

**T**HE NATURAL WORLD has long inspired creativity. From artwork and literature to films and music, such expressive mediums can

bridge the gap between science and art, opening geoscience up to diverse audiences. Singer-songwriter Olivia Rafferty had little prior experience with Earth science, but an epiphany during the coronavirus pandemic led to an enlightening exploration of our planet's history through popular music.

#### Wasted time

During a period when everything seemed to slow down globally, the concept of time passing became an ever-pressing intrigue for Olivia. As part of an online mentorship programme, Olivia was partnered with an industry professional who proffered that she had perhaps 'wasted' several years in her career. While cutting, these hard-hitting words pushed her to explore the concept of time and new ways of looking at it: "Can wasted time be redeemed? Is time ever really wasted?"

Olivia interviewed friends about periods in their lives which felt slow-moving – experiences of depression, physical injuries, and indecision. She researched long-termism, but the concept felt grandiose and unrelatable. It was upon reading *Timefulness* by Marcia Bjornerud that time, and the world, ironically seemed to open up for Olivia.

"Reading the book revealed a cache of glittering secrets. I had taken geography classes at school and knew about the basics – such as plate tectonics and rock types – but suddenly it felt like there was so much more to discover."

Delving deeper, Olivia came across the freely available 'Geology 101' lectures on YouTube, produced by Nick Zentner at the University of Washington, USA. These daily snippets took Olivia on a journey of geological foundations and captured her imagination.

"Geology revealed itself to me as an

# Perspectives on time

Olivia Rafferty discusses the emotive power of connecting audiences by personifying Earth science through music

incredibly imaginative science, being able to look at clues and picture what might have occurred millions (even billions) of years ago. I came across the term 'The Boring Billion' and it seemed like the geological equivalent of 'wasted time'. Seeing how Earth had been in tectonic and evolutionary stasis but still created what we have today, I understood that time can never truly be wasted."

The idea of huge events happening on vast scales and taking millions of years to

unfold inspired Olivia to write *Typical Forever*, her debut concept album about geology.

"I hope that this album gives people a pathway into discovering geology, as well as providing some perspective and comfort about time and our place in the world."

#### Storytelling through song

Science communication is most powerful when we leverage storytelling, allowing people to connect with technical concepts in a relatable, human manner.

Olivia uses the personification of geological objects to allow listeners to identify with her songs – and the science – on a deeper emotional level.

“My song ‘Cascade’ describes the process of the sedimentary cycle; as water and wind dislodge a rock from its mountaintop home and it’s carried out to sea, it becomes changed through weathering, transportation, deposition and compaction. I wanted to tell the story from the perspective of this rock undergoing change, as a character that acknowledges where it is now and where it wants to go. To someone passively listening, it would sound like a song about personal transformation, but if you read the lyrics, you’ll find those little signifiers that it’s also about a geologic process. Beyond the rock’s story, it’s about how people can choose to change at different points in their lives, and how life is an endless cycle of becoming and unbecoming.

“Creating relatability is about finding common ground between our own lives and the life of our planet. ‘Juan de Fuca’ is about the subducting tectonic plate and a resulting earthquake in 2001, but these are also metaphors for the slow disappearance of a relationship and the emotional aftershock. ‘Fossils’ is not just about ancient life, but also the stratigraphic column of our own existence, and how we are made up of layers of the person we used to be. ‘Lion Eats The Stars’ is inspired by my time living in Edinburgh and Arthur’s Seat being such a character of the city; the song is about the contrast between this benign lion in repose and the explosive volcano it once was, around 340 million years ago.”

Transforming geological processes and events into storytelling protagonists allows scientists and science-hobbyists to think about their discipline in new, creative ways, whilst encouraging

non-specialists to better connect with, and therefore understand, the science.

### Transforming perspectives

Olivia notes that working as an independent artist comes with challenges. “I act as the artist, manager, producer, marketer, press agent, creative director, accountant, grant writer, and everything in between.”

Funding such artistic approaches often relies upon personal and community investment, alongside sourcing grants. With support from the Geologists’ Association’s Curry Fund and crowdfunding, Olivia amassed over 100 backers to bring *Typical Forever* to life. Whilst an album focused on Earth science might initially seem niche and challenging to bring to a wider audience, Olivia’s marketing strategy over the last two years has garnered a transatlantic following. Through a weekly newsletter, readers were taken on a journey of

geological discovery as they learnt about both the science behind the music and album production, whilst a host of experts were brought into Olivia’s orbit through the Geologists’ Association’s support. In a more typical music-marketing sense, interviews on BBC

Radio Scotland, Ireland’s national station RTÉ Radio 1 and Times Radio, as well as a launch show in London, all helped bring the album to a broader spectrum of listeners.

“The most enjoyable and impactful part of sharing these songs has been performing at museums and events such as the Yorkshire Fossil Festival,

the Oxford University Museum of Natural History, and at the Geological Society of London’s conference and event for artists, Earth’s Canvas. The Natural History Museum is still on my list, so I’m aiming to play there one day too!”

The reception to Olivia’s album has been overwhelmingly positive and complimentary towards navigating geology through contemporary music, even if the pun “rock music” may have been used a few too many times. One of Olivia’s favourite reactions is from BBC Radio Scotland DJ Iain Anderson, who said ‘Juan de Fuca’ was “anything but typical” – a play on the album title.

Given the success of *Typical Forever*, Olivia is certain there is scope for more geology-inspired songs in the future. She encourages other creatives to find meaning in unusual places and share stories they care about, emphasising that the initial research period is critical (and fun!).

“Read books, go on walks, go to museums, visit places, let yourself be open to what you might stumble across. As you write, create, and process your thoughts, you will find that different stories begin to talk to each other through your work.

“The amazing thing about Earth science is that there is so much to uncover and there are so many people who are fantastic communicators, so often it’s their passion that will guide you towards what you want to learn and therefore share. Everyone has a unique perspective to highlight our planet’s wonders, the power of artistic expression is that nobody sees the world quite like you do.” **G**

### OLIVIA RAFFERTY

Songwriter, podcaster, poet and artist.

Interview by Hannah Bird, Assistant Editor, *Geoscientist* magazine.

### FURTHER READING

- Bjørnerud, M. (2020) *Timefulness: How Thinking Like a Geologist Can Help Save the World*. Princeton University Press, 224 pp.



### LISTEN TO TYPICAL FOREVER

at [oliviarafferty.bandcamp.com/album/typical-forever](https://oliviarafferty.bandcamp.com/album/typical-forever) and read a review of the album on page 53.