimately, listening to the body's signals is of utmost importance. 'If you feel soreness, strain, or persistent hoarseness – that's your voice telling you to stop,' Lapira says. In such moments, rest is not optional but necessary for long-term vocal resilience.

From Tuvan biphonic throat singing to Alpine yodels, humans have developed extraordinary vocal traditions around the world. But in the age of social media, these traditions come with new risks.

‘It’s become trendy to mimic cultural vocal styles without training. Yet what’s safe for someone trained from childhood can be harmful if imitated poorly,’ Lapira says.

The result? Nodules, haemorrhages, chronic irritation. ‘Singing done by someone trained in that specific style is fine. But mimicking it can lead to serious vocal problems,’ he adds.

BREAKING VOICE

Vocal problems are more common than one may realise, and they do not always begin with a sore throat. Lapira categorises these issues into two broad types: acute and chronic. Acute conditions often arise suddenly, typically following a viral infection such as laryngitis, which causes swelling of the vocal folds and results in temporary hoarseness.

Chronic problems, on the other hand, tend to develop gradually and can be far more persistent. These may stem from prolonged vocal overuse, poor speaking technique, acid reflux, or vocal trauma. ‘I’ve seen lecturers who speak all day, then sing at night, and wake up hoarse. Or people who eat late and develop reflux – acid creeps up and irritates the vocal cords,’ Lapira says.

More severe cases can involve vocal cord paralysis, which may result from a viral infection, stroke, or complications following surgery. The most serious threat is laryngeal cancer, which occurs most frequently in individuals with a history of heavy smoking or alcohol use.

The message is clear: Persistent hoarseness is not something to overlook. ‘Any hoarseness lasting more than two to three weeks needs to be investigated. Don’t ignore it,’ Lapira urges.

DIAGNOSING THE PROBLEM

When someone comes along with a voice concern, diagnosis begins with a careful examination. Lapira typically starts with a simple mirror assessment, offering a basic view of the vocal cords. However, for a more thorough evaluation, he turns to endoscopy. This is the clinical gold standard. This procedure involves using either a rigid scope through the mouth or a flexible one through the nose to observe the vocal folds in action.

To enhance these observations, specialists often pair endoscopy with stroboscopy, a technique that simulates slow motion by flashing light in sync with vocal fold vibrations.

> *The voice is a marvel of biology – delicate, powerful, and utterly irreplaceable.*

‘This is especially valuable for singers and voice professionals, where even subtle irregularities in vibration can derail performance and lead to long-term damage,’ Lapira says.

Ultimately, the voice is more than just a means of communication. It is a profoundly personal instrument. It conveys identity before a single word is understood. It reflects age, emotional state, cultural background, and even vulnerability. ‘Your voice reflects who you are. Take care of it the same way you’d care for your hearing or eyesight. Once it’s damaged, it’s hard to get it back,’ he says.

In an era where spoken communication is more central than ever – shaped by podcasts, virtual meetings, streaming platforms, and voice-controlled technology – the importance of vocal health can no longer be underestimated. Protecting the voice is not just a professional concern for singers and teachers. It is a fundamental part of maintaining one’s well-being, confidence, and presence in the world.

The voice is a marvel of biology – delicate, powerful, and utterly irreplaceable. It is not merely a tool for communication, but a vital thread of identity and connection. It deserves not only to be heard, but to be respected, nurtured, and fiercely protected.

Further Reading

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Hearing Every Voice:

What it Takes to Conduct Large-Scale Research with Children

Author: **Sofia Dias**

What does it mean to truly listen to children? Not just in theory, but in practice – in a way that values their words as data worthy of attention and not just as cute anecdotes. This is the challenge that a team of researchers from the University of Malta set out to meet. Funded by the UM Research Excellence Fund, the project is designed to position children as active and authentic agents in the data collection process.

At the heart of the project, titled 'A Pedagogy to Facilitate Children's Meaning Making', was the belief that children are capable of more than we often give them credit for. As Prof. Adrian Gellel (Department of Early Childhood and Primary Education) puts it, 'All too often, children's abilities are underestimated. Time and time again, I have witnessed adults being surprised at children's questions, intuitions and reasoning abilities when engaging with art and culture.'

To help children make sense of the world around them, Gellel has developed the Symbol Literacy approach. This is a teaching method that encourages children to draw on the wisdom embedded in cultural artefacts such as stories, rituals, art, and their meanings as produced and experienced by different generations. This approach is a response to the growing need to help children navigate life's challenges by grounding their thinking in cultural and intergenerational resources. Over the last decade, this approach has reached more than 13,000 children through previous projects conducted by Gellel and colleagues, but the latest project was more ambitious, aiming to gather data systematically on how children make sense of their world in their own voice.

To achieve this, the research design had to work *with* children, not just extract information *from* them. This involved creating open-ended and inclusive tasks, removing spelling constraints, providing support for learners with literacy difficulties and ensuring that all students could participate, regardless of their background or ability. 'It was imperative to respect children's ability and will to express themselves as they wish and can,' says Gellel, 'and for this respect to emerge in the research project design.'

SCALING UP WITHOUT LOSING SIGHT

Conducting a study involving over 850 primary school students across 46 classrooms is no easy task. The decision to include schools from diverse social, economic, and religious contexts made things even more complex. However, this diversity was essential. 'To uncover the beauty of individual differences, it was important to recruit a large number of children from different backgrounds and types of schools. For this purpose, we approached State, Church and Independent schools that educate children from different regions and varying socioethnic, religious and economic backgrounds,' says Gellel.

As the project grew, so did its structure evolve. With over 25 years of experience in literacy pedagogies, Amanda Morales (a Research Support Officer with the Department of Early Childhood and Primary Education) led the work of building strict data collection protocols. 'Even the slightest difference in the presentation of tasks and prompts had a drastic effect on participant responses,' she explains. 'We created clear protocols to frame each task to help maintain consistency in procedures.'

Photos courtesy of Symbol Literacy team

The team didn't just rely on pen and paper. Digital tools – some common, others highly specialised – were central to managing the volume and complexity of the data. Children completed questionnaires, narrative tasks and cognitive tests (including working memory games developed at Utrecht University) on school-issued tablets. Julian Galea, also a Research Support Officer with the Department of Early Childhood and Primary Education, as well as a counsellor and youth worker on the team, says that 'digital tools were essential for data collection. Without them, we would never have managed to collect and process such a large volume of data and facilitate access to such a diversity of voices and perspectives.'

However, technology was as much a hurdle as it was a solution.

WHEN THE WI-FI GOES DOWN

The team quickly discovered that their preferred tool, Google Forms, was blocked on many school tablets. Consequently, they had to convert everything to Microsoft Forms. Even then, they encountered all sorts of software and hardware issues. 'From tablets running out of battery, to login issues, to outdated software, to network issues, the next problem was always just around the corner,' says Galea. 'As we worked our way through the data collection process, we went from a Plan A-Plan B mentality to a Plan A/B/C/D/E/F… way of working,' he adds.

Adaptability became the name of the game. Teachers adjusted their timetables. Students shared devices. In contexts where literacy levels were low, neutral readers were brought in to ensure understanding without influencing the response. 'Research is a collaborative process,' Galea says, emphasising that the project worked because everyone – students, teachers and administrators – contributed.

The team faced not only tech issues but also more subtle challenges that were just as important. These included cultural concerns about performance, accuracy, and the 'right way' to do things. This was particularly evident in the narrative tasks where children were asked to write or recount stories in response to visual prompts. Many were unsure about deviating from what they thought was expected of them. The researchers' work included a process of gently challenging this mindset. This involved a reframing of the tasks so that they were not seen as tests of correctness, but as opportunities for personal expression. 'The provision of amanuensis support for learners with literacy difficulties – a scribe, the removal of spelling constraints, and offering freedom in the language used, provided a safer and more inclusive environment for all participants,' says Morales.

DATA WITH DEPTH

Before launching the full study, the team conducted a pilot study with 50 children to refine their protocols and troubleshoot any technical issues. 'It was important to us that our data collection process was efficient, not only because of the size of the project, but also to respect the needs of our research partners within the schools,' adds Morales.

So, what are the results of all this effort? A trove of information that reaches far beyond test scores. Alongside 1,600 handwritten narratives and 300 verbal ones, the team collected demographic data, memory test results and qualitative feedback. AI tools were used to transcribe and digitise the children's stories (always with human oversight), and analysis software such as MaxQDA helped the team to begin to make sense of the layers of data.

However, it's not just the size of the dataset that matters but what it enables. The team is now exploring questions at the intersection of cognitive psychology and socio-cultural theory, such as: How does context shape learning? Is working memory malleable? What symbolic resources do children draw on when telling stories? What patterns of narrative reasoning can be found beneath the surface?

Gellel is adamant that no single discipline can answer these questions. 'We have teamed up with experts from different fields to help us unravel and delve deeper into our data. This conversation is only possible through the collaboration with Prof. Noellie Brockdorff, Dr Rebekah Mifsud, Prof. Leonard Busuttil, Prof. Giuseppina Marsico (Università di Salerno), and Prof. Luca Tateo (University of Oslo), all of whom bring to the table different perspectives and experiences,' Gellel says. 'Educators working in the field are also being consulted, as their insights inform our interpretation of the data and generate new questions.'

LESSONS LEARNED

Not all schools agreed to take part in the study. Some withdrew after concerns were raised that the research would take time away from exam preparation. Galea sees this as part of a broader cultural pattern, noting that 'this episode was a stark reminder that, despite constant dialogue and discussion on critical thinking, research, updating pedagogies, and so on, a deeply-sedimented undercurrent of traditionalist attitudes is still very present in our culture.'

Nevertheless, the team views this project as a step towards change. Gellel says that the project 'has refined our ability to listen to children, both individually and collectively, strengthening our belief that the voice and will of the child need to be brought to the fore and respected. Research does not take place in a vacuum, but in an ecosystem of different perspectives, needs, and voices.'

For a project grounded in pedagogy, it is clear that the researchers themselves were learning, too. They learned how to troubleshoot on a large scale, how to adapt in real time and, most importantly, how to keep the child at the centre of it all.

After all, as this project shows, children's voices are worth hearing. They are essential to understanding the world we live in and the one we are trying to build.

The project 'A Pedagogy to Facilitate Children's Meaning Making: Engaging with Art and Narrative to Develop a Symbolic Repertoire' is funded by the University of Malta Internal Research Grants Programme, Research Excellence Fund (Grant Agreement No. 202303).

Unforgetting Women

Author: **Sarah Schembri**

Women have been historically overlooked, undermined and ignored, but that does not mean that they weren't doing anything! ***Coryse Borg*** *feels it's her duty to bring impressive women's names to light.*

Imagine believing that millions of intelligent, resourceful, dynamic, ambitious, and caring people, who collectively had every imaginable human characteristic, never did anything of note. Imagine thinking that societal expectations and pressures were so comprehensive that none managed to find a way through or around the system to do something interesting or important in their lives. It beggars belief that so many humans could exist and never do anything impressive or intriguing. Yet, from the way that we are taught about history, maybe without even realising, this is precisely the conclusion that many of us reach. We learn about men making decisions, going to wars, writing poetry, loving and killing, and shaping the world around them, and we are led to assume that while men did all this, women were just making dinner for the men.

When thinking about it, it seems far more realistic that women have always been active participants in their society, beyond the domestic sphere, and that the travails and achievements of women were simply dismissed and forgotten with time. Indeed, if we just have a look around our current society, we can see a myriad of characters and personalities living their lives in all imaginable and unimaginable ways. Thinking that this mishmash of humanity was not present in the past, even in the subjugated classes of people like women and the poor, is a disservice to the people of history. Unearthing their stories requires some digging, and luckily, people have been increasingly more willing to roll up their sleeves. One of these intrepid investigators is the broadcaster Coryse Borg.

DIGGING FOR WOMEN

Borg was helping her son prepare for his Maltese ordinary level oral exam and noticed that of the eight Maltese personages that he was asked to study about, none were women. This got her thinking, who are the women from Maltese history that we should know about? And come to think of it, who are the leaders, activists, inventors, artists, or otherwise notable women from world history who have made a name for themselves? As someone who considers herself to be constantly on the lookout for women's stories, Borg realised that she could not think of many women from history off the top of her head. Her common sense told her

Coryse Borg
Photo by Andrea Darmanin

that there must be many out there, and her sense of justice drove her to start doing her part in digging them out.

Borg has worked in media throughout her career, starting with Bay Radio, where she landed a job on the station by taking the initiative and submitting a voice audition on cassette. But even before that, as a child, Borg had an interest in journalism and writing. At some point or another, she has worked on pretty much every radio station in Malta, as well as at the Times of Malta, in theatre, and she is also currently a freelancer. This gave her the liberty and the experience to deliver something interesting and surprising to her audience with a unique touch.

Not long after her son's exam, Borg came across Katharine Wright Haskell – sister to the famed aviators, the Wright brothers. She was surprised that she had never heard of Katharine, despite her competence in business and promotional matters, which was essential to her brothers' success. This pushed Borg to use her experience and create a radio show to bring forgotten women back to the surface. The show was appropriately called, *Nisa Minsija* (Forgotten Women).

THE RADIO SHOWS

The difficulty Borg encountered was in picking the women to make episodes about rather than in finding enough of them. She spent at least six hours on each of the 13 episodes doing research and writing scripts. Even the opening theme music of the show is by a forgotten woman – the composer Fanny Mendelssohn, who had frequently published music under her brother's name. On each episode, Borg invited a guest with a similar background to the historical figure or topic of the episode. When asked whether it was difficult to find female guests with the appropriate background, Borg was emphatic – 'absolutely not!' Just like in our history, we have women around us who are experts in many fields, and they have a lot of interesting things to say!

Following the success of her first show, Borg wanted to continue singing women's achievements to the skies. She quickly started a second show, *Għamlitha!* (She Made It!), where she interviewed women at the top of their game who had overcome seemingly insurmountable difficulties. This programme adopted a more relaxed, conversational tone and delved into what these high flyers truly feel. Both programmes go a long way to dispel common tropes like labelling assertive women as aggressive. In effect, they encourage the listener to recognise internal, ingrained biases and deconstruct them.

FORGOTTEN OR OBSCURED?

Borg is amazed by the number of times that women's achievements were credited to men. Maybe you've heard how Rosalind Franklin's essential work on deciphering the molecular structure of DNA was buried by her colleagues when they used her work without permission and did not include her as a co-author in their historic paper. However, the taking of credit is not limited to science. Margaret Keane was an extremely commercially and critically successful artist whose husband stole her credit. She had to prove herself in a 'paint-off' in court, where it was revealed that all the acclaim and money given to her (by then ex-) husband, should have been directed to her.

There are also women whose contributions were simply forgotten about. Katharine Wright Haskell was awarded a medal alongside her brothers because her work was recognised as equally important towards the achievement of flight. However, this was largely forgotten with time, alongside her later work on women's suffrage. Closer to home, there are the forgotten female Maltese wartime heroes who practically ran the country during the Second World War. One that stands out is Mary Ellul,

A handful of guests who featured on the radio show. In order of appearance: Lorella Castillo, Kim Dalli, Dr Simone Azzopardi and Dr Maria Brown.

Photos courtesy of Coryse Borg

also known as Mary Man – a physically strong woman who pulled people out of the rubble and received the same rations as men because of the demanding work she did. Mary Man's renown remained after the war, still the efforts of Mary and the other women heroes are not as celebrated as they deserve. Today, the University of Malta has launched its open-access Women's Archive to preserve, celebrate, and share the legacies and contributions of Maltese women in history, ensuring their stories remain part of common knowledge.

THIS IS FOR MEN, TOO

Borg is sometimes hesitant about calling herself a feminist, purely because the association made by many between 'feminist' and 'man-hater' is too strong and more often than not, grossly incorrect. However, feminism, with its many definitions and particularities, is ultimately about the liberation of people of all genders from subjugation and from the confinement of socially expected gender roles. It is about the belief that there should be social, political, and economic equality for people of all genders. The patriarchal society we live in is limiting men as well. It limits what masculinity can be and limits men from selecting stable and rewarding careers in fields that are seen to be predominantly feminine. Patriarchy often disconnects men from their emotions and even, sometimes, from their own children. This is why impressive women should be role models for men as well as for other genders. Borg was, in fact, thrilled to hear that men were not only listening to *Nisa Minsija* but discussing it and recommending it to others. It is antithetical to the spirit of the show to assume that just because a programme is about women, it is exclusively for women.

As we wait in anticipation for a second season, Nisa Minsija will be aired again on Campus 103.7 on Wednesdays at 14:00 with a repeat on Sundays at 12:00 until the end of September. You can also download the episodes of Nisa Minsija and Għamlitha! and listen to them at your leisure.

TRANSLATING THOUGHT TO SPEECH:

GIVING VOICE TO THE SILENCED

Author: **Christian Keszthelyi**

*What if you could speak without ever moving your mouth? Just picture a word, and a machine says it for you. At the University of Malta, AI graduate **Jeremy Farrugia** is working to make that a reality.*

Jeremy Farrugia's research, supervised by Prof. Alexiei Dingli, explores a deceptively simple idea – using thought alone to communicate. The project is part of a broader initiative **THINK** has observed across UM departments focused on assistive technologies designed to support people with profound physical disabilities. Such individuals remain fully aware and cognitively capable, but face significant barriers to communication and movement.

Farrugia's method, speech imagery, is the act of internally repeating a word without actually vocalising it. It's the kind of mental behaviour most of us do daily, almost subconsciously. However, when combined with AI and neuroimaging, this silent whisper may one day become a lifeline.

The project relies on electroencephalography (EEG), a non-invasive method that measures brain activity using sensors placed on the scalp. Figure 1 shows the EEG device used in Farrugia's study – a commercially available headset capable of recording from 14 channels across the head.

To help decode where these signals come from, Figure 2 illustrates the electrode placement based on the international 10–20 system – a standardised map of the scalp used in EEG. This placement helps capture faint electrical patterns that diffuse outward from neuron activity deep inside the brain.

'EEG provides a low-resolution view of brain activity,' Farrugia tells **THINK**. 'We don't get detailed 3D scans like with fMRI, but we do get enough of a signal to detect broad patterns in brain activity, and that's often all we need.'

20 WORDS, 84% ACCURACY

To train the AI, participants were shown a word on-screen and asked to repeat it silently in their minds. These ranged from simple affirmations, such as 'yes' and 'no', to request verbs like 'help', 'put', 'give', and 'come'.

The resulting data was fed into a hybrid model combining convolutional neural networks (CNNs) and transformers – AI architectures adept at recognising spatial and temporal patterns in EEG signals. 'CNNs helped us process the signals as 2D grids while the transformers allowed the model to spot long-range dependencies within the brain's activity,' Farrugia explains. The initial results have been promising.

Figure 1: The EEG headset used to record speech imagery signals.
Estreito, Z., Le, V., Harris Jr., F. C., & Dascalu, S. M. (2024). Evaluating an Elevated Signal-to-Noise Ratio in EEG Emotion Recognition. *International Journal of Software Innovation, 12*(1), 1–15. https://doi.org/10.4018/IJSI.333161

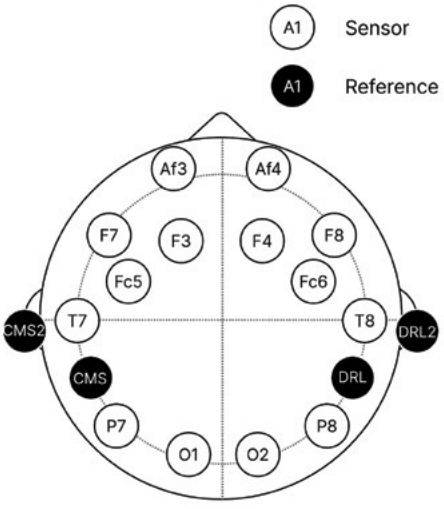


Figure 2: Electrode positions on the scalp used to capture brain activity.
Image courtesy of Jeremy Farrugia

The system could classify imagined words with an average accuracy of 84%. This is a significant margin above the 5% chance level and, crucially, just beyond the 80% threshold identified in assistive tech literature as the baseline requirement for practical use.

WHAT THE BRAIN SAYS

Figures 3 and 4 visualise this brain activity in full colour. Figure 3 shows the average EEG activity patterns for each word. Notice how different each map looks – every word produces a unique 'neural fingerprint' of the imagined speech.

Meanwhile, Figure 4 illustrates the individual variations in participants' brains. 'There's some overlap in the frontal cortex, but beyond that, each brain lights up in different places,' Farrugia notes, moving on to state that 'it's one of the reasons this task is so hard.'

SHIFT TO THE RIGHT

Curiously, despite language typically being predominantly processed in the temporal lobe of the brain's left hemisphere, Farrugia's study observed dominant activity in the right hemisphere during the experiment. At first, this seemed like an error. However, further research revealed a fascinating explanation – repetition shifts speech to automatic, right-brain processes, much like chanting, counting, or prayer.

'After repeating a word like "help" thirty times, you're no longer actively constructing speech,' explains Prof. Alexiei Dingli. 'You're simply retrieving it – like a form of linguistic muscle memory.'

This observation may carry more profound implications beyond neuroscience. In many religious practices, such as reciting mantras with Buddhist prayer beads or praying the Christian rosary, repetition plays a central role. This cognitive shift – from the brain's language-planning areas to more automatic processes – may help disassociate the words from their literal meaning. That dissociation, in turn, might enable practitioners to enter a meditative state, engaging the brain in a manner distinct from ordinary speech.

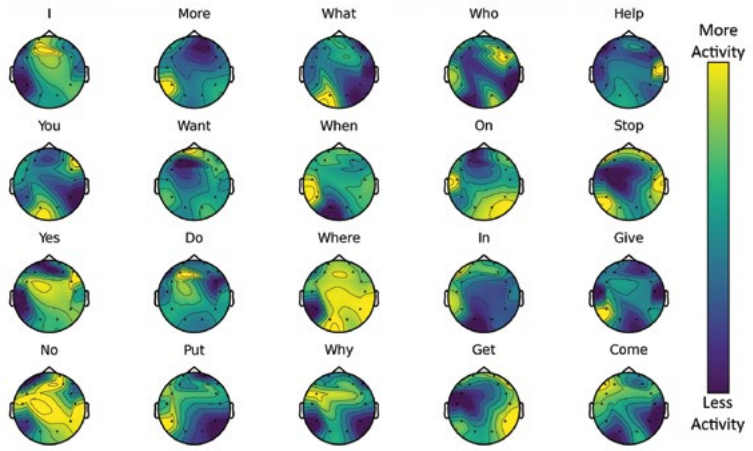


Figure 3: Average brain activation patterns per word, across all participants.
Image courtesy of Jeremy Farrugia

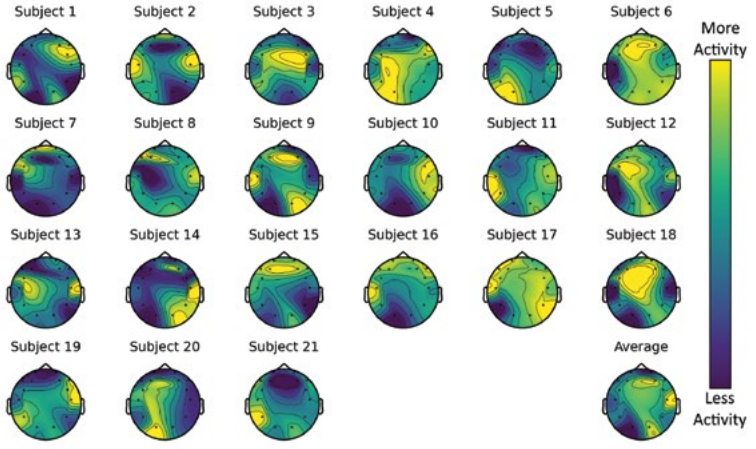


Figure 4: Each subject shows distinct patterns of brain activity during speech imagery.
Image courtesy of Jeremy Farrugia

SPEECH IMAGERY VS. OTHER MENTAL TASKS

To further ground his findings, Farrugia compared his dataset with those from motor imagery and visual evoked potential studies – two well-established paradigms in neuroscience research.

Motor imagery involves imagining physical movements, like clenching a fist or moving a limb, without actually performing them. Visual evoked potential studies, on the other hand, focus on how the brain responds to visual stimuli, such as flashing lights or changing images on a screen.

By contrasting the brain activity observed during speech imagery with these two distinct types of cognitive tasks, Farrugia was able to demonstrate

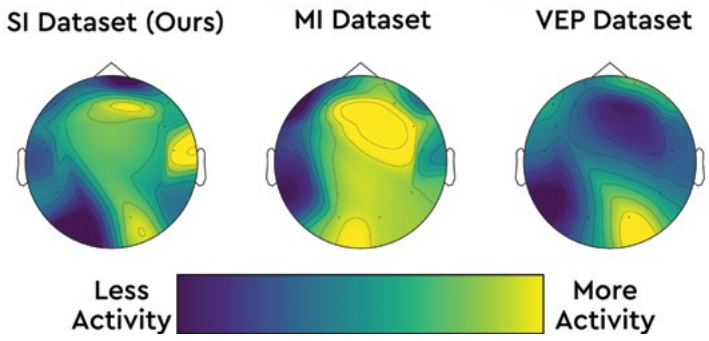


Figure 5: EEG activity from speech imagery, motor imagery, and visual evoked potential studies.
Image courtesy of Jeremy Farrugia

that the patterns elicited by imagined speech are both unique and consistent, confirming that the system was truly detecting the neural signatures of internal speech rather than generic brain noise or unrelated mental processes.

Figure 5 illustrates the differences in EEG activity between these cognitive tasks. 'It validates that speech imagery has its own distinct neural signature,' Farrugia says. 'We're not just picking up noise from blinking or looking at a screen. We're really seeing the act of imagining speech.'

While the research shows promise, Farrugia is careful not to overstate the findings. 'We're a long way from decoding entire sentences,' he says. Scaling up from twenty words to a whole language would require an open-vocabulary approach, where AI can interpolate between similar concepts (big → large → huge). Current models still fall short of capturing the full complexity of natural language.

Instead, Farrugia's system follows a closed-vocabulary model informed by the literature on augmentative and alternative communication. Originally developed for individuals with autism and those who have speech impairments, research in augmentative and alternative communication helps identify the most essential words for basic communication, such as 'want', 'yes', and 'no'.

'This isn't about replacing language. It's about giving people a few powerful tools to express basic needs and emotions,' Farrugia says.

Jeremy Farrugia and Prof. Alexiei Dingli
Photo by James Moffett

THE FUTURE OF THOUGHT-BASED COMMUNICATION

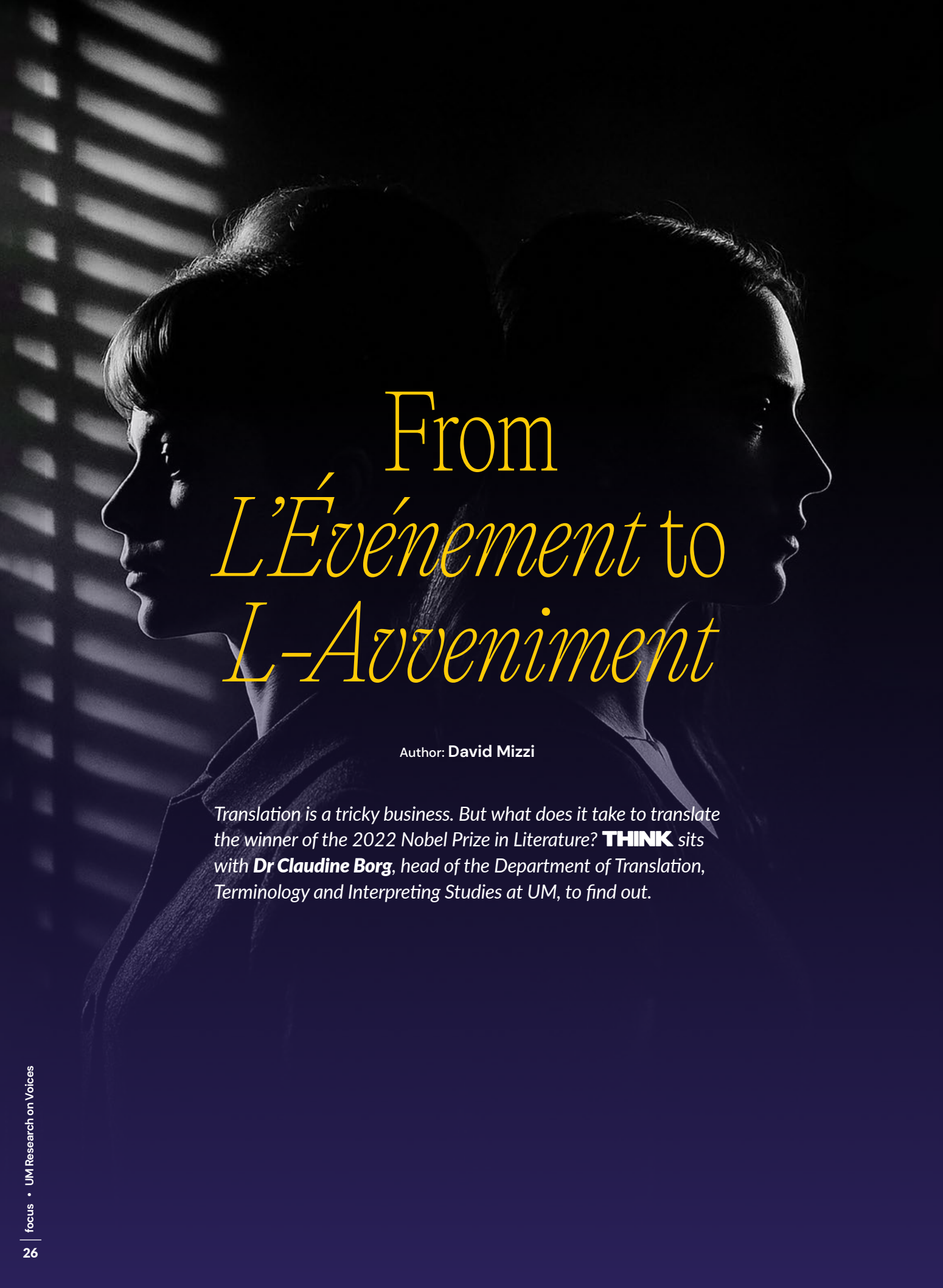
With further development, Farrugia envisions a future where EEG-based speech interfaces seamlessly integrate into everyday smart devices, augmented by technologies such as gaze tracking (read more on this in **Issue 46**, **p. 52**), contextual awareness, and predictive text to enhance expression and nuance.

Imagine someone simply thinking about a word, their gaze confirming intent, and the system responding with fluid, meaningful communication. Take the word 'glass', for instance. It could refer to a drinking vessel or a window pane. On its own, the brain signal does not reveal which one the person intends to mean.

But if their gaze is fixed on a kitchen counter, the system might infer that they are thinking of a cup. If they are looking towards a window, the interpretation shifts. This integration of brain activity and visual context could dramatically enhance the system's ability to resolve ambiguity and respond with accuracy and intent.

That vision may still be years away, but even now in its developing form, this technology does something quietly revolutionary. It offers a pathway – however modest with its twenty basic words – back to connection, agency, and dignity for people with difficulties producing speech, but still have so much to say.

'We're not building minds. We're building bridges,' Farrugia concludes. These bridges may help diminish the gap, moving people from silence to speech, from isolation to interaction, and from imagination to voice.



From *L'Événement* to *L-Avveniment*

Author: **David Mizzi**

Translation is a tricky business. But what does it take to translate the winner of the 2022 Nobel Prize in Literature? **THINK** *sits with* ***Dr Claudine Borg****, head of the Department of Translation, Terminology and Interpreting Studies at UM, to find out.*

L'Événement is an autobiographical novel where the author, Annie Ernaux, works through the trauma of her clandestine abortion 60 years ago. Despite happening over half a century ago, the classism and shame that Ernaux suffered and the way society views women have hardly changed. These attitudes are certainly not limited to modern Malta, but the reality she faced in 1963 and 1964 is, in some ways, still the reality here and now. While the topic of abortion makes this book particularly pertinent for a Maltese audience, 'it was the Nobel Prize for Literature that triggered the translation,' explains Dr Claudine Borg. 'I always try to translate from contemporary French literature, and when she won the Nobel Prize, I said to myself, it's time.'

The story itself is less than a hundred pages long, but it's a heavy and intense reading experience. The book is praised for its unflinching clinical writing and its political commentary on women's rights. Crafting a translation that does justice to *L'Événement* is an ambitious undertaking. Fortunately, Borg is already quite familiar with Ernaux's work.

FROM FRENCH TO MALTESE

Ernaux has been a presence in Borg's life for the past 20 to 25 years. In fact, Borg's master's dissertation in 2006 featured a translated extract from Ernaux's *Passion simple* (*Simple Passion*). Ernaux's writing is often described as *écriture plate*, or flat writing. 'It's clinical and minimalist in style, yet it's also very personal and very raw. There's no beating around the bush. It has no filters, and it's punchy. We don't really have something similar in Maltese,' Borg explains. 'I firmly believe that translating literature also enriches the literature it is translated into.'

You might be tempted to think that such a clinical and minimalist style should be easier to translate; however, Maltese is a heavily idiomatic language, which presents unique challenges. For example, in Maltese, to say 'brace yourself', we might say '*ħoll xagħrek u ġib iż-żejt*' (unravel your hair and bring the oil). But Ernaux avoids such colour. In her writing, a person simply knows. They do. They fear. They wait. 'I went through multiple drafts trying to filter out any idiomatic expressions that might have slipped in to remain true to the original,' explains Borg.

However, there are moments of beautiful and satisfying synchronicity between the original French and Borg's translation. For example, at one point, Ernaux explains how she 'never resorted to descriptive terms or expressions such as "I'm expecting", "pregnant" or "pregnancy".' In French, the word for pregnancy is '*grossesse*', which Ernaux points out, neighbours '*grotesque*' (grotesque). The original would be, '*Pour penser ma situation, je n'employais aucun des termes qui la désignent, ni "j'attends un enfant", ni "enceinte", encore moins "grossesse", voisin de "grotesque".*'

While the English translation is forced to omit this poetic association, Borg manages to elicit it in Maltese, pointing out the rhyme between '*tqala*' (pregnancy) and '*tqalla*' (nauseating).

Dr Claudine Borg

'Biex naħseb dwar il-qagħda tiegħi ma kont nuża ebda terminu li jiddeskriviha: la "qed nistenna tarbija", la "tqila", u wisq anqas "tqala" li tirrima ma' "tqalla".'

'There are always challenges; challenges exist when translating any language. But I think Maltese can translate anything. It's about the creativity of the translator. When there are challenges, we have the expertise to come up with creative solutions appropriate for the context,' says Borg. One of the main terminological challenges for Borg was that Maltese doesn't really have a word for backstreet abortionist – a slight challenge given the topic of the book.

In French, the term '*faiseuse d'anges*' is used, which translates to 'angel maker.' The term itself has tragic undertones; however, when Ernaux uses it, she makes it clear that it has positive connotations. 'She precedes it with "*une femme au joli nom*" (a woman with a pretty name), and I wanted to maintain the positive connotation,' says Borg. Various experts suggested alternatives, such as '*persuna li tagħmel abort*' (person who performs abortions), while Borg's editor suggested '*qabla tal-erwieħ*' (midwife of the souls). However, the former was too clunky while the latter would not be entirely accurate; furthermore, neither maintained the positive connotation used by Ernaux.

'I vaguely remember as a child that my grandmother used to refer to this figure in the community using "*majistra*" (midwife) with a certain tone,' explains Borg when discussing the issue. 'This helped me in my research and led me to use the term "*ħelliesa*" when referring to a backstreet abortionist. While *ħelliesa* typically refers to a liberator or saviour, it was also used to refer to a person who assists a woman during childbirth. Furthermore, it ties into how we use "*ħlas*" (delivery/childbirth) in Maltese. I felt this would help preserve the original implication that Ernaux intended,' explains Borg.

CREATING A TRANSLATION

Translation is not just a linguistic reproduction but an act of creation and interpretation. Ernaux's book is a harrowing account of her trauma. The subject matter and Ernaux's frank approach make it a tough book to read. Borg's translation unwaveringly preserves that impact. There are powerful moments that left me feeling disturbed and queasy, yet there are also moments when I felt indignant at the injustices Ernaux endured. It is these raw, brutal, and honest experiences that reframe discussions about abortion from the theoretical to the practical. Impotent debates make way for the cold, harsh reality

that victims face, which *L'Événement* brings unashamedly to the fore. It drags you into a body: into fear and into shame. Ultimately, Borg's Maltese translation provides a rich nuance that is simply lost in the English version.

Translation adds something to the linguistic corpus of the target language. 'Translation is not a solo adventure,' adds Borg. 'I always discuss the text with someone already familiar with the source text. There are also readings and discussions with the editor as well as the proofreader. The entire process of translation itself is fascinating to me,' she smiles. In fact, Borg's translation of *L'Événement* serves as the basis for one of her research projects. 'I'm researching my own practice of translating through an autoethnographic approach. I've documented my entire process empirically and kept detailed notes. I'm trying to link my practice to my research, so I see the translation more as a research project with a creative outcome,' Borg points out.

Despite Malta's attitude towards abortion, there was, surprisingly, no pushback. While the book itself won funding from the Malta Book Fund, the publisher had accepted even before receiving the funds. 'I had very healthy conversations with the editor. I like working with them as they respect the translator's role. They empower translators,' Borg says.

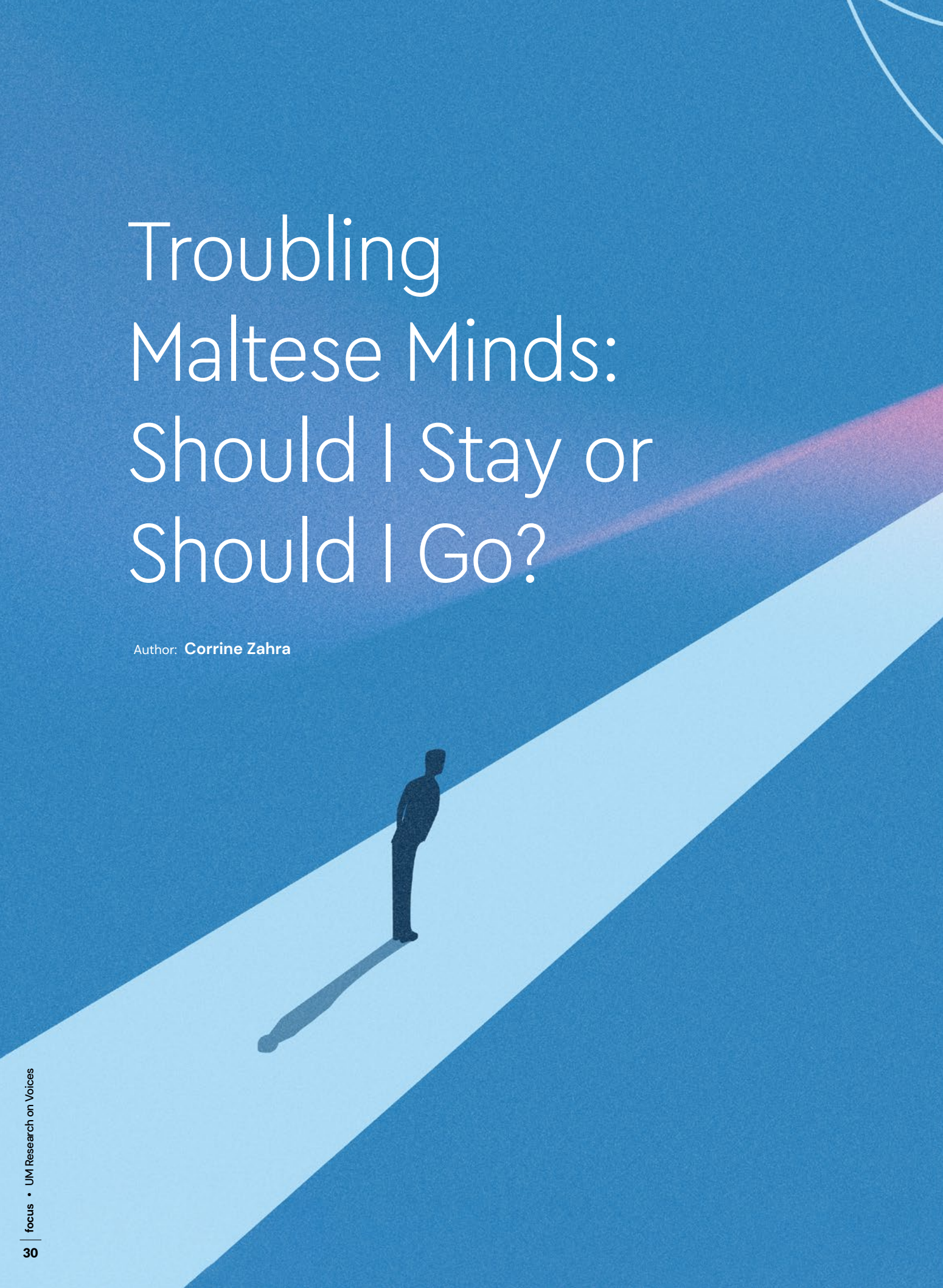
***L'Avveniment* is funded by the National Book Council's Book Fund 2023.**

Copies of the book are available at the few remaining local bookshops. Alternatively, order a copy online at Faraxa Publishing.

Are you interested in translating literature? Check out the literary stream within the Master in Translation and Terminology Studies at UM.

Troubling Maltese Minds: Should I Stay or Should I Go?

Author: **Corrine Zahra**



Living in an internationally connected world makes it easier to search for opportunities abroad. This feels necessary at times when living, studying, and working in a small country – a small island state, like Malta. In the past, many youths had to leave Malta to pursue or enrich their careers by following academic programmes abroad. The move allowed them to specialise in their fields with some ultimately becoming professors.

At the age of 18, students finishing their Advanced and Intermediate Matriculation exams apply for their courses at the University of Malta, praying they have enough points to get accepted into the only public university in the country. Then, after three or four years of studying at the undergraduate level, many freshly graduated students face a conflict: stay in Malta or leave the country? Some experience guilt for wanting more and having to leave Malta and their families. With the migration of Maltese youths, the question one must ask is: 'Can Malta become a global academic hub without its brightest minds having to leave?'

THE DESIRE TO STUDY ABROAD

The exodus of bright young minds leaving Malta isn't a trend that started recently, as half-Maltese, half-Irish Prof. Eleanor Scerri remarks on her academic journey. 'In the 90s, I had to leave Malta because I didn't have a choice,' Scerri says. 'I left Malta because no one researched or taught the areas I wanted to study.' Although Scerri is an affiliate associate professor and research specialist with UM's Department of Classics and Archaeology, her main work is conducted at the Max Planck Institute of Geoanthropology in Jena, Germany, as a research scientist and research group head.

Scerri has worked at several universities, including Oxford and Bordeaux, focusing her studies on planetary change, human evolution, archaeological science, and climate modelling. She comments on how universities like Oxford attract high-profile researchers, including Nobel prize winners with multi-billion euro grants. And although exciting things happen where big grants are involved, elite universities take a lot for granted.

Being an academic or researcher in Malta is exciting because there's a lot to build in Malta – it's great to be in a position to make a difference. Now, Scerri feels that she is in a unique position to teach in Malta and give those curious about the areas she researches the space to explore further. Yet, even with innovative programmes

Prof. Eleanor Scerri

starting up in Malta and academics broadening their research, Maltese youths still feel inclined to leave. 'It's not that people want to leave Malta, they just want a chance to further their studies,' Scerri notes. 'But, we need people to either stay or come back to Malta because we need smart people to build a knowledge economy.'

Prof. Michael Galea from UM's Department of Electrical Engineering echoes this sentiment through his own lived experience. After completing his Ph.D. in Nottingham, England, he remained a professor there for 11 more years and also worked at the university's institute in Ningbo, China. When the COVID-19 pandemic hit, he and his wife decided to return to Malta – they missed their country. Galea emphasised how relieved they felt to finally be back home after so many years abroad. Additionally, he is excited to be working at UM, where he can make a big difference for Malta's young minds.

Prof. Michael Galea

SHOULD YOU LEAVE MALTA?

It sometimes feels that UM must tackle so many areas of study since it is the only public university in the country. Prof. Godfrey Baldacchino, a professor of sociology with an interest in island tourism and small state studies, believes that UM has a responsibility to generate critical thinkers and a highly educated workforce for the country's economy. At the same time, he agrees that branching out by studying abroad is important too. 'As we specialise, we find it hard to develop our specialisation in Malta,' Baldacchino states, 'which means moving abroad. It is a rite of passage. It means getting exposed to international culture too.' Baldacchino himself earned his master's degree at The Institute of Social Studies, The Hague, The Netherlands, and a Ph.D. from the University of Warwick, England. He worked full-time in Canada for a decade, and nowadays, he splits his time between UM's Department of Sociology and the University of Prince Edward Island, Canada.

Prof. Godfrey Baldacchino

Baldacchino points towards a balance that needs to be found between the desire to specialise and the need for general knowledge and interest. He believes that professors need to be flexible specialists, rather than teaching solely within their specialised field. 'We cannot dedicate too much time to a narrow, specialised area.' Although Ph.D. and postdoctoral studies train academics to be specialised, being a generalist is a positive thing. Being multi-disciplinary helps to engage with students of different interests, ensuring that subjects remain grounded within contemporary contexts and experiences.

A clear trend started to develop amongst local academics. Not only do academics worldwide tend to move from city to city, or country to country, to attend different institutions, but especially Maltese academics have to leave Malta to pursue their career further. Funnily enough, it's the opposite for Greek researcher Dr Panagiotis Alexiou, who finds himself in Malta after moving around a lot for his career. He earned his bachelor's degree in Scotland, followed by a master's degree in the Netherlands, and doctoral studies in Greece, followed by postdoctoral research in the USA. He now finds himself in Malta as a researcher and ERA Chair with the Department of Applied Biomedical Science, and he's excited to be at UM. He believes that the university has a lot of potential since academics are exploring new research ideas, yet much like Baldacchino, he also commented on the difficulty of developing a specialisation at UM.

Alexiou notes that there are young people at UM who want to do cutting-edge research, but if, for whatever reason, a relevant academic does not endorse your work, then you're stuck. This is why some Maltese students might want to go abroad to pursue further studies, like master's and doctoral degrees. Echoing Baldacchino, Alexiou remarks that 'pretty much everyone has done a few years. The perception is that you were productive abroad and are coming back to teach the younger

Dr Panagiotis Alexiou

generation.' In this sense, Alexiou implies that there is some pressure for local scholars to travel abroad and return with a fresh perspective in their field, adding to the knowledge at UM. His take is that the Maltese should not feel the need to venture beyond their shores as they already have the potential to be leaders in academia, especially in certain scientific areas.

Like Alexiou, Prof. John Ardila is a foreigner to Malta, teaching Spanish and Latin American Studies at UM. Ardila echoes Alexiou's thoughts that 'UM is getting things right. All universities have been undergoing change over the past 20 years. Our strengths are: research and innovation, coupled with quality teaching and a robust administration.' Ardila notes that he was impressed with Malta and the University when he first had the opportunity to be an external examiner, and felt he had to apply for the resident academic position. Over the years, he has taught at the University of Edinburgh (Scotland), Lund University (Sweden), the University of Extremadura (Spain), Kalamazoo College (Michigan, USA), and Marquette University and Milwaukee Area Technical College (Wisconsin, USA). Now, he is extremely happy to be in Malta, teaching brilliant students. He also feels that there are many world-leading researchers in all departments in his faculty, which speaks volumes about the quality of UM's teaching, thus making UM a fascinating place to work.

Prof. John Ardila
Photo by James Moffett

Ardila notes: 'We are a top university of international repute, one of the oldest universities of Europe. Staff and students are driven by a genuine love for knowledge and a commitment to intellectual excellence. What I feel is different is the sense of community, which is much stronger here than in other universities.'

WHAT UM HAS TO OFFER

Whether students who wish to pursue an academic career ought to stay or leave Malta feels like a double-edged sword – both sides have their strengths and weaknesses. Yet, interest in academia is strong in Malta. Galea is elated to see young people taking an interest in research and STEM subjects at such a young age. He was pleased to note that when Form 5 students, those about to sit for their SEC Matriculation exams, visit UM, they are excited to see the labs. He's even had a handful of students reach out to him out of interest in the engineering programmes. Because, yes, UM *does* have a lot to offer young people in Malta.

Case in point, the recent discovery at Latnija Cave pushed back the history of Malta by at least a thousand years, reframing how we understand the lives of hunter-gatherer communities (see Issue 47, pp 38–43). This research is monumental not just for UM and Malta as the home of this discovery, but for the entire world. Scerri remarks that the finding resulted in nationwide excitement: 'It's excitement that I've never seen before. People received the information positively and were talking about it everywhere in Malta.' There is power in communicating science properly, which attracts students to pursue research too. 'A new generation is now emerging, saying – I want to be part of this.' Scerri has noticed that, within the academic world, research is becoming more digestible, allowing the public to understand and share in the excitement of research conducted at UM and across the globe.

Yet, more research means 'we need more access to funding', Scerri states. With the support of the Maltese government, which funds research through agencies like Xjenza Malta, and European Community funding schemes like HORIZON Europe, the research output at UM has boomed in recent years. For example, in December 2024, the TerraForm project, led by Dr Huw Groucutt (UM's Department of Classics and Archaeology), was awarded a European Research Council (ERC) grant of €2 million. Still, more can be done, and is being done – it's all a matter of being aware of it.

Dr Huw Groucutt

That's precisely the logic behind Prof. David Magri's approach to foreign universities. When presenting at conferences abroad, Magri, who researches in the field of molecular logic-based computation, starts his presentations by talking about Malta. He gets his audience hyped up by showing pictures of fireworks, beaches, town festas, and Hollywood blockbuster movies filmed here. His aim? Magri wants to capture his audience's attention. He wants to spotlight Malta as an up-and-coming, innovative nation for science and research with plenty of culture and character to complement our successes. For Magri, being a professor means inspiring a crowd – people are keen to know more.

Being Canadian-Maltese, Magri was at home in Canada, where he completed his Ph.D.; however, today he is a professor at UM's Department of Chemistry, where he has been lecturing on analytical chemistry since 2010. On his way to our islands, Magri completed his postdoctoral studies in Belfast, Northern Ireland, became an assistant professor at the University of Prince Edward Island, Canada, and held lecturing positions at Ontario Tech University in Ontario and Acadia University in Nova Scotia, both in

Prof. David Magri

Canada. Now in Malta, he has cultivated a fascination with the birth country of his parents and grandparents. He extends this sentiment to those willing to listen to him speak at conferences abroad, by inviting them for a holiday to a nation blessed by history and with so much richness bubbling away on this Mediterranean archipelago.

REPRESENTATION & DIVERSITY IN MINDSETS

The University of Malta is an institution that creates critical thinkers who take Malta with them when they travel for their studies or conferences. As an American-Gozitan, I (the writer Corrine Zahra) found myself relating to these professors in my own way. I did my B.A. in English at UM and pursued an M.A. in the Humanities at the University of Chicago. As someone from a small town in Gozo, I had to break free from that very small-town mindset to achieve more abroad. Once that dissipated, I began to see myself as someone who could move to Chicago and pursue an academic career that has international standing and allows me to add value to the local education system too. Being from Malta, more specifically, Gozo, is something to share with international peers – and certainly something that I am proud of.

Fundamentally, universities are hubs for knowledge and thought. And so, a singular approach to one's education cannot be consolidated, as every academic, researcher, and student has their own vision for their future. In turn, respecting and encouraging the varied academic voices that represent UM is a must. By being a space open to all mindsets, thoughts, and opinions, UM becomes a place of discourse that cultivates an academic culture worthy of international recognition. This inclusiveness and freedom to think are essential for the growth of academics whose research often goes unnoticed but leaves a profound impact on our society.

A New Tale Always Entertains

Author: **Noah Galea**

Whether it is a corrupt government official trying to solve their problems through indirect murder, or a sombre meditation which hauntingly likens life to a harsh winter, ***ANTAE*** *lives up to its tagline as 'a journal for creative writing'.*

Having been joined by two of *ANTAE*'s associate editors, Ulaş Ersezen and Nikolai Zammit, the pair shared some reflections on the journal's first year after its rebranding, providing some details on the internal process of choosing which submitted works get set for publication, as well as the journal's overall role in providing a space and community for creative writing.

Originally an interdisciplinary journal for more academically inclined pieces of writing, *ANTAE* found its start with UM's Department of English in 2013 and moved successfully to publish an impressive 20 issues across 7 volumes. The beauty of this detail, Zammit notes, is that the journal is 'very well recorded', preserving all of its legacy and current content through its webpage, free of charge and open to all. This, of course, persists even now. In its current rebranding, the journal has successfully published three issues of exclusively creative work. Authors who have made the cut come from all continents (minus Antarctica) and backgrounds, whether they are well-established and highly experienced, or perhaps newcomers to the scene, gifted with a budding talent. It's quite a comforting detail, especially when considering the move to creative writing. Prospective contributors can assure themselves that their work, if published, will not only stand prominently in the issue it finds itself in, but that such work's presence will persist unwaveringly. *ANTAE*, like the strong pillars it takes its name from, will hence provide a firm foundation upon which writers may make their mark.

Editor-in-Chief Dr Aaron Aquilina from the Department of English has in fact taken steps to ensure that this rebranding of the journal is designed to be more writer-oriented and writer-minded. The ease of access to *ANTAE*'s catalogue in completeness is one such design, but *ANTAE* also works to streamline the process for authors with regard to moving their work from plan

The *ANTAE* Team
Photo courtesy of the ANTAE Team

to product. The editors of the journal deliver consistent communication to ensure writers are kept in the loop at all times with how their work is faring in both the selection and publication processes. This goes beyond a simple acknowledgement of work being received to complete transparency on potential edits and suggestions made to pieces, which would then require approval from their respective authors prior to the issue's official unveiling.

Transparency, alongside fairness, is of chief importance for the journal, and the following contents may be a testament to this. Ersezen and Zammit had no reservations in sharing with me the internal process of the journal's workings in full, displaying an operation that is fair yet competitive. With a team of editors sectioned into two groups, the intake of a particular issue is then split, with each half assigned at random to either of these groups. Following a rigorous review, the submissions then make their way to Aquilina, who, as the Editor-in-Chief, examines each work with his own fine focus. The numbers here matter. With each group being comprised of three editors, and Aquilina serving as a fourth at the final stage, a majority vote of approval must be reached for a work to be considered for publication. What these editors have at their disposal to aid them in such deliberation is nothing but the works in front of them. Names and accompanying biographical information are phased out to ensure that each work is judged solely on its innate strengths and distinctive features. What may intrude, perhaps, are the internal biases of the editors themselves. Any one editor may be more inclined to a particular genre or style of writing than another. The quite sizeable number of editors, as well as the majority system, therefore seeks to combat this factor and ensure a more level playing field.

THE CORE IMPORTANCE: THE AUTHOR, THE WORLD

Each piece of prose, or line of poetry, paints a world that is spawned by its author and inevitably mirrors who they are. In a sense, it is the best form of expression as it represents

genuine authenticity. The team of *ANTAE* is not unaware of this. Ersezen notes that, interestingly, as the editors go through with their editing of the works entrusted to them, they tend to follow a principle which states 'edit as little as possible'. 'It is more so about just listening to the prose and poetry and less so about instructing the author,' Zammit says. This seems rather unexpected, but when one thinks about it, it makes a lot of sense. I had described the journal earlier on as being 'writer-minded' and 'writer-oriented', and as the editors are writers themselves, they recognise the value of a voice unfettered – of not boggling down a writer's intricate designs simply on the basis of making it 'clearer', as vague as a statement that may be. No writer really wants their work touched and supposedly 'made better' by an editor who may not entirely get the work's full intent.

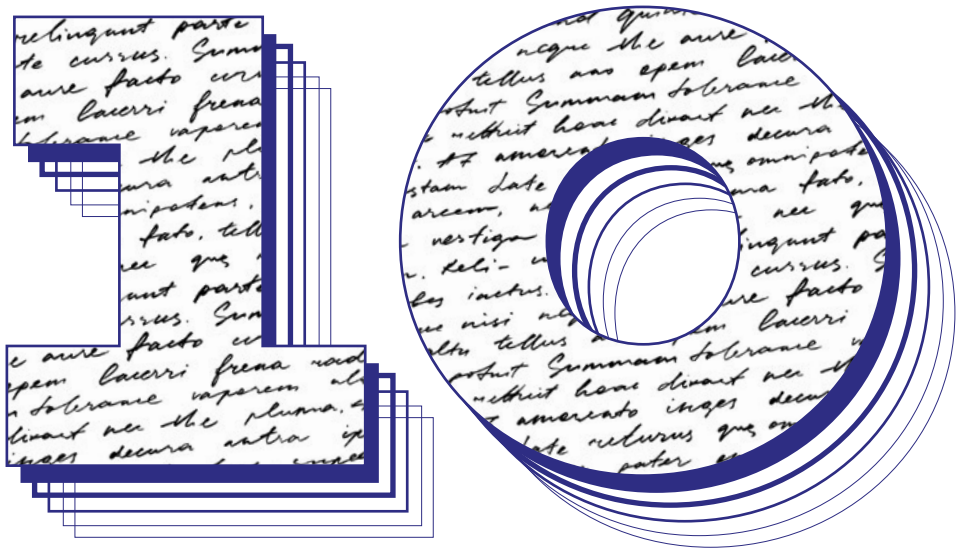
The writer knows their work best, and it is upon this reasoning that, apart from editing some grammar and syntax, a work is left to be, hopefully, as the writer intended it to be. As Zammit notes, the underlying aim when it comes to editing a work is 'letting a text be what it wants to be'. Voice is invaluable, and *ANTAE* recognises this. Ersezen, fittingly, states that he likes a text 'that's not frightened of using language as it wants to use it'. It may be safe to say that authenticity will always be the prime quality *ANTAE* looks for in a text – of how sure of itself it is and how well it does that which it sets out to do – and the team will strive to preserve this to honour both the work and its author. It seems fitting then that, at least in Zammit's method, he does not tend to administer any hard and fast guidelines when it comes to reviewing work. Instead, he posits a question back to the author – 'how was this supposed to make me feel?' – and he moves from there.

YOU MAKE A WORLD, AND THE WORLD MAKES YOU

Our writing is as much a product of our surroundings as it is an expression of ourselves. It would not be wrong to allow our daily lives to enter into the worlds we pen to paper. Such influence may often lead to the high notes in one's stories. Given this, perhaps it would be beneficial to complement our writing process with people who are equally passionate about their own worlds as we are about ours. Potentially, the best people for writers are other writers. Each person knows the craft in their own unique way, and this difference may perhaps be the key for most to both sharpen their strengths and identify what could do with a little polish. The editors at *ANTAE* know this better than most, I'd say, which is why Aquilina has taken the initiative to provide a support group for writers. Every month during the academic year, *ANTAE* hosts a minimum of one writing workshop, often centred on a particular aspect of writing and moderated by a volunteer who may be especially interested in the topic of the time. Writers are often given an opportunity to share their own writing with others at the workshop, and the mood is non-judgemental and constructive. Feeling welcomed is what's most important to get people at the door and coming back, and *ANTAE* works hard to ensure this is so.

As such, continuing on the topic of feeling, perhaps feeling is the best indicator of a work's authenticity. But just like anything in the world, there are two sides – positive and negative, shortcomings and strengths, acceptance and rejection. As feeling may indicate the best aspects of a writer's work, feeling may also stop a writer from submitting their work at all. Zammit and Ersezen reflect on an obstacle often faced by those who've shown interest in writing yet never submitted – a fear of rejection. Their two cents is that this is simply a natural step for any writer, and not an exposure of weakness or inadequacy. They noted how there have been writers who were initially rejected who did not cease in spirit to submit work in later issues, and through trial and improvement, they were eventually accepted. The moral here is to keep on writing, and with the added benefit of being accessible to an international audience, the journal may be just the right space for writers, budding ones especially, to grow.

Follow along and join *ANTAE*'s monthly pop-up workshops



Counting Ten with *CounterText*

Author: **Noah Galea**

*As **CounterText** reaches its tenth anniversary, founding editors **Prof. Ivan Callus** and **Prof. James Corby** reflect on how notions of the 'countertextual' and the 'post-literary' have developed since the journal's earliest volumes. What began as a manifesto-like hypothesis has, through experiment and collaborative debate, evolved into a distinct body of thought.*

CounterText was founded out of a shared desire to understand where the literary – or the post-literary – stands today, and to explore how best to think and write about it. For Prof. Ivan Callus and Prof. James Corby from UM's Department of English, the question was less about correcting any perceived deficiencies in existing scholarship than about opening a space capacious enough to register the complexity and unpredictability of literature's evolving character.

Despite literature's uncontainable richness and breadth, academic practice has often reduced it to 'disciplinary boxes'. Scholars are encouraged to define themselves narrowly – a medievalist, a Dickensian, and so on – but a systematising impulse sits uneasily with a field whose very nature is variability, diversity, experiment, and transformation.

As Corby notes, *CounterText* was conceived to resist such narrowing: 'We are not interested in the kind of scholarship that merely reproduces the conventions of academic publishing. *CounterText* will always choose the bold and the revelatory.' He adds that what mattered was creating a journal that could accommodate different forms of

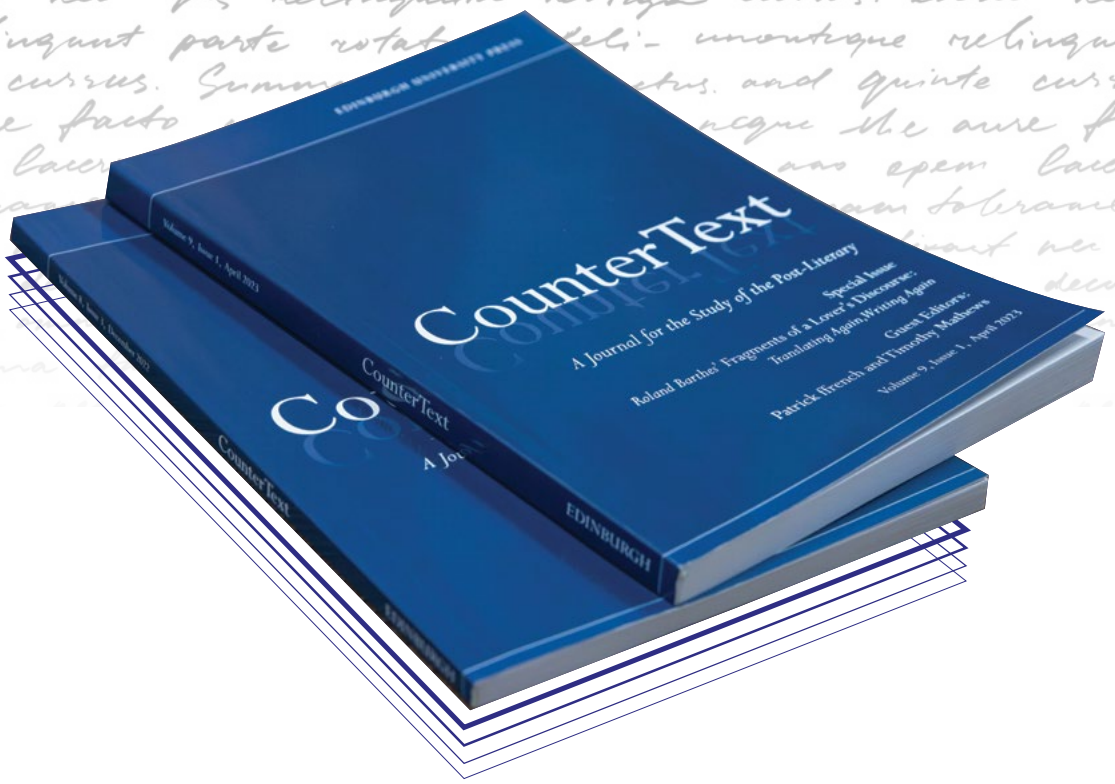
Left to right: Noah Galea, together with the founding editors of *CounterText*, Prof. Ivan Callus and Prof. James Corby
Photo by James Moffett

thought, however unorthodox, so long as they pushed towards new ways of understanding literature. The 'counter' here lies not in novelty for novelty's sake but in enabling forms and modes of criticism capable of rethinking the literary in ways that 'incremental, sober scholarship' cannot.

FINDING A PLACE, *OR*, A PLACE OUT OF PLACE

Literature, perhaps more than most disciplines, demands exploration rather than containment. As Callus notes, it would have been easier for UM's Department of English simply to 'withdraw into our studies'. But had they done so, an opportunity to innovate and think in new ways would have simply not happened. If conversation is the mode by which new ideas may be formed, it is essential that such conversation takes place with a radically open attitude, curious about literature's and literary criticism's directions (not least the ones that academic criticism might overlook). But, of course, such a stance comes with risk, and Callus notes that Corby and he were eager to create and curate 'a space where people may write literary criticism differently' and thereby practise 'a type, or style, of academic writing that is neither safe nor square'.

While Callus and Corby are at pains to point out that this does not by any means exclude more recognisable articles of literary criticism, which retain an important role in the journal, that wager has shaped *CounterText*. *CounterText*, being (as its subtitle has it) 'A Journal for the Study of the Post-Literary', regularly publishes work that does not resemble the conventional journal article. Its pages have included interviews, picture essays, and various hybrid forms of creative criticism – writing that resists categorisation yet addresses the journal's central questions: 'Where is literature now? Where is literature going? How might



literary criticism respond?' As Corby notes, such questions are inherently provisional: 'When your focus is the contemporary, you're wedded to a kind of ignorance. You don't have the retrospective view; you're always out of joint with your own time.'

AN OPEN GROUND

With such a programme, a level of faith is involved, and Callus and Corby are grateful to Edinburgh University Press for their belief in the project. When *CounterText* initially started in 2015, Corby and Callus had more questions than answers, and yet the early work tended to assume the form of a hypothesis that, in its expression, almost took on the form of a manifesto. This was, perhaps, a consequence of the initial resistance to breaking from familiar and reassuring, if somewhat rigid, modes of critique towards an openness which increasingly characterises the journal. There was, after all, an idea of a 'countertextual' and of a 'post-literary', but what these terms were thought to mean then does not equate to what they may mean now. This body of knowledge is, necessarily, in flux: even more than any already established and recognised discipline within the space of literature. It means that trying to know the literary in the present (let alone any idea of its 'post' status) and developing appropriate, perhaps new, ways of thinking about it requires broad and open discussion.

Corby and Callus note that they 'wanted to develop [their] own thinking' with others, as any single initiative like *CounterText*'s would be lonely and limited. An attitude of openness towards like-minded scholarship and critical inquiry (and creativity) was necessary to help ensure consistent rigour. The balancing act presented here remains challenging to this day. Still, the worth and wealth of reciprocal exchange with scholars and writers at *CounterText*-led events at, among others, Durham University, the University of Cambridge, the American University of Paris, the University of Naples Parthenope, and the University of Wrocław have proved invaluable. Just recently, members of the editorial team travelled to Lancaster University for a symposium titled '*CounterText* at the Castle' that featured participation by a number of UK-based writers and scholars of so-called 'creative criticism', now an acknowledged area of literary studies. A similar event is due in the autumn at the University of Oxford. In the works as well is a special virtual issue of *CounterText*, compiling notable creative pieces published across the journal's 32 issues to date. These two cases perhaps highlight the hallmark qualities which make *CounterText* '*CounterText*' – a double C, if you will, of creativity and collaboration.

Callus and Corby close by noting the tremendous privilege this undertaking has been for them – to edit, to communicate, to engage very deeply with emerging literary and critical material hosted in *CounterText*. They are clear-sighted about the responsibilities that come with the role, but remain excited about what is revealed about contemporary literary and critical practice as it manifests itself in the journal. T

A Race Against Time: Conserving The Argotti Nymphaeum

Author: **Erika Puglisevich**

*Deep within the tranquil **Argotti Botanic Gardens & Resource Centre** in Floriana, a unique piece of Maltese history is in a quiet but desperate battle for survival. The 18th-century monumental structure located within the gardens, known as the **Nymphaeum**, is fading. The journey of this project highlights the story of a dedicated team racing against time and the immense challenges of preserving our heritage.*

External view of the Nymphaeum
Photo by James Moffett

Despite our size, we Maltese take pride in the rich history, vibrant culture and priceless heritage that surrounds us. Yet, beneath the veneer of Malta's timeless beauty, many of our most precious sites are silently battling the relentless march of time, often exacerbated by a complex web of conservation challenges. The ongoing efforts to restore the 18th-century Nymphaeum within the Argotti Botanic Gardens & Resource Centre in Floriana serve as a poignant case study, shedding light on the systemic issues that plague heritage conservation, from securing adequate funding and fostering public engagement to the sheer race against irreversible decay.

At the heart of this monumental effort is UM's Department of Conservation and Built Heritage, led by Head of Department Prof. JoAnn Cassar. The conservation project is primarily spearheaded by Jennifer Porter. As both a professional wall paintings conservator and assistant lecturer at the same department, Porter's leadership is central to every facet of the work. Together with a team of other professional conservators, archaeologists, conservation architects, and engineers, they bring a wealth of knowledge and an unwavering passion to the site.

For years, the Department has involved its students in documenting and studying the Nymphaeum, providing an invaluable training ground and fostering a new generation of conservators. 'It's very exciting that so many young people have shown such an interest and involvement, and a wish to participate in its preservation,' says Cassar. However, the escalating crisis demanded a shift in strategy. Due to the project's increasing complexity and the demanding timeline, the team came to the realisation that professional conservators and substantial funding were essential.

A MONUMENT IN PERIL: THE STRUGGLE FOR PRESERVATION

Complete with water features and an elaborate mosaic decoration of coral, shells, pebbles, and volcanic rock, the Nymphaeum once served as a serene retreat within the Argotti Gardens. Its uniqueness lies not only in its rich mosaic decorations but in the fact that it remains within its original 18th-century garden context – a rare survivor from the time of the Knights of St. John (read more about the Argotti Botanic Gardens & Resource Centre in **Issue 45, p. 44**).

Yet, its very environment has become its greatest threat. The porous local stone acts like a sponge, drawing moisture from the irrigated gardens and a nearby cistern. This moisture carries salts that crystallise within the stone and plaster, causing them to flake and powder, pushing the delicate mosaics off the surface. 'It is just a concentration of many, many of the problems we're seeing everywhere in Malta,' Cassar explains. 'We have very porous stone and plaster, we have salts everywhere, and we have a lot of moisture. These coming together is a very unhappy recipe.'

The situation at the Nymphaeum is not a sudden occurrence, but a build-up of existing problems in tandem with well-intentioned but misguided conservation practices from the past. The struggle to secure funding further compounded the delay, a common hurdle in the world of heritage preservation where the quiet, slow-motion crisis of decay often fails to capture the urgency of the situation. It was only through the persistent efforts of the Department and the sponsorship of the Malta Tourism Authority (MTA) obtained through the Research, Innovation and Development Trust (RIDT) that the necessary funds were secured to begin the hands-on conservation work by Porter and her team of Research Support Officers, Michel Salameh, Eleonora Genova, and Nathalie Debono. Additional contributions came from colleagues within the Department, including Dr Roberta De Angelis, Prof. Reuben Grima, and Dr Shirley Cefai, as well as

Interior details showing elaborate mosaic decoration composed of coral, shells, pebbles, and volcanic rock. *Photos courtesy of Jennifer Porter*

Prof. Spiridione Buhagiar (Department of Civil & Structural Engineering). Vital support has also been provided by the Restoration and Preservation Department of the Ministry for Culture, Lands and Local Government.

ALL HANDS ON DECK

With the clock ticking, the team's approach is a careful blend of scientific analysis and creative problem-solving. The primary goal is not to restore the Nymphaeum to a pristine, 'as-new' condition, but to stabilise it – to slow down the relentless decay and preserve to the best of the team's ability the authentic, historical fabric that remains.

The current phase involves meticulous testing and treatment design. The team is developing support systems to hold the fragile, overhanging mosaics located on the dome in place while they are treated. This allows the team to apply consolidants or grouts without the risk of the decorations falling.

One of the key techniques will be the use of sacrificial plasters. These are specific lime-based renders applied to the stone. These plasters are designed to be more porous and weaker than the historic stone and mosaic materials. They act as a sponge, drawing the damaging salts into themselves. Porter explains that 'what we're hoping for is that these will deteriorate preferentially and slow down the deterioration of the surrounding materials'. These plasters are not a permanent fix. They need to be part of a long-term management plan and may need to be replaced periodically.

This reality underscores a crucial message – conservation is not a one-time event, but an ongoing commitment. Education and awareness campaigns are vital to bridge this gap, but they too require resources and sustained effort, hence becoming another layer of challenge in the conservation process.

A GLIMPSE INTO THE PAST: THE VIRTUAL REALITY VISION

Given the fragility of the Nymphaeum, rebuilding the lost mosaics on the walls is not an option. It would be ethically questionable to invent designs and practically impossible to attach new materials to a surface that is inherently unstable. So, how can visitors appreciate the structure's original magnificence?

The answer lies in technology. The team is exploring the creation of a virtual reality experience. This innovative solution would allow visitors to put on a headset and see a meticulously researched, 3D digital reconstruction of the Nymphaeum as it likely appeared in the 18th century, or even in later periods, depending on the availability of documentary evidence. They could explore the vibrant colours and intricate patterns of the lost mosaics and even see the long-gone statue of Diana that once graced its fountain.

This approach brilliantly balances the need to preserve the site's authenticity with the desire to create an engaging and educational visitor experience, thereby offering a window into the past without compromising the integrity of the original monument.

A LESSON OF CAUTION

The conservation of the Argotti Nymphaeum is more than just the story of one structure. It is a testament to the people who dedicate their lives to protecting our heritage. It is a powerful lesson in having realistic expectations of conservation and a reminder that these treasures, once lost, are gone forever. The story of the Nymphaeum is a microcosm of the broader challenges faced by heritage professionals. It serves as a crucial reminder that, for countless other historical treasures, the clock is still ticking, and without a more robust, proactive, and publicly supported conservation framework, many more of our heritage assets will remain at risk, taking with them valuable fragments of our shared human story. The Argotti Nymphaeum is but one example of the need to shift the discourse of how we value, fund, and ultimately try to preserve the irreplaceable legacies of our past.

Sound Solutions: Harnessing Ultrasound Technology in the Fight Against Foodborne Illnesses

Author: **Courtney Ekezie**

In recent years, there has been an increasing promotion of healthy lifestyles consisting of more fruits, vegetables and unprocessed foods. Such foods offer a bounty of micro and macro nutrients, yet they may also carry harmful pathogens. At the University of Malta, ***Dr Foteini Pavli*** *and her team are pushing boundaries and exploring how fresh produce can be decontaminated using ultrasound technology.*

Dr Foteini Pavli, lecturer and researcher at UM's Department of Food Science, Nutrition and Dietetics, has specialised in food processing and probiotic bacteria throughout her academic career. This specialisation led her to explore innovative, non-thermal methods for food decontamination – most recently, through the 'Ultrasound Technology Combined with Other Disinfection Methods to Enhance Food Safety', or the UltraTech project.

How does ultrasound manage to decontaminate food? Esther Okafor, a Ph.D. student and the lead research support officer for this project, explains that ultrasound works through sound waves passing through a liquid medium. This creates changing pressure levels in the medium, which generates microbubbles. These microbubbles go through an alternating cycle of continuous expansion and compression. The burst of these microbubbles creates pores in a microbial cell membrane, which disrupts and leaks the cellular contents of the microorganism, generates radicals that damage the microbial DNA, and increases the temperature of the suspension medium, thereby contributing to cell permeability. The cumulative effect of all these factors could ultimately lead to microbial cell death.

There are multiple effective food decontamination methods. When it comes to ready-to-eat fresh produce disinfection, chlorine has been used and proven effective. Yet, if current methods are effective, why bother with ultrasound? The answer lies in sustainability.

Okafor explains that while chlorine is a powerful disinfectant for sanitising fresh produce, it leaves behind chemical residues which have raised concerns for 21st century consumers who demand for minimally processed food with little to no chemicals additives.

The UltraTech Team. From left to right: Raquel Camilleri, Dr Foteini Pavli and Esther Okafor.
Photo by Kristov Scicluna

Other methods of decontamination, such as heat-based methods, reduce the vitamin and possibly the minera content of the produce. Conversely, ultrasound does not produce any residues and, as a non-thermal technology, minimises the loss of nutritional content – a double win.

BEYOND THE SURFACE

Okafor explains that 'fruits and vegetables are often consumed raw, and when we look at food recalls over the years, many involve these fresh products.' She also points out that one must consider vulnerable populations, such as the elderly, who favour more convenient and healthier food to consume. Such populations are at an even greater risk of having complications in case of food poisoning due to various comorbidities and weaker immune systems, highlighting the importance of food decontamination.

'The barriers to food safety are multifaceted,' Okafor explains. One such barrier is the complex global food supply system. For instance, food imports from countries with weaker food safety systems could have a negative impact on a country with a stronger food safety system during recalls or food-borne outbreaks.

Okafor also adds that fresh produce is sometimes contaminated not solely by one microorganism but rather by a plethora of microorganisms. 'These organisms are not just waiting around to get killed,' Okafor jokingly remarks. They are constantly evolving, making it increasingly difficult to eliminate them through their survival systems.

Pavli comments that climate change also has a role in food safety, due to its adverse effects on crop growth and storage conditions. Pavli remarks that Europe has a strong food safety culture, and the aim of the UltraTech project is not to alarm people about consuming raw fresh produce but rather to acknowledge the possibility of contaminated food and address the need to search for more effective and sustainable decontamination methods.

AN INTERDISCIPLINARY LAYER

Alongside Pavli and Okafor, Raquel Camilleri, a master's student at UM, brings an interesting dynamic to the mix. Having a B.Sc. in Applied Food and Nutritional Sciences and a Postgraduate Diploma in Dietetics, she explains that nutrition and food science are closely related. 'Many vulnerable groups, such as the elderly, cancer patients and children, benefit from safer, less processed foods. I meet multiple patients seeking minimally processed options,' she remarks.

Unlike other decontamination methods, such as thermal pasteurisation or chemical disinfectants, ultrasound used in this context is generally not considered a traditional food processing treatment. This is because ultrasound applied for microbial inactivation on fresh produce acts as a mild, non-thermal intervention targeting surface microbes without fundamentally altering the food's physical or

Top and bottom left: Ultrasound treatment on fresh-cut kale.

Bottom right: Assessing the colour changes of a cherry tomato after ultrasound treatment.

Photos by Kristov Scicluna

chemical properties, such as texture, flavour, or nutritional content. Using novel technologies like ultrasound could especially appeal to vulnerable populations, if proven effective.

Furthermore, this research perfectly exemplifies integration between food science, nutrition, and dietetics. UM's Department of Food Science, Nutrition and Dietetics uniquely offers a 4-year professional undergraduate degree, where students can focus on a specific stream in their fourth year of studies. Bringing together all these disciplines offers a fresh and innovative approach, encouraging collaboration across fields to better connect research with everyday health and wellness. Camilleri says that at the end of the day, the goal of the researchers, despite their specific background, is common – to produce food that is safe, healthy and sustainable.

MULTI-HURDLE APPROACHES (AND MORE HURDLES AHEAD)

On its own, ultrasound is not sufficient as a means of decontamination to produce safe food that meets the industrial benchmark. Okafor explains that to boost effectiveness, combination strategies, called multi-hurdle approaches, are used. For example, ultrasound may be combined with natural antimicrobial compounds (like essential oils, such as rosemary and oregano) or with probiotic bacteria. These bacteria are a method of biopreservation, using beneficial microbes or their metabolites to extend shelf life and enhance food safety. These combinations aim to maximise safety while maintaining quality.

Existing studies have shown that essential oils used together with ultrasound provide comparable inactivation rates to those achieved by using chlorine. While results in the literature vary, the clear benefit is that essential oils leave behind no toxic chemical residues, making this approach far more environmentally friendly.

Pavli notes that currently, the main barriers to the application of ultrasound technologies are inconsistent microbial reductions and scalability issues at the industrial scale. Okafor added further that 'even if something doesn't work, it helps future researchers. It shows them what's already been tested'.

WHAT IS NEXT?

Nonetheless, other barriers still remain. Maintaining the desired taste, texture, and appearance of food is paramount. Small sensory changes – like softened texture or discolouration – can turn consumers away. With limited studies so far on fresh produce, the UltraTech research team is experimenting to optimise ultrasound settings and reduce negative changes. Pavli points out that through the synergistic action of technologies, the research project's aim is to use milder ultrasound treatments and avoid adverse changes.

Pavli explains that more research is needed to apply the technique to different products and study its effects on texture and sensory qualities. She goes on further to say that ultrasound will likely see developments in the food industry, especially for purposes like fermentation, homogenisation, and extraction. With regards to decontamination, more research, time, and funding are needed before it is commercially viable.

Ultimately, Pavli explains that the aim of this research goes beyond simply studying food decontamination. The team's vision is to develop smarter, cleaner technologies that safeguard both human health and the environment. UltraTech serves as a reminder that when science is guided by sustainability, it can deliver sound solutions that benefit generations to come.

Project UltraTech – 'Ultrasound Technology Combined with Other Disinfection Methods to Enhance Food Safety' is financed by Xjenza Malta through the FUSION: R&I Research Excellence Programme.

Science on Wheels: How EMBL's Advanced Mobile Lab Powered Research on Campus

Author: **Erika Puglisevich**

In March 2025, students and staff at the University of Malta noticed something unusual parked in Car Park 6 – a high-tech truck that resembled a spaceship more than a vehicle. This was the Advanced Mobile Laboratory of the European Molecular Biology Laboratory (EMBL). From cutting-edge technology to new international collaborations, EMBL's Advanced Mobile Lab brought with it more than just microscopes and instruments – it brought a glimpse of the future of collaborative science.

The European Molecular Biology Laboratory (EMBL) is Europe's life sciences laboratory with headquarters in Heidelberg, Germany, and five further sites across Europe. It is known for its cutting-edge research, provision of experimental and data services, and training in the life sciences. The Traversing European Coastlines (TREC) expedition was born from EMBL's ambition to better understand the complex and dynamic ecosystems along Europe's coastlines. TREC saw the institute, together with its many partners, study life in the context of European coastlines, with three clear and pressing core scientific aims in mind:

- To unveil the biodiversity on land and at sea which is not readily visible, while also understanding how environmental changes affect the interactions within and between ecosystems.
- To study how humans and the planet interact.
- To highlight the importance of collaboration, scientific training, and public engagement.

THE SOLUTION: A MOBILE LABORATORY

For this endeavour, EMBL developed a one-of-a-kind mobile lab. Dr Niko Leisch, the head of the mobile laboratory services, describes the Advanced Mobile Lab (AML) as a self-contained, high-tech research facility on wheels. This travelling laboratory ensures that every sample can be processed and analysed shortly after sampling, directly at the collection site. By bringing standardised equipment and expert personnel to each coastal location, this approach helps to eliminate inconsistencies that arise from using different methods and labs in different countries.

The AML is not a stopgap. It is a full-scale, cutting-edge research centre. Inside, science happens in real time:

- A **wet lab** handles initial sample processing the moment they are collected.
- A **large-particle sorter** uses laser imaging to gently isolate individual organisms without damaging delicate microbial communities.
- **Confocal microscopes** produce high-resolution, 3D time-lapse images to observe behaviour and interactions.
- For the highest-resolution analysis, samples can be cryopreserved on-site for **electron microscopy** back at EMBL's fixed facilities.

This ability to act fast is what sets the AML apart. As Leisch explains, 'Once you remove organisms from their environment, they start to

change.' Timing is everything. Whether it's observing symbiotic behaviour, assessing how microbes break down pollutants, or simply documenting what species are present, the opportunity to bring the lab close to where samples are being taken allows researchers to preserve the biological integrity of each sample.

The lab not only ensures high-quality, consistent data across all sampling sites, but it also extends EMBL's capabilities to scientists and students in every member state it visits, creating a bridge between local communities and world-class science.

THE JOURNEY TO MALTA

Preparations for the AML's visit to Malta took shape through the dedication of Prof. Melissa Marie Formosa and Prof. Jean Paul Ebejer, working in line with the vision of Parliamentary Secretary Hon. Keith Azzopardi Tanti to bring this state-of-the-art facility to Malta and strengthen the nation's research landscape. The process was set in motion with a visit to EMBL's Headquarters in Heidelberg in early 2024, where Formosa was joined by Hon. Azzopardi Tanti and Perit Karmenu Vella, former EU Commissioner for Environment, Maritime Affairs and Fisheries.

This visit set the wheels in motion for the AML's arrival at the UM Campus. With 70,000 samples having already been collected from coastlines across Europe by the end of summer 2024, the lab's visit was eagerly anticipated. With Rector Prof. Alfred Vella's support, EMBL was granted space on campus, giving UM researchers unprecedented access to top-tier scientific tools and expertise. Equipment previously available only in major European centres was now within reach of local scientists and students.

WHY THE BUZZ?

The arrival of the EMBL's AML in Malta brought an immediate and transformative boost to the local scientific community. Researchers and students had direct access to advanced instruments and the necessary expertise – such as large-particle sorters, confocal microscopes, and cryo-preparation for electron microscopy. This meant samples could be analysed within hours of collection, using gentle, non-invasive techniques that preserved the integrity of living organisms.

Offering the opportunity for skill development and training through a one-week course which blended theory with hands-on lab experience, academics and students alike had the opportunity for training with state-of-the-art equipment and techniques.

As part of the TREC mission, EMBL's Advanced Mobile Laboratory

Top: Hands-on research in action – Amy Marie Vella, a M.Sc. student from UM's Department of Applied Biomedical Science working alongside EMBL's mobile team.

Middle: A glimpse into the state-of-the-art EMBL AML.

Bottom: Diverse leaves from across Malta, ready for testing.

Photos by Kristov Scicluna

teamed up with the Department of Geosciences to study marine biodiversity along Malta's coasts.

Reaching out to the broader community, sixth-form students were engaged and given a tour of the facility, while university academics explored new avenues for collaboration during dedicated open days. Ongoing UM projects gained momentum, with researchers completing work that would have otherwise required them to travel abroad.

More importantly, the lab became a bridge to EMBL's broader network, paving the way for long-term partnerships and enabling Maltese students and scientists to connect with world-class research hubs across Europe. Researchers and students can now build on this experience by conducting further experiments at EMBL's sites in Barcelona, Grenoble, Hamburg, Heidelberg, Hinxton near Cambridge, and Rome, or other locations, depending on their research focus.

WHAT COMES NEXT?

The AML continues to provide its services to researchers across Europe, with one of its latest stops having been in Vigo, Spain. There, researchers

EMBL's AML team (From Left: Dr Niko Leisch, Paulina Cherek, Dr Tina Wiegand, Dr Michael Bonadonna), accompanied by Malta's delegates for EMBL, Prof. Melissa M Formosa and Prof. Jean Paul Ebejer.
Photos by James Moffett

utilised a mesocosm facility designed to simulate large volumes of water under controlled environmental conditions. This allowed the EMBL team to transfer their data to study how ecosystems respond to changes under controlled conditions. This is all in the hope of understanding how cells change and to answer questions such as: How does a marine heatwave impact fundamental cellular processes like photosynthesis? How do such heatwaves impact the community composition, particularly in the context of climate change?

Although the AML is only one part of EMBL's vast portfolio, its impact is significant. As Leisch puts it, the lab-on-wheels helped 'make EMBL tangible'. Instead of imagining a faraway lab in Germany, students and scientists in Malta could walk into one, ask questions, and envision a future involving EMBL's core services.

Formosa and Ebejer see the lab's visit as a starting point, not an endpoint. The aim now is to build a sustained pipeline of collaboration: UM researchers may send samples to EMBL for specialised analysis, or travel to its campuses for advanced training. With the option of training, one can have the chance to work independently with the equipment. In other cases, especially with highly sensitive instruments, closer partnerships with EMBL staff may be essential, further deepening international collaboration.

Exposure to EMBL's tools and protocols can inspire the development of new capabilities locally, potentially transforming Malta's research infrastructure. EMBL is committed to open-access data, allowing local researchers to contribute and benefit from one of the largest scientific datasets in the world. The mobile lab initiative has opened new doors, but the real opportunity lies in embedding Malta deeper into the European scientific landscape.

A LASTING IMPRESSION

The EMBL AML has now rolled on to its next destination, but its visit to our islands has left more than tire tracks. It has sparked curiosity, opened opportunities, and built bridges between local researchers and one of Europe's top scientific institutions.

As Leisch said, 'It's been fantastic to work here with the colleagues at the University of Malta and with the students. Their excitement gives us a lot of energy.' That mutual inspiration may be the most valuable outcome of all. T

EMBL's AML visit to Malta was made possible through the financial support of the Ministry of Education and the Parliamentary Secretary for Youths, Research and Innovation Hon. Azzopardi Tanti, the Pro-Rector for Research and Knowledge Transfer Prof. Ing. Simon Fabri for his academic guidance and support, the Marketing, Communications and Alumni Office for coordinating and assisting with outreach and dissemination activities, the Office for Human Resources Management and Development for assisting with the organisational aspects of the training course, the Centre for Molecular Medicine and Biobanking for their assistance with laboratory-related matters, and the Estates, Facilities and Capital Development Directorate for their invaluable assistance with the technical and logistical arrangements of the AML.

Learn more: embl.org/about/info/trec

Public Health Without Borders: Insights from the Global Health Initiatives Summit

Author: **Andrea Cuschieri**

Ask ten people to define public health, and you might get ten different answers. Some think of hospitals and vaccinations; others imagine health inspectors or government agencies. But public health is much broader and quieter than many realise. It's clean drinking water, safe food, mental health services, and infrastructure that allows everyone, from toddlers to the elderly, to move through their communities with dignity.

At its core, public health is about protecting the health of the population, preventing illness before it starts, and ensuring no one is left behind when it comes to care. That mission has never been more urgent. The COVID-19 crisis didn't just expose weaknesses in our health systems – it highlighted how deeply interconnected our lives have become. Viruses ignore borders. So must our solutions.

That's why an event like the inaugural Global Health Initiatives Summit, organised by the University of Malta's Department of Public Health and the University of Central Florida's College of Medicine, is so important. Held in Malta between 31st July and 1st August, the summit was not just another conference but a gathering of like-minded professionals, all focused on a single, urgent mission: using data and collaboration to build a healthier future for everyone.

For researchers, students, and policy professionals, the summit offered a window into the cutting edge of health innovation and teamwork. It showed where the field is heading and how we might get there, spotlighting the concrete steps being taken today to shape a better tomorrow.

A SHARED GLOBAL CHALLENGE

The summit's central idea was simple but powerful: health problems do not stop at national borders. From climate-driven disease outbreaks to global pandemics, the world is facing health

crises that are both widespread and deeply interconnected. The COVID-19 pandemic served as a massive wake-up call, demonstrating just how essential coordinated, data-driven approaches to public health truly are.

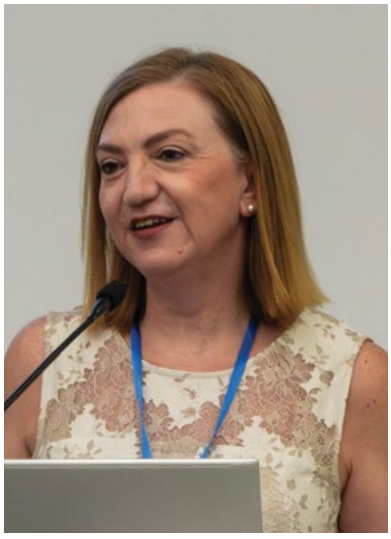
The summit's packed schedule, featuring scientific talks and panel discussions, made it clear that attendees recognised this reality. These weren't just discussions for discussion's sake; they were strategy sessions, designed to move public health from theory into action.

THE DATA DILEMMA

A central theme that emerged throughout the summit was the role of data in shaping effective public health responses. Data is power, but only when used wisely, ethically, and equitably. Keynote speaker Dr Natasha Azzopardi-Muscat, Director at WHO/Europe, framed it perfectly: 'Evidence requires data.'

Without reliable data, public health becomes reactive rather than proactive. We need data to track disease outbreaks, anticipate health trends, inform policy decisions, and allocate resources effectively. It also underpins the artificial intelligence tools increasingly used to model health patterns and deliver predictive care.

However, many speakers stressed that data is not always neutral. It can be incomplete, biased, or collected in ways that exclude vulnerable populations. These concerns become even more pressing when data is used to train AI systems, which risk perpetuating and amplifying existing inequalities. One member of the audience raised a crucial point: 'AI is dependent on data, which can be



Dr Natasha Azzopardi-Muscat
Photo by James Moffett

Dr Martin Seychell
Photo by James Moffett

biased, so some of what AI produces can be discriminatory.' This is a serious concern, highlighting that while data can illuminate the way forward, it can also mislead if not gathered and interpreted with care. The summit offered a powerful reminder that transparency, inclusivity, and ethical oversight are not optional extras. Rather, they are fundamental requirements in the digital age of public health.

HEALTH IS PERSONAL AND POLITICAL

While the science of public health often deals in trends and numbers, the summit maintained a strong focus on the people behind the data. Keynote speaker Dr Martin Seychell, Deputy Director-General DG INTPA, European Commission, called for a shift towards a 'life-course approach' – a public health model that supports individuals from birth through old age.

This approach goes beyond hospitals and emergency care. It requires long-term investment in systems that promote mental health, healthy ageing, education, and universal access to quality care. One vivid example came from Malta itself. In many towns, uneven or narrow pavements make it difficult for older adults to walk safely. That might not sound like a health issue, but it is since infrastructure is part of public health too.

Another pressing concern raised was mental health, with a striking 10% of Malta's population affected by related conditions. Despite this, access to effective care remains limited. The summit spotlighted the urgent need for low-intensity, community-based interventions that are both accessible and destigmatised. These local examples underscored a broader truth: while global strategies are essential, they must be grounded in the lived realities of the communities they aim to serve.

LISTENING AS A PUBLIC HEALTH TOOL

One of the most resonant conversations at the summit focused on trust and how fragile it can be. During the COVID-19 pandemic, many people felt that vaccine communication was mishandled. In an effort to boost uptake, health officials often oversold benefits without clearly communicating potential risks or uncertainties. The result is public confusion, vaccine hesitancy, and a growing distrust in scientists and institutions. Several speakers emphasised that restoring public trust means going beyond statistics and charts. As Dr Cristina Micallef, Consultant in Public Health, put it: 'One size doesn't fit all. We need to get out of our offices and talk to people.' It's a lesson public health professionals cannot afford to ignore. Policies and programmes that look good on paper often fall short if they fail to reflect real community needs. Community engagement, transparency, and humility are no longer optional – they are essential tools in the public health toolkit.

COLLABORATION IS THE CURE

Perhaps the clearest takeaway from the Global Health Initiatives Summit

A selection of photos from the inaugural Global Health Initiatives Summit.
Photos by James Moffett

was this: no one can solve these problems alone. Whether the issue is pandemic preparedness, mental health, misinformation, or climate-linked health risks, the challenges ahead are complex and global. They demand solutions that are collaborative, cross-disciplinary, and inclusive.

The summit didn't end with a grand finale, but with a shared commitment. Participants left with new partnerships, joint research goals, and a renewed sense of responsibility, not just to their institutions, but to the communities and individuals who depend on their work. It was clear from the discussion that the end of the conference was not a conclusion, but the beginning of the next chapter in global public health.

A QUIET REVOLUTION IN PUBLIC HEALTH

Public health doesn't often make headlines. But when done well, it prevents the kinds of crises that do. The Global Health Initiatives Summit served as a timely reminder that public health is about far more than disease control. It's about systems that listen, technologies that serve fairly, policies that adapt, and, above all, people who care. It's the quiet, behind-the-scenes work that keeps societies functioning: clean water, safe streets, accessible care, and honest conversations.

This is a moment of both urgency and opportunity. With renewed energy, global cooperation, and a deep respect for the communities we serve, the future of public health looks not just possible, but also hopeful.

It Takes Many to Tango: What Does It Take to Turn Science into Change?

Author: **Antónia Ribeiro**

*A prosperous country is a country that strongly invests in research and innovation. In Malta, **Xjenza Malta** is the governmental agency responsible for ensuring that local and international research and innovation funds are appropriately allocated to support the country's development.* **THINK** *set out to learn more about the agency, its way of working, and how it helps researchers, institutions, and businesses to invest in research.*

Research and innovation are fundamental for a country's 'competitiveness, prosperity, and societal resilience' (European Commission, Directorate-General for Research and Innovation, 2024). Strategic plans enable governments and funding bodies to prioritise fields of research and align national or organisational priorities towards a common goal. Through these plans, research and innovation (R&I) funding programmes are created to channel resources towards the agents that need it. It is through these mechanisms that research labs, universities, institutes, and companies can fund their work and respond to society's questions and needs.

According to the European Innovation Scoreboard, which compares the R&I performance of European countries, Malta is considered a 'moderate innovator', ranking 21st out of 39 (in 2024). Malta's direct and indirect government support of R&I at the business level and R&I expenditure in the public sector are listed as relatively weak, indicating a need for further investment and regulation.

THE MALTESE CASE

Locally, Xjenza Malta (formerly known as MCST, the Malta Council for Science and Technology) serves as the government agency coordinating the country's efforts towards scientific research, technological innovation, and science communication. Working in collaboration with national and international entities, the agency manages the public money invested in R&I and space research and technology. These funds are directed towards thematic research programmes that align with the agency's and the European Commission's values, including the promotion of gender equality and research security. The latter ensures that the knowledge developed at the national level is safeguarded and that potential threats to economic and national security are mitigated.

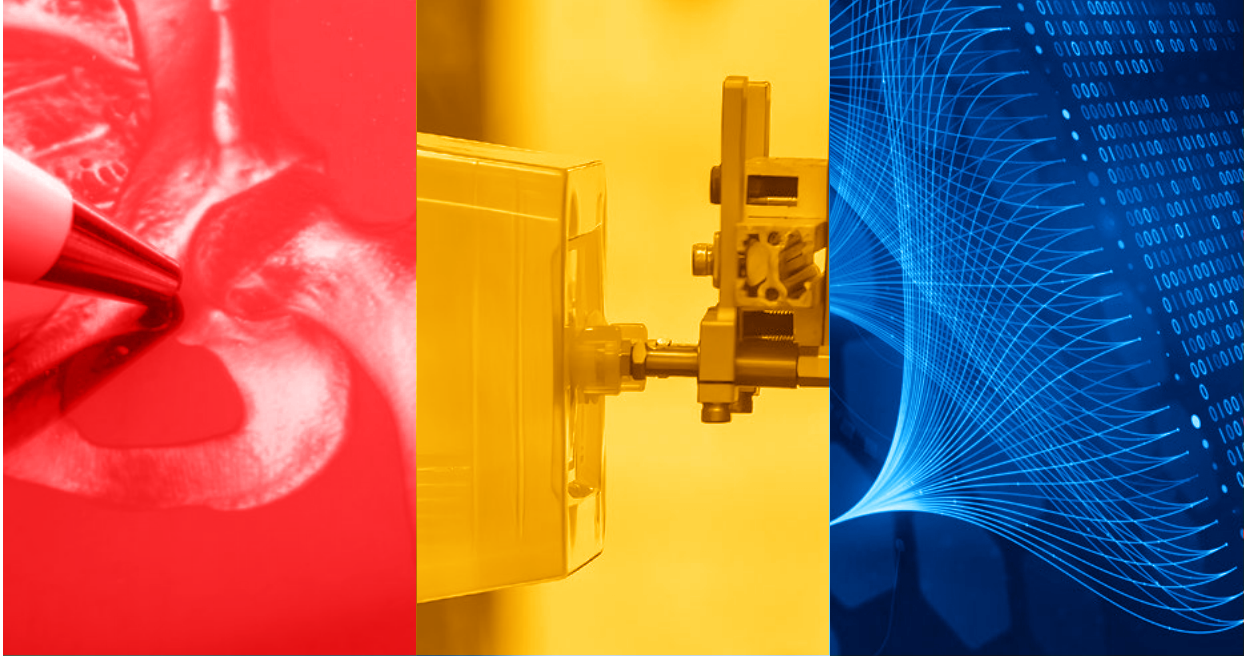
To achieve these ambitious goals, Xjenza Malta operates through several specialised units:

- Policy and Strategy Unit – Acts

as a liaison within Malta's R&I ecosystem, fostering connections between the Maltese government, national stakeholders, including research entities, and European bodies. It facilitates access to European funding for research and plays a leading role in the design, coordination and implementation of the National R&I Strategic Plan.

- R&I Unit – Manages the national funding streams which are designed to support the implementation of both the National R&I Strategic Plan and the National R&I Smart Specialisation Strategy. The funding streams include: FUSION, which supports local R&I to develop market-ready solutions; Thematic Programmes, which target specific market needs; and the Research Networking Scheme, which facilitates international collaborations and supports researchers in publishing their results.
- Internationalisation Unit – Develops, launches, and manages transnational R&I funding initiatives to strengthen international collaboration, including bilateral and multilateral funding schemes such as the SINO-Malta Fund, and Horizon Europe co-funded partnerships. The Unit also offers networking and capacity-building support to help local researchers establish a stronger presence in the global research community.
- Framework Programme Unit – Hosts the National Contact Points (NCPs) and Programme Committee delegates for the EU Framework Programmes for Research and Innovation, thereby supporting Malta's participation in these initiatives.

In 2023, Xjenza Malta, together with the Ministry for Education, Sport, Youth, Research and Innovation, adopted Malta's National Research and Innovation Strategic Plan for 2023-2027. According to Xjenza, this strategy 'lays the foundations for a revitalised and well-governed national R&I system built on short- and medium-term measures, and a long-term vision'. In parallel, Xjenza is also expanding its work in space research. To support the growing space sector locally, and back



the Malta National Space Strategy, the agency is drafting new legislation, fostering international collaboration, and supporting R&I in the field.

MALTA'S UNIQUE OPPORTUNITIES

Malta's population boom, the increasing reliance on private means of transport, and the focus on the green transition are the current local challenges. According to Xjenza Malta, these imminent shifts in our society's fabric brought on by these changes are key opportunities for local R&I. Science-driven decisions, new technologies, and citizen participation can enable a better future if R&I is 'mainstreamed' and embedded into public and private culture, promoting science literacy and new funding programmes.

The University of Malta is no stranger to Xjenza Malta and its R&I supporting initiatives. For years, the agency has provided numerous funding opportunities, often resulting in exciting, one-of-a-kind projects.

One notable example highlighted by the Xjenza team is MaltaHip. Between 2016 and 2020, this project (featured in **THINK**, **Issue 47**), spearheaded by Prof. Pierre Schembri-Wismayer, received €200,000 from the Xjenza Malta FUSION Programme to develop a total hip joint replacement, featuring a patented triple-cylinder implant that showed superior durability. Developed by the UM team in collaboration with local industrial partners, the project later evolved into a spinout company, Garland Surgical Ltd., which attracted further investment from Malta Enterprise and additional seed funding. The company is now advancing regulatory approvals and clinical trials, with the potential to significantly improve global hip replacement outcomes.

Another example mentioned by the agency is the DataDear project. The project received €161,000 through the Xjenza Malta FUSION programme to create a FinTech tool that integrates accounting platforms via API, thereby streamlining global financial workflows. Spearheaded by Neville Micallef of Scope Solutions, with the University as partner, the initiative resulted in a widely adopted product used by more than 5,000 professionals worldwide. This example illustrates how Malta's targeted R&I funding can effectively nurture the tech sector by transforming local innovation into scalable international solutions.

The team at Xjenza also discussed the VacuUM (Seal-less Mould Vacuum System) project. Funded by the Xjenza Malta FUSION programme, the project, led by Prof. Arif Rochman, developed a seal-less vacuum system that enhances efficiency and reduces maintenance in manufacturing. Conducted in collaboration with Toly Products, the project produced a commercially viable solution that reflects the success of industry–academia partnerships in driving innovation with practical applications.

A PATH TOWARDS HORIZON EUROPE FUNDING

Xjenza Malta acts as the contact point between the local government and the European Commission, representing Malta in the EU Framework Programmes for R&I. The European Commission's EU Framework Programmes ensure the development of science and technology and the implementation of R&I policies.

As priorities evolve, so do the topics eligible for funding. The current Framework Programme (2021–2027) is called Horizon Europe and highlights the European Commission's commitment to delivering 'innovative solutions to green, digital, health and innovation challenges' through its funding schemes. The Horizon Europe Support Schemes 'incentivise the local participation and increase the chance of success within the Horizon Europe Programme,' Xjenza

points out. The schemes provide financial assistance for networking and brokerage events, mentoring, and training to improve proposal quality and promote international collaboration.

Malta's participation in Horizon Europe is facilitated through Xjenza Malta's Framework Programme Unit, which guides Maltese researchers, stakeholders, academia, SMEs, and public bodies in accessing these EU funds for R&I. The unit's activities are divided into two specialised functions: acting as the National Contact Point, 'promoting and facilitating the local community's participation in the funding programme', and the Programme Committee, representing the national interests in the drafting process of the Horizon Europe Work Programmes.

'The Framework Programme, currently Horizon Europe, is the whole programme itself, while Work Programmes are the detailed implementation plans of the Framework Programme. They are usually adopted for a period of 2 years,' says Xjenza Malta. 'While these Work Programmes are developed by the European Commission with input from experts and advisory groups, the role of Xjenza's programme committee is to provide feedback and opinions on these before they are published. Work Programmes need to be approved by the Programme Committees.'

The Framework Programme Unit provides guidance throughout all stages of the grant process. During the application stage, it connects local stakeholders to specific Horizon Europe funding calls, organises information sessions for interested parties, helps entities to identify international and local partners for the proposal, and provides training in the application process. Additionally, it offers advice on proposals and during the projects' implementation, collects feedback to improve the drafting process for each programme and manages national support schemes. National support schemes, funded through Maltese government resources, are designed to enhance Malta's participation in Horizon Europe.

COMMUNICATION IS KEY

It is not enough to research. Communicating new findings and ensuring a scientific culture in a knowledge-based society is essential to creating communities with a thriving environment for innovation and progress. For this reason, Xjenza Malta hosts an annual R&I Expo to showcase concluded projects which they supported. This event raises awareness of ongoing local and transnational research activities and their outcomes, and provides researchers with the opportunity to present their work to the general public.

Through Esplora, a science centre with interactive exhibits located at the historical Villa Bighi in Kalkara, Xjenza Malta ensures that different generations value scientific literacy, curiosity, and lifelong learning, contributing to a future where R&I are integral in the design of industry, government and civil society.

Esplora also organises science shows and planetarium sessions. The centre is a hands-on environment that invites exploration of science, technology, engineering, arts and mathematics (STEAM), inspires lasting interest in careers in these fields, and complements the national school curriculum. The science centre also provides training and professional development for educators and helps schools to develop learning programmes adapted to different needs.

Through its efforts to develop effective policies, promote science communication, engage with local research, and support local actors to secure funding, it is clear that Xjenza Malta is at the forefront of national R&I support initiatives.

Further Reading

European Commission: Directorate-General for Research and Innovation. (2024). *European Innovation Scoreboard 2024*. https://projects.research-and-innovation.ec.europa.eu/en/statistics/performance-indicators/european-innovation-scoreboard/eis-2024#/eis

Learnapy: Future-Proofing the Maltese Language

Author: **James Moffett**

A homegrown digital platform is changing how children and newcomers learn Maltese – through smart tech, playful design, and a strong sense of purpose.

In a world increasingly shaped by global languages and digital convenience, smaller languages often struggle to keep up. Maltese, though rich in history and identity, faces its own set of modern challenges, especially when it comes to how it's taught and learned. Traditional methods don't always resonate with today's learners, and for many, especially children and newcomers to Malta, the tools just haven't been keeping pace. That's where a fresh approach – and a passionate local team – comes in.

Learnapy is a locally-developed learning app designed to make mastering the Maltese language not just easier, but genuinely enjoyable. It is aimed at two core audiences: primary school students building their literacy skills, and foreign workers looking to better integrate into Maltese life. Learnapy was awarded seed funding from the 2024 TAKEOFF Seed Fund Award (TOSFA), which is a joint initiative between the Ministry for the Economy, Enterprise and Strategic Projects (MEEP) and the University of Malta through the support of UM's Knowledge Transfer Office, the Centre for Entrepreneurship and Business Incubation, and the TAKEOFF Business Incubator.

A VISION BORN IN THE CLASSROOM

The idea for Learnapy came from a master's thesis. Roderick Cassar, the founder, who has spent over two decades working in tech and product design, noticed a gap in the language learning landscape. Maltese, while a national language, lacked engaging, modern tools for learners – particularly digital-native children and newcomers to the island. 'We wanted to bridge that gap with a digital-first platform that meets today's learning expectations while preserving the linguistic heritage of our country,' says Cassar.

Rather than reinvent the wheel, the team looked to build on existing educational methods. The Maltese national curriculum provides a foundation, but the delivery is being reimagined for the digital era. That means modules structured around clear learning objectives, but delivered through interactive games, adaptive

Roderick Cassar

feedback, and voice recognition features. Learnapy possesses the essence of traditional teaching, but with an upgraded approach.

ADAPTING TO EVERY LEARNER

From the first interaction, Learnapy gets personal. A quick placement test determines where a learner should start, and from there, the platform adjusts in real time. Struggling learners are supported with hints, visuals, and audio guides, while high performers are nudged toward more advanced challenges. The system doesn't just react – it learns from the learner. 'We've built Learnapy using a combination of cloud-native technologies, real-time analytics, and AI-powered modules,' says Cassar. This results in a high-quality app that teachers, parents, and guardians can feel confident about their kids using. Even pronunciation practice is smart, using voice recognition to help users sound things out correctly.

GAMES WITH A PURPOSE

Gamification, the process of applying elements of game-playing for better engagement and learning, is a big part of what makes Learnapy so attractive. The app includes features like streaks, experience points (XP), and gem rewards – but only for real learning. Gems are earned for consistent practice or high scores, and can be used to unlock new content, not just sparkly animations. The focus is on motivation, not distraction.

This approach has resonated well with its target audience. According to Cassar, children describe using Learnapy as 'fun' and 'like playing a game' – not because it replaces learning, but because it disguises effort in enjoyment. The reward system reinforces meaningful behaviours, keeping users engaged for the right reasons.

TWO AUDIENCES, ONE PLATFORM

At first glance, teaching six-year-olds and adult learners on the same app sounds like a recipe for confusion. But the Learnapy team tackled this head-on with a smart design strategy. The underlying tech is shared, but the user experience isn't. Upon sign-up, learners are guided through a personalised onboarding process tailored to their age, goals, and language background. 'Language is the bridge between people, community, and identity,' confirms Cassar.

For younger users, the platform offers curriculum-aligned lessons with colourful visuals and friendly audio cues. For adults, the focus shifts to practical usage – think conversations at work, reading signs, or navigating social situations. The tone and tempo adapt, but the quality remains consistent. The design team behind Learnapy saw common ground between these two user groups: both face a lack of modern, effective resources to learn Maltese. Children need a solid literacy foundation, whilst adults require a solid foothold in society. By designing for both, Learnapy maximises its reach without splitting its vision.

TECHNOLOGY CHALLENGES AND LANGUAGE QUIRKS

Behind the scenes, Learnapy had to overcome some major technical and linguistic hurdles. 'One of the toughest challenges was reconciling a flexible digital interface with the rigid structure of formal education,' says Cassar. Maltese isn't a language most commercial AI or Natural Language Processing (NLP) tools cater for. Its hybrid roots and unique structure meant the team had to custom-build parts of the app from scratch. They couldn't rely on existing frameworks designed for more widely spoken languages. Integrating into school environments and meeting national standards wasn't just about ticking boxes – it also meant working closely with educators, building relationships with institutions, and gaining the trust of stakeholders across the education ecosystem.

That trust is now paying off. Learnapy is currently running pilot programmes in Maltese schools and collaborating with academic experts,

including those from the Faculty of Education, the Centre for Entrepreneurship and Business Incubation, and the TAKEOFF Business Incubator at UM. These partnerships have helped shape the platform's curriculum, validate its pedagogy, and refine its assessment strategies.

MEASURING SUCCESS IN REAL TIME

Learnapy tracks how long users spend on each task, where they make mistakes, and how they move through different levels. This data doesn't just indicate what users are learning but reveals how they are learning.

Early signs are encouraging since learners are retaining vocabulary more effectively and using new words more confidently. Teachers report that the platform supports classroom teaching rather than replacing it, while parents appreciate having clear insight into their children's progress through user-friendly dashboards. For foreign workers, the app is proving to be more than a tool and acts as a confidence booster. Many describe feeling like they finally have a clear, manageable path to learning Maltese.

At its heart, Learnapy is about connection. In a bilingual country like Malta, English often takes centre stage in digital and commercial life, but that can leave Maltese at risk of being sidelined, especially for newcomers. By making Maltese more accessible, Learnapy is helping reinforce its value. For young learners, it builds literacy and cultural pride. For foreigners, it opens doors: socially, professionally, and emotionally. Language, after all, is a key to belonging.

RECOGNITION AND WHAT'S NEXT

In December 2024, Learnapy's efforts were formally recognised when it received an Intellectual Property Award from the Ministry of Commerce. It was a proud moment for a small team with a big vision.

Next up is a full public launch by the end of 2025, starting with Year 1 and Year 2 primary content. In addition, the roadmap includes full primary coverage, expanded content for adult learners, and new features to further personalise the learning journey. The team also acknowledges that many smaller languages face digital extinction simply because there aren't enough tools to support them. Learnapy may yet become a blueprint for how to preserve language through technology.

Ultimately, Learnapy represents a belief that even a small, dedicated team can have a big impact when it combines the right expertise with a shared sense of purpose. By using smart technology to protect a small but significant language, Learnapy is proving that innovation doesn't always have to be the loudest – it can have a strong impact by speaking to the heart of a culture.

Learnapy was awarded the Intellectual Property Award in December 2024
Photo courtesy of Roderick Cassar

Get in Touch with Learnapy

The Learnapy team is looking to name their mascot – reach out to share a cool name idea!

learnapy.com
roderick.cassar@learnapy.com

The Emptiness of Abstracted Reason

Author: **Jonathan Firbank**

We live amongst technological triumphs of human reason, culminating in AI – a tool that can reason in our place. But what elements of human experience are being neglected in this environment? What will become of AI that cannot comprehend those elements? ***Jonathan Firbank*** *has spoken to* ***Prof. Claude Mangion****, who heads UM's Philosophy department, about the danger of abstracted reason.*

Reason is the engine behind an always vast, and yet increasing, proportion of human experience. The communications revolution we have been born into – the latest of many – is the product of instrumental and deductive reasoning. In turn, emerging information and communications technology provides ample resources which further accelerate our deployment of reason. The speed is exponential. Transformative technologies are uploaded to billions of mobile devices before most know they exist.

And now, our accelerating capacity for reasoning has enabled the invention of something that may reason in our stead – generative artificial intelligence – a technology that creates new content by mimicking examples it is exposed to.

THE SPACE FOR SILENCE

But as Prof. Claude Mangion observes – reason is just one part of human existence. There is a universe of experience, inside and between us, that cannot be fully expressed with language. To give an example, Mangion argues that silence itself can be expressive. This, in turn, is a subject that he is pursuing in ever greater depth. He draws attention to the quiet, shared moments people can have with one another that feel deeper because they are not filtered through reductive chatter. As commercial technology absorbs more of our time, a rising issue presents itself. These quiet and shared moments are being de-prioritised alongside many other forms of non-verbal communication. We often nowadays only acknowledge experiences that are 'thought', rather than 'felt'. To quote Mangion directly, 'We are living in an age of verbosity, where talking, even for the sake of talking, seems to be the default mode of being.' We can only engage with information and communications tech via language. This is creating a growing 'imperative to communicate' at the expense of what we cannot verbalise.

Mangion's observations are not anecdotal cultural commentary. Overuse of information technology

Prof. Claude Mangion at the 2025 Philosofest.
Photo by Kristov Scicluna

creates a measurable inability to tolerate the silences that can harbour so much meaning. 'Screen time' in childhood has been found to correlate with poor emotional intelligence and non-verbal communication skills. To illustrate this problem, a child impaired in this way would find it harder to recognise if someone is upset, therefore making it more difficult to express empathy. They would also find it harder to recognise, through non-verbal cues, when they'd be amongst people who do not have their best interests at heart. Less nuanced skills are also being impacted. Mangion mentions a depreciation in the psychomotor abilities of younger children. Movement and dexterity that often draw on muscle memory, as opposed to reasoned thought, are degrading.

Even without communications technology, there has long been a trend towards an overvaluation of human reason. The lens through which all is expressed is, inherently, articulable. Inversely, the human experience outside reason is voiceless. It can only be incompletely communicated through language. Mangion argues that the Age of Enlightenment, rebounding from a time of deep superstition, overly glorified reason to the detriment of other aspects of human experience. Philosophy has since grown more nuanced and holistic, but the imperative to communicate, and its bias towards the verbally expressible, has only grown.

DEFERRING REASON TO AI

Today, each of us incubates artificial intelligence in our pockets. Like any fetal form, AI is crude, vulnerable, and hungry for energy. But it has already become something unprecedented. AI is not just a technology that expedites our ability to reason. It is a technology to which we can *defer* our ability to reason. That ability can atrophy if neglected. This degeneration of reason has begun with a bang. The world has been thrown into chaos by US policy written by economically-illiterate AI. And, in America's technological heartland, cults calling themselves 'rationalist' have begun to worship a prophesied AI singularity. Claiming that AI will consume our capacity to reason may also seem like a fantastical prophecy, but educators like Mangion are already observing its degenerative impact on students' work in the humanities, despite elevating other fields to new heights.

Each of these examples is currently defined by outcomes in popular discourse. AI has failed to achieve useful results – a tally which might be measured against those spaces where it is valuable. But even if our AI models always reasoned perfectly, deploying them has an ethical deficit. As Mangion states, emotion, willpower and other non-rational dispositions impact human decision-making. These can be just as important as reason – at

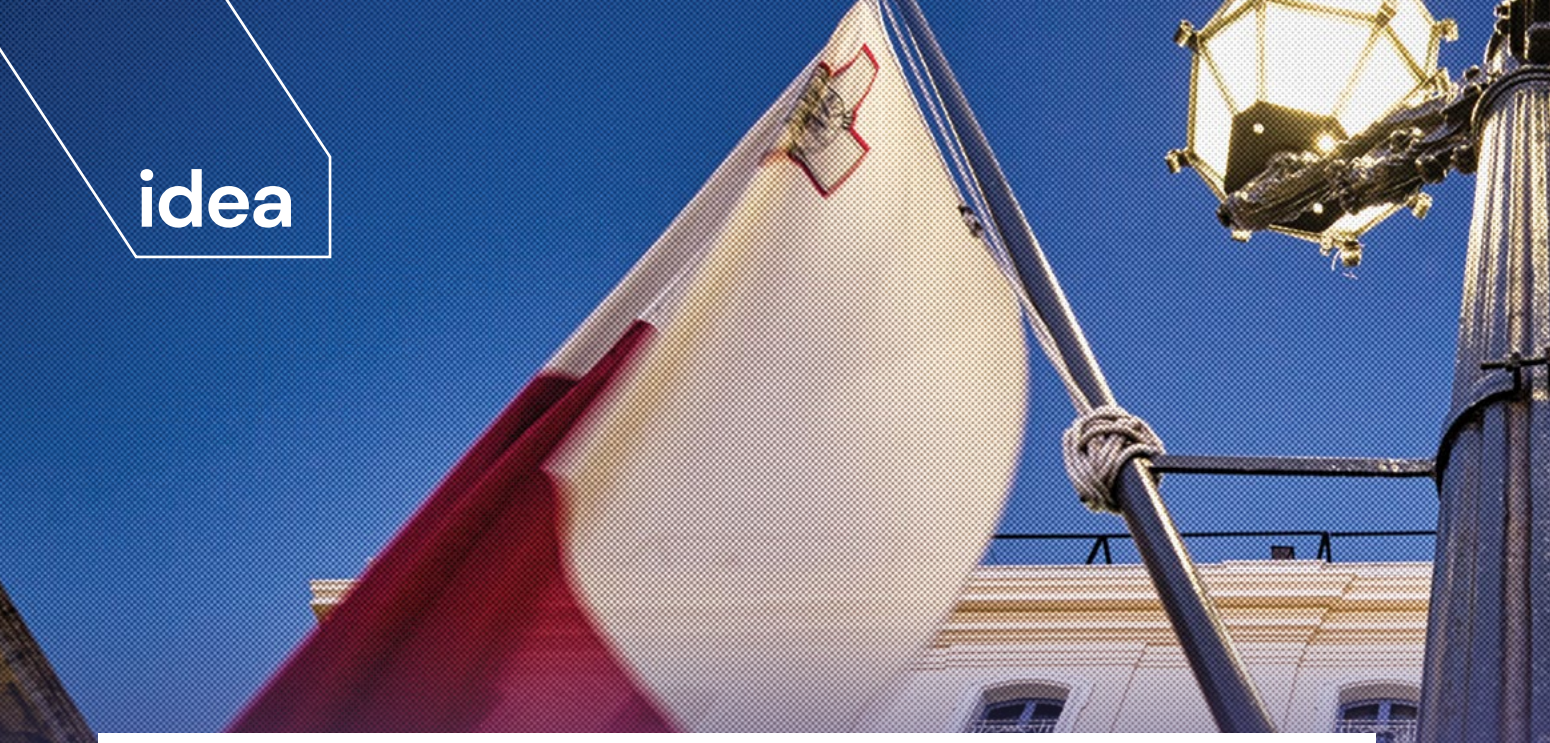
times, more so. AI cannot feel the guilt one might feel if they are cheating on a test, or creating a policy that will cause misery. AI would only concern itself with creating the policy, not its effect. Moments of moral clarity that change our world for the better are often based on emotion. An AI would not have shamed McCarthy, as Welch did during the Red Scare. Nor would an AI have responded to that moment, as the U.S. public did, with an emotional rejection of McCarthyism. An AI would not have seen the reason in standing in front of a tank, at Tiananmen Square. Nor would an AI have been able to experience the emotive context of that world-changing image. As proven by Grok AI's sudden, extreme racism, AI imitates rather than intuits morality, depending on how it is prompted. It is becoming more adept at utilitarian and instrumental reasoning – goal-oriented thinking, where the 'ends justify the means'.

Utilitarianism is a byproduct of the Age of Enlightenment. It is, as Mangion describes it, an ethical calculus in which whatever benefits the majority is the most morally justified. If the wellbeing of nine people demanded the suffering of the tenth, that would be an acceptable outcome. But the problem with utilitarianism is that it can accommodate great suffering in that minority, and has been used to justify atrocities in the past. A telling example of AI utilitarianism is the censorship of social media spaces. Censorship is necessary to prevent traumatising or radicalising content. It is, however, impossible to implement without some automation. This comes with its own problems. For one thing, some content creators are arbitrarily deplatformed, having triggered an AI response without breaking the terms of service. These people would have no recourse. Many consumers are protected, but a few people's careers are ruined. In systems with human staff, small injustices are often resolved due to an employee's empathy – they push procedural limitations to help someone they have had human contact with. The AI will do no such thing. It cannot recognise that, to use Mangion's words, 'human experience is qualitative, not quantitative.'

There is, hence, a great irony when thinking about AI that has been directed to protect people. Now consider that health insurers are employing AI to evaluate and deny claims. Without empathy, vast amounts of money may be saved at the expense of human lives. Then consider that Israel is using AI to determine bombing targets in Gaza. In Gaza, this technology facilitates what Mangion identifies as the darkest product of instrumental reasoning: systemic genocide. Instrumental reasoning refers to analytical, goal-oriented thinking that prioritises efficiency and does not consider ethics. Historically, when it is applied to a goal for which people are an obstacle, people are removed. The example taught by one of Mangion's own professors was Auschwitz. How much more efficient, and thus more lethal, and thus more evil, and yet less human, could AI have made that concentration camp? But the truth of Auschwitz, the horror and grief beyond verbal expression, would be invisible to AI.

Utilitarian and instrumental reasoning are prominent throughout secular history. Such instances are rightfully treated with appropriate scepticism by philosophers like Mangion. But AI *cannot* contest utilitarianism or instrumentality. If implanted with a semblance of different ethics, it will merely seek to emulate them using instrumental means. Mangion sees the value of AI where instrumental reasoning is useful. One such instance would be in AI's efficiency at managing systems and quickly interpreting data – the spaces where computers have previously proved revolutionary. Nonetheless, he believes that entrusting it with more human questions, and overly deferring such to it, is a gross mistake. Mangion describes AI as 'abstracted reason'. It cannot have the embodied experience of humanity that precludes human decency.

We have, in a way, segregated two parts of our being. Analytical, critical reasoning can be deferred to AI, diminishing these skills in ourselves. Conversely, AI is without the unspoken feelings coded into humanity that allow us to reason ethically. We may find, once bisected, that we were more than the sum of these parts. Perhaps that discovery will lead us to appreciate humanity more holistically. And yet, perhaps it will cost us a portion of our ability to contextualise feeling with reason, not to mention our ability to enrich reason with feeling – the things that make us human. T



Neutral but Not Passive: Malta's Balancing Act Between Sovereignty and Solidarity

Author: **Timothy Alden**

On 6 March 2025, European Council President António Costa declared that the European Union was 'moving decisively towards a strong and more sovereign Europe of defence'. This was said at the special European Council meeting, which launched the €800 billion commitment to European defence. The meeting received the support of 26 Member States, including Malta, and launched an ongoing Europe-wide debate on what the future of European defence should look like. During a year that has so far been marked by escalating conflict, Malta is also discussing what neutrality means.

Malta's neutrality (Subarticle 3 of Article 1) was added to the Constitution in January 1987 in a Cold War context, and still references the existence of 'two superpowers'. A few years later, the Soviet Union would cease to exist. With Russia's ongoing war against Ukraine as a backdrop, Dr Valentina Cassar, from UM's Department of International Relations, published a paper where she observed that questions have been raised 'over the meaning, relevance and implementation of neutrality for small, neutral EU member states such as Malta'. The paper concluded that 'an effective approach towards security and defence within the current climate requires continued investment in capabilities, and attention to non-military concerns that require investment and interoperability'. Given the recent EU commitment of €800 billion towards defence, branded Readiness 2030, Cassar was invited by **THINK** to further discuss the role of Maltese neutrality in 2025 and beyond.

UNDERSTANDING MALTESE NEUTRALITY

Cassar argues that neutrality is not just what is explicitly written in the Constitution, but also that which should be understood as a lived policy, shaped by how it is interpreted and applied in practice. Ultimately, she states, 'Warfare and strategy are an extension of political

objectives. Strategies are all about working with what one has.' In Malta's case, the country is very limited in terms of budget, capabilities, and even geography. Therefore, even if Malta had to drop its neutrality, its foreign policy and posturing would not be very different.

Regardless, one has to understand why neutrality has been so important for Malta in the past, especially in the context of government policy during the Cold War. Cassar believes neutrality has served Malta as a tool in maintaining sovereignty and autonomy in foreign policy. Thus far, our neutrality has not worked against us. In parallel, Cassar draws an analogy with the debate in the EU on unanimity on foreign policy issues. Presently, all EU Member States must come to an agreement before the EU can adopt a position. Yet some would like to see this requirement removed, resulting in the risk of Malta being sidelined as a small island-state. As it stands, one could interpret Malta's neutrality as a tool to preserve its voice.

MISUNDERSTANDING EUROPEAN DEFENCE

While Malta acknowledged the utility of further investment in defence at the special European Council meeting in March, to avoid accusations of hypocrisy or constitutional conflict, it had to clarify in the Maltese media that its support of the European defence fund was not intended towards buying lethal weapons, but rather to enable alternative investments such as cyber security or infrastructure protection.

Months later, at the 2025 NATO Summit in The Hague, Allies made a commitment to invest 5% of GDP in defence, with 1.5% of that target being allocated to softer areas of defence, such as protecting critical infrastructure, defence of networks, ensuring civil preparedness and resilience, innovation, and lastly, strengthening the defence industrial base. Nonetheless, opposition to increased defence spending, by some NATO members such as Spain, is not only limited to whether the money is being spent on lethal weaponry or not, but rather, whether the money is coming from cuts to budgets for social welfare or education. Malta likewise uses this argument in the European context for European defence funds, much like Spain is in the context of NATO.

However, much of Europe's Readiness 2030 fund is contemplated in the form of loans with advantageous financing conditions rather than lump sums of cash. The loans would be offered by the Security Action for Europe (SAFE) instrument and the European Central Bank. Borrowing from the defence fund would not put

Dr Valentina Cassar
Photo by James Moffett

Member States in breach of the EU's spending rules, which require Member States to keep their deficits and debt under control. Therefore, one can equally argue that increased spending does not necessarily have to come from cuts to social services in the case of European defence. At the same time, investing in European defence helps many NATO members to meet their targets, given that they are members of both organisations simultaneously.

Similarly, Cassar clarifies that there is a great deal of misunderstanding about what European security and defence initiatives generally entail, particularly with reference to arguments for a common European army. She clarifies that this is a misnomer, as what is actually on the table in such cases is a pathway to a common funding or budgetary mechanism to release funds, rather than creating a consolidated military reserve force. This budgetary coordination is exemplified by Readiness 2030.

While certain states, such as Sweden and Finland, have ditched their neutrality, Cassar believes that by examining states that retain it, such as Switzerland, Austria, and Ireland, Malta might note some ideas to draw inspiration from.

Each country has its own traditions and interpretations of neutrality, and each state invests in its own capabilities according to its needs. Therefore, there is more room for discussion as to what cooperation and investment could take place in Malta, and how it might affect employment, for example. In Malta's case, instead of lethal weapons, there could be further funding for interoperability, such as cross-border security or training on dealing with piracy. Not all investments in defence need to be interpreted as a country's military capabilities. Cassar points to the Armed Forces of Malta purchasing an offshore patrol vessel funded through the EU's Internal Security Funds, under the rationale of 'strengthening police in fighting criminality and managing risk'.

ALLOWING A NUANCED DISCUSSION

Cassar states that neutrality is used as a political football, even when there is far more alignment on foreign policy and security issues. In meetings of Malta's Foreign and European Affairs Parliamentary Committee, for example, Cassar observes broad agreement on issues such as Malta's place in the Partnership for Peace agreement with NATO. Nonetheless, in spite of that broad agreement, there will be an element of theatre, whereby the two main political parties trade critical talking points, such as reminding one another of past differences, while generally coming to an agreement on what position Malta should be taking on current events.

Therefore, allowing a broader debate on Malta's neutrality should be less of a contentious issue than it actually is. For Cassar, it is less a question of whether Malta should be neutral at all, though this is certainly one of the ongoing subjects of debate. Rather, it is about reconciling the tensions between how neutrality is perceived and how open it already is to interpretation. While the wording of the Constitution prevents participation in a military alliance, there is considerable room for interpretation beyond this. It has been argued that Malta can participate in peace-keeping missions, given that the Constitution calls for a commitment for the country to be 'actively pursuing peace, security and social progress among all nations'.

Could neutrality unlock greater room for Malta to manoeuvre? By examining the interpretations of the Constitution in other neutral European states, Malta may identify greater flexibility in these models than most would expect. This may offer the chance for Malta to invest in its capabilities accordingly, benefiting from available funding in a manner which might yet win consensus.

Warming Waters, Shifting Shores: How Malta's Seagrass Meadows Reveal the Hidden Impact of Climate Change

Author: **Alessio Marrone**

What if tomorrow's ocean warming was already happening right now, in one quiet Maltese bay? By studying the thermal discharge from a power plant, researchers reveal how even local heat pollution mimics climate change, reshaping seagrass meadows and fish communities in ways that may foreshadow the Mediterranean's ecological future.

As sea temperatures continue to rise, the Mediterranean – a recognised climate change hotspot – is undergoing dramatic ecological shifts. But what happens when we focus on a single bay affected not by future warming, but by hot water discharged from a power plant? In my Ph.D. research with the Oceanography Malta Research Group OMRG), I investigated how this local thermal plume can mirror long-term ocean warming and its impact on ecological communities, focusing specifically on *Posidonia oceanica* meadows and fish communities.

My work , supervised by Prof. Alan Deidun and Dr Adam Gauci from UM's Department of Geosciences and co-supervised by Dr Simone Mirto (National Research Council, Italy), was based in the twin embayments of Il-Ħofra ż-Żgħira and Il-Ħofra l-Kbira. These near-identical bays, separated by a peninsula in south-east Malta, provided the perfect natural laboratory: one affected by thermal effluent, the other serving as a control site.

THE LOCAL BECOMES GLOBAL: WHY THERMAL EFFLUENT MATTERS

The Delimara power station, which provides over two-thirds of Malta's type of warming the Mediterranean is predicted to face in coming decades.

By analysing environmental data, seagrass health indicators, and underwater visual censuses

Alessio Marrone

of fish over a two-year period, we were able to observe how species react to gradual increases in temperature. Unlike laboratory tanks or hydrothermal vents – commonly used to simulate warming – our site allowed us to study ecosystem-scale effects in the real world.

MALTA'S MARINE FOREST: THE CASE OF *POSIDONIA OCEANICA*

Posidonia oceanica, a seagrass species endemic to the Mediterranean, plays a vital role in coastal ecosystems. It stabilises sediment, supports biodiversity, and sequesters carbon. But it can also be highly sensitive to temperature shifts.

Closer to the thermal outfall, the meadows showed signs of stress. Leaves were shorter, rhizomes (underground stems) weighed less, and shoot density declined. Although the plants attempted to compensate by producing more leaves per shoot, overall photosynthetic capacity dropped. The health of the meadows deteriorated over the years of exposure to the thermal effluent, suggesting that even minor, chronic increases in temperature can have lasting impacts.

Interestingly, the shift also extended to the epiphytes (algae and microorganisms) growing on the seagrass. Calcareous species were replaced by more heat-tolerant turf algae, which offer lower ecological value. This change hints at a broader breakdown in the seagrass-associated microhabitat, with possible consequences for all species that depend on it.

FEWER FISH, AND DIFFERENT ONES TOO

The fish community also responded strongly to the temperature gradient. At the station closest to the effluent, species richness and diversity were lowest, yet fish abundance was surprisingly high – mainly driven by thermophilic or opportunistic species like the native damselfish.

Top: View of Ras il-Fenek, the peninsula dividing the two bays under study. Bottom: General view of Il-Ħofra ż-Żgħira and the thermal effluent. ***Photos courtesy of Alessio Marrone***

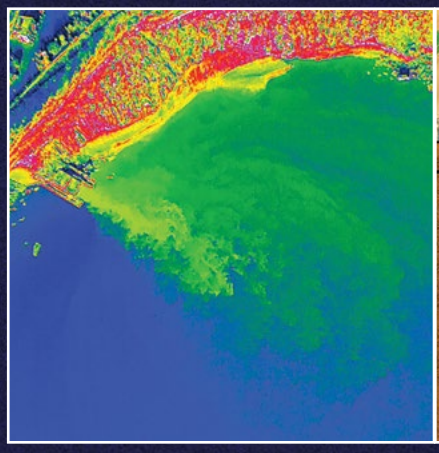
Traditional biodiversity indices only tell part of the story. To dig deeper, we grouped the observed species into functional groups – collections of fish that play similar roles in the ecosystem (eg, predators, grazers, detritivores). This approach revealed that transient predators and planktivores dominated the warmest area, while more sedentary species, such as ambush predators and temperate reef fish, were pushed to cooler waters.

Of particular concern were the changes observed in herbivorous fish. Species like parrot fish were more common near the effluent and thrived in the warmer conditions, while others, such as salemas, were more abundant at control sites with healthier meadows. This shift could alter grazing pressure on seagrass meadows, potentially destabilising an already vulnerable ecosystem.

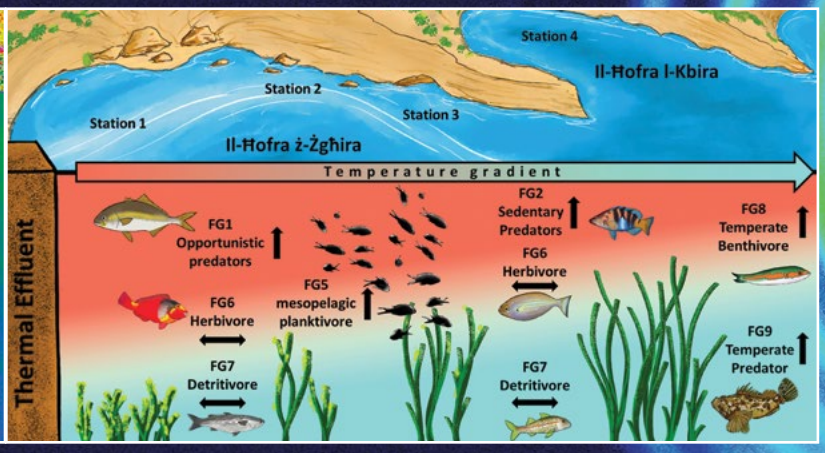
FUNCTIONAL COMPENSATION OR ECOLOGICAL RED FLAG?

In ecology, 'functional compensation' refers to one species stepping in to perform the role of another when environmental conditions change. While this can initially mask ecosystem degradation, it often signals a looming shift.

In our study, detritivores like red mullets were replaced by more heat-tolerant fish, such as grey mullets, near the effluent. This switch may preserve sediment turnover in the short term, but represents a move towards less ecologically specialised and potentially less commercially valuable species. It's a warning that ecosystem services –



Thermal image of the thermal effluent within Il-Ħofra ż-Żgħira.



Graphical abstract of the manuscript being published featuring the main highlights concerning the seagrass and Functional Groups being analysed.

Images courtesy of Alessio Marrone

like biodiversity support and fishery yield – could decline even if overall fish abundance appears stable.

THE DISAPPEARANCE OF SEASONS?

Another striking finding was the loss of seasonal variation. In the control bay, fish communities changed noticeably between spring and autumn, following expected ecological cycles. But near the thermal plume, this seasonal rhythm was disrupted. Communities remained relatively stable across seasons, hinting at a climate future where warming 'flattens' natural fluctuations and may reduce ecosystem resilience.

WHY STUDENTS AND RESEARCHERS SHOULD CARE

Our research shows that even localised warming – from a single power plant – can destabilise critical marine habitats. These findings serve as a proxy for broader climate change impacts, especially in semi-enclosed seas like the Mediterranean, which is warming 20% faster than the global average.

For students and early-career researchers, this work underscores the value of integrating fieldwork, functional ecology, and data-driven modelling to understand environmental change. It also highlights how local observations can contribute to global understanding.

Furthermore, the research journey – conducting underwater surveys, managing international collaboration, and integrating marine biology with environmental monitoring – offers a blueprint for interdisciplinary science that can drive meaningful environmental policy and conservation.

FINAL THOUGHTS

The twin bays of Il-Ħofra ż-Żgħira and Il-Ħofra l-Kbira may seem like quiet corners of the Maltese coast, but they offer a compelling glimpse into the Mediterranean's ecological future. As ocean temperatures rise, ecosystems are already beginning to shift – some species thrive, others retreat, and the crucial services these habitats provide may be at risk.

This study is just one part of my broader Ph.D. journey with the OMRG. Beyond seagrass meadows and fish communities, I am also investigating other components of the ecosystem, such as benthic macrofauna (sediment-living organisms located on the seabed, with sizes ranging from 0.5 to 2 mm), to gain a more holistic view of how thermal stress cascades through marine food webs.

Importantly, we are embracing novel and cutting-edge technologies to make climate change modelling and thermal effluent monitoring more cost-effective and efficient. These include the use of environmental DNA, which enables the detection of species by analysing genetic traces they leave in seawater, and infrared drone surveys, which help map thermal gradients from above with remarkable precision.

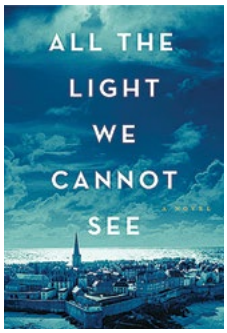
By integrating traditional field ecology with advanced tools, we are building a more scalable and responsive approach to monitoring environmental change – one that could be deployed across other vulnerable Mediterranean regions. The hope is not just to understand what is happening, but to develop the capacity to respond quickly, smartly, and sustainably.

Further Reading

Marrone, A., Rinaldi, A., Montalto, V., Gauci, A., Ape, F., Ringeard, H., Spoto, M., Martinez, M., La Marca, E. C., Mirto, S., & Deidun, A. (2025). Surviving in a warmer marine world: A study on the impact of thermal effluent on Posidonia oceanica meadows and associated fish assemblages in the Maltese Islands. *Journal of Marine Science and Engineering*, *13*(3), 475. https://doi.org/10.3390/jmse13030475

to-do list

book



All the Light We Cannot See *by* ***Anthony Doerr***

Set in the Nazi-occupied Saint-Malo in 1944, this brilliant novel captures the courage of a blind French girl and a German boy trying to survive World War II. The historical fiction won the Pulitzer Prize for Fiction and has since been adapted into a mini-series by Netflix.

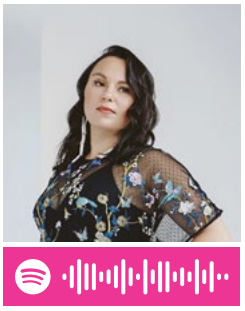
videogame

A Blind Lengend *developed by* ***DOWiNO***

Immerse yourself in this action-adventure audio game without video – where ears replace eyes! Play as Edward Blake, a legendary blind knight to rescue your kidnapped wife. The gameplay combines text-to-speech and human audio through binaural 3D sound to navigate the terrain, engage in combat, and even ride a horse!

music

Tanya Tagaq



An improvisational singer and avant-garde composer who contends with themes of environmentalism, human rights and post-colonial issues. While her sound is deeply rooted in her indigenous culture as an Inuk throat singer, her art is firmly contemporary.

podcast

Virtually Parkinson (Night Train Digital)

A podcast series that reimagines Sir Michael Parkinson's legacy for the digital age by using an AI-reconstruction of his voice to 'host' posthumous interviews, blurring nostalgia, wit, and entertainment.

Brian's Corner

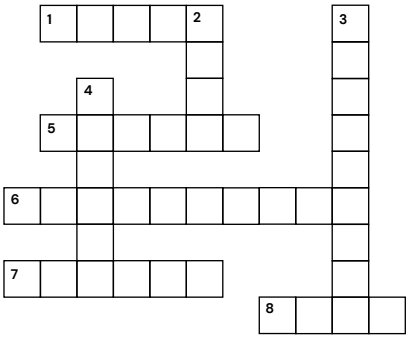
Crossword Puzzle

Across

1. Land close to the sea
5. the feeling of amazement or admiration
6. A scientific procedure to test a hypothesis
7. A surface decoration made by inlaying small pieces to form a pattern
8. A sum of money reserved for a particular purpose

Down

2. A homophone of thyme
3. The movement of people from one place to another
4. A digitally stored collection of written or spoken material



THINK Edition 47 Crossword Answers

Across: 2. Fish, 5. Bedrock, 6. Constorium, 8. Dated **Down:** 1. Officiant, 3. Replicate, 4. Abstract, 7. Mock

THE CAMPUS BREAKFAST

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