FUTURE NEWS

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IN THIS EDITION

WHY THE FUTURE MIGHT NOT BE WHERE YOU THINK IT IS

by Ruth Ogden

It's easy to assume everyone thinks of the future the way you do.

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Imagine the future. Where is it for you? Do you see yourself striding towards it? Perhaps it's behind you. Maybe it's even above you.

And what about the past? Do you imagine looking over your shoulder to see it?

How you answer these questions will depend on who you are and where you come from. The way we picture the future is influenced by the culture we grow up in and the languages we are exposed to.

For many people who grew up in the UK, the US and much of Europe, the future is in front of them, and the past is behind them. People in these cultures typically perceive time as linear. They see themselves as continually moving towards the future because they cannot go back to the past.

In some other cultures, however, the location of the past and the future are inverted. The Aymara, a South American Indigenous group of people living in the Andes, conceptualise the future as behind them and the past in front of them.

Scientists discovered this by studying the gestures of the Aymara people during discussions of topics such as ancestors and traditions. The researchers noticed that when Aymara spoke about their ancestors, they were likely to gesture in front of themselves, indicating that the past was in front. However, when they were asked about a future event, their gesture seemed to indicate that the future was perceived as behind.

LOOK TO THE FUTURE

Analysis of how people write, speak and gesture about time suggests that the Aymara are not alone. Speakers of Darij, an Arabic dialect spoken in Morocco, also appear to imagine the past as in front and the future behind. As do some Vietnamese speakers.

The future doesn't always have to be behind or in front of us. There is evidence that some Mandarin speakers represent the future as down and the past as up. These differences suggest that there is no universal location for the past, present and future. Instead, people construct these representations based on their upbringing and surroundings.

Culture doesn't just influence where we see the position of the future. It also influences how we see ourselves getting there.

It's easy to assume everyone thinks of the future the way you do. StunningArt/Shutterstock

In the UK and US, people typically see themselves as walking with their faces pointing forward towards the future. For the M ori of New Zealand, however, the focus of attention when moving through time is not the future, but the past. The M ori proverb Kia whakat muri te haere whakamua, translates as "I walk backwards into the future with my eyes fixed on my past".

For the M ori, what is in front of us is determined by what can or has been seen. The M ori consider the past and present as known and seen concepts because they have already happened. The past is conceptualised as in front of a person, where their eyes can see them.

The future, however, is considered unknown because it has not happened yet. It is thought of as behind you because it is still unseen. M ori perceive themselves as walking backwards rather than forwards into the future because their actions in the future are guided by lessons from the past. By facing the past, they can carry those lessons forwards in time.

DIFFERENT APPROACHES

Scientists are not sure why different people represent the past, present and future differently. One idea is that our perspectives are influenced by the direction that we read and write in Research shows that people who read and write from left to right draw timelines in which the past is on the left and the future is on the right, reflecting their reading and writing patterns.

However, people who read from right to left, such as Arabic speakers, often draw timelines with events from the past on the right and the future on the left. However, reading direction cannot explain why some left-right reading people think of the future as "behind".

Another theory is that cultural values may influence our orientation to the future. Cultures vary in the extent to which they value tradition. Researchers believe your spatial concept of the future may be determined by whether your culture emphasises traditions of the past or focuses on the future.

In cultures that stress the importance of progress, change and modernisation, the future is normally in front – for example, the UK and the US. However, in cultures that place a high value on tradition and ancestral history, such as in Morocco and indigenous groups such as the M ori, the past is the focus and is therefore usually in front.

These differences may also have implications for initiatives to tackle global challenges. If the future is not always in front, then western campaign mantras about "moving forward", "moving on" and "leaving the past behind" may lack resonance for many people.

Perhaps, however, if we can learn from other cultures' representations of time, we may be able to reframe our understanding of some of the world's most pressing problems. Approaching the future with regular looks over the shoulder to the past could lead to a fairer future for everyone.
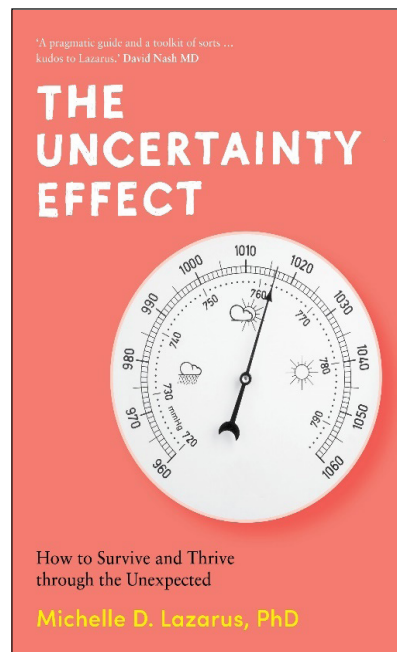
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Book Review

by Charles Brass – Chair, Futures Foundation

The Uncertainty Effect
How to Survive and Thrive Through the Unexpected
by Michelle Lazarus

'A pragmatic guide and a toolkit of sorts ...
kudos to Lazarus.' David Nash MD

THE UNCERTAINTY EFFECT

How to Survive and Thrive
through the Unexpected

Michelle D. Lazarus, PhD

This new book is written by the leader of a team that has focused for some time on exploring the effect of uncertainty on many aspects of our personal and professional lives. It is interesting that the team has ended up focusing their attention on uncertainty when their apparent brief is research into the provision of medical education. Indeed, uncertainty in medical diagnosis and treatment is the subject of a lengthy chapter in the book – and the author makes a compelling argument that the current premise that medical diagnosis and treatment should avoid uncertainty at all costs leads not only to bad decisions being made, but more particularly to much stress, confusion and anxiety amongst patients and practitioners alike.

Lazarus describes the book in this way: "The Uncertainty Effect is a spark that seeks to ignite a broader conversation about how to improve our workplaces, our social interactions and our daily lives against the constant background hum of uncertainty" (p8). And the book begins (and ends) in classrooms.

The first 50 pages of the book focus on fostering uncertainty tolerance in classrooms (from primary schools to universities) on the basis that, far from being some inherent quality of human beings, tolerance to uncertainty can be both taught and learned. As Lazarus says: "Teachers have the greatest power (outside of parents) to foster uncertainty tolerance in learners" (p235).

She goes on to say: "Modern education systems need to reduce the expectation of certainty in a world where there is none" (p42), and we need to recognise that: "…uncertainty is part of the system, not a fatal flaw" (p122).

The second chapter moves into the medical arena, which is where the author and her team first began to focus on the inevitability of uncertainty, and the extent to which those who educate those who enter this arena believe their role is to diminish (if not eliminate) uncertainty. The third chapter focuses on to business and economics, another area where professionals too often promote their expertise based on certainty.

In all three chapters, Lazarus highlights all the reasons firstly why certainty is unattainable, and second why it is even undesirable – perhaps the most profound of which is highlighted by this quote from Indian spiritual guru Sadhguru: "Those who try to avoid uncertainty only end up avoiding possibilities", (p8) .

Chapter 4 focuses on uncertainty in scientific discovery – which can initially seem to be somewhat oxymoronic since science is supposed to be all about certainty. However, uncertainty abounds – from the so-called 'accidental' discoveries such as Fleming discovering penicillin in mould to the fact that so much science arises from testing hypotheses, which are ultimately uncertain. Lazarus concludes the chapter by quoting Joshua W. Clegg: "uncertainty and ambiguity are not scientific problems to be solved – they are the very genesis of knowledge" (p178).

The second last chapter investigates how uncertainty tolerance can foster diversity and social inclusion. Over nearly 60 pages Lazarus explores our capacity for inclusion in a wide variety of social settings, and concludes: "if we accept the discomfort of uncertainty….. we can create a society where everyone feels seen and valued, and fits in. Then we all win" (p236).

The final chapter is called "the age of uncertainty" and explores how tolerance of uncertainty can influence global events. Like the rest of the book, her observations and conclusions are supported by formal research.

A final quote probably best sums up why this book is so important: "No matter how many times researchers look to history to predict the future, or model data to determine outcomes, the nature of human autonomy, agency and choice generates universal uncertainties" (p6).

Uncertainty may be inevitable, but that doesn't mean we can't act with intelligence and foresight.

Dr. Michelle Lazarus is Director of the centre for Human Anatomy Education at Monash University. Her work focuses on integration of psychosocial skills (medical ethics, professionalism, uncertainty tolerance and clinical skills) within core coursework, with her most recent work exploring the role of uncertainty within healthcare science education.

FUTURISTS IN ACTION

DEVELOPING A FUTURIST'S MINDSET
SIGNALS AND SENSEMAKING

by Rebecca Ryan, APF

That photo up there? It's the **largest radio telescope** ever built, more than 30 football fields large. Why am I showing you this signal-hunting device with 5–10X more potential to discover alien civilizations? Because I have a question:

What signals are you picking up?

Your ability to detect signals is critical to making sense of what's going on around you.

And your ability to make sense is critical to anticipating and imagining brighter futures.

And that's your job as a futurist, visionary, leader, and change agent: to make things better.

How do you develop your radar?

We'll get to that. First, let's remember what we're looking for: signals.

"[…] signals of the future are all around us. Often these are things or developments that are on the margins. They may look weird or strange. They are the kind of things that grab your attention and make you ask: 'Why is this happening? What is going on here?' A signal can be anything. It could be a technology, an application, a product/service/experience, an anecdote or personal observation, a research project or prototype, a news story, or even simply a piece of data that shows something different.".

~Marina Gorbis, Institute for the Future

"Five Principles for Thinking Like a Futurist"

Three questions to help you locate signals

1. What's happening on the margins of your domain? Who are the true innovators in your field, and what are they working on? What's getting disrupted?

2. What strikes you as odd?

3. What's grabbing your attention and making you ask, "What's going on here?"

Three capabilities to refine your radar

1. **Read widely and deeply.** Preferably, not the news. Some alternatives: the list of resources we recommended to our 2020 Futurist Campers (notice the breadth), and their first reading assignment (notice the depth.) The point? Use your big, beautiful brain to think more widely and more deeply about the world around you.

2. **Talk frequently with folks** who are younger than you, older than you, different from you. Don't talk about the weather. Ask, "What are you noticing?" or "What are you working on now, that's exciting?"

3. **Put your phone down.** Learn to keep your phone in your pocket or out of sight. Take yourself (or your kids or dogs) on walks without your earbuds in. Be present to what's happening around you. Just notice. Stay with it. This allows your beta waves to come online and make connections. Humans have good ideas in the shower because they're alone in there.

How do futurists use signals?

In my experience, signals — like delicious meals — are best shared. I regularly gather with local government nerds for a "Signals and Sensemaking" panel. It's simple, just two rounds of discussion:

Round 1: Everyone shares a couple of signals they've picked up since the last time we met. We track our signals in a google doc.

Round 2: Everyone takes a turn riffing off each other's signals to connect the dots, anticipate what the signals may be telling us, and ask deeper questions.

This is one of the most valuable meetings I have each week because my viewpoint is always expanded. It's simple to execute, costs nothing, and is valuable to everyone who attends.

Here's a sample of signals my group shared in fall 2020:

- Local governments across the U.S. will experience up to 40% loss in revenue due to COVID-19. Implication: in previous recessions, "nonessential" services like parks and recreation are cut first, followed by cuts to education and public health.

- There has been a 39% increase in the percent of uninsured, the largest increase ever recorded. Also, returning workers may bring drug and alcohol problems back with them to work.

- Curing addiction? Researchers have figured out how to "erase" memories that lead to drug relapse. Implication: We may never win the war on drugs, but maybe science can help users get clean and sober.

- Cities, local hospitals, and school districts declare racism a public health issue. This is already backed by the public health and medical communities, paving the way for policy reform.

- Former Fed Chairs Bernanke and Yellen advise investments in public health as an economic balm. Will public health finally get the funding it deserves?

- Big banks are setting aside billions of dollars, anticipating loan defaults. Also, most economists are now anticipating a mortgage meltdown.

- Cyber mercenaries-for-hire are hijacking routers and disrupting websites and online services at record-setting rates. Implication: arms race in cybersecurity.

- Australian university discovers a blood test that can detect COVID-19 in 20 minutes. No more waiting 5–10 days for test results!

Other examples of sensemaking

- Make Me Smart with Kai Ryssdal and Molly Wood. Each reporter brings one or two media stories and discusses them together. On Fridays, they meet while drinking a beer. (Nice touch, you two.)

- A well-run panel — where participants disagree with each other, but the conversation is generative, not destructive — can be good examples of sensemaking. The acid test is "Did anyone learn anything from the conversation?" If YES, congratulations. If NO, this was probably an unfulfilling rehash of everyone's talking points.

Rebecca Ryan is an American based futurist, and this is an extract from her blog and is reproduced with permission

Signals in the Noise

THE BIGGEST EDUCATION TRENDS OF THE NEXT 10 YEARS

by Bernard Marr

Education is changing rapidly. In today's fast-moving world, a model where we graduate in our youth prepared for a lifelong career is simply no longer valid.

Technology is reshaping the world into one where ongoing training, upskilling and reskilling are a necessity – and education is transforming to cater to this. Artificial intelligence (AI), online learning and breakthrough technologies like virtual and augmented reality (AR/VR) already play an increasingly important role. They will all become more integrated into the way we study and learn over the next decade.

So, here's my look-ahead to what I believe will be the dominant trends in education and educational technology (EdTech) by 2035. It may seem a long way away, but understanding them now will likely help us prepare for a future that, thanks to technology, will look very different than today.

IMMERSIVE VIRTUAL LEARNING ENVIRONMENTS

By 2035, the distinction between the physical and digital worlds will be increasingly blurred, and this is as true in education as anywhere. While I am sure many children and teenagers will still be attending brick-and-mortar school, alternatives will be well established for those who can't, as well as for adults and lifelong learners.

VR and AR technology will be far more accessible than it is today, with lightweight and affordable devices making it easy for anyone to interact with tutors and fellow learners as if they were in the same room. Highly immersive virtual classrooms and campuses will mean we can participate in sophisticated simulations, engage in complex scientific experiments or explore ancient civilizations first-hand.

Signals in the Noise
## THE BIGGEST EDUCATION TRENDS OF THE NEXT 10 YEARS

The maturing of technologies that exist today will democratize access to education for those who aren't fortunate enough to live in areas with good schools and colleges. However educators will face the challenge of balancing this with concerns such as increased social isolation and the impact of extended screen-time on developing minds.

AI-DRIVEN ADAPTIVE LEARNING

AI is going to change education (and everything else) in many ways, but over the next ten years, one of the most profound effects will be the rise of personalized learning. As the number of learners in both traditional classrooms (particularly in the developing world) and online environments climbs, teachers will have access to tools that accurately assess abilities and differentiate between learning styles to create hyper-personalized curriculums tailored to individuals' requirements.

Today's AI tutoring platforms will evolve into flexible AI mentors, able to understand psychological states and behavioral patterns to determine the best teaching strategies and even provide emotional support and encouragement. Students will have access to insights derived from biometric data to help them recognize the best time to learn and when they should rest. Adaptive gamification will challenge learners to improve themselves by dynamically engaging and assessing them throughout the education process, perhaps putting an end to the stress-inducing routine of cramming for end-of-term exams.

Personalization at this level has the potential to help us learn better and attain better educational outcomes. However, there will also be big challenges around privacy and questions over the role of human teachers as they find their role transitioning from information providers to learning facilitators. Biased data could lead to learners being inaccurately assessed, and care must be taken not to overlook the importance of human oversight and mentorship.
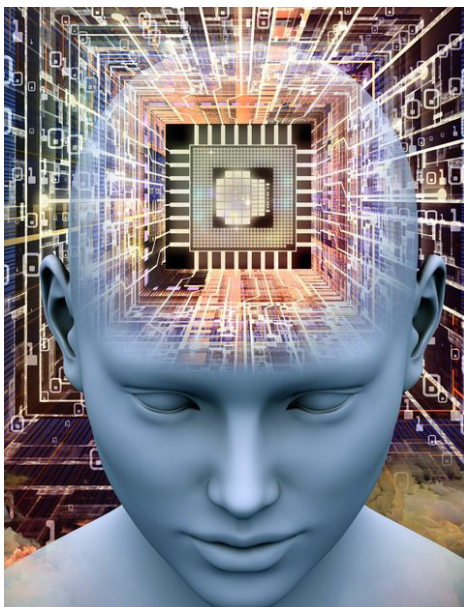
NEUROTECHNOLOGY AND ACCELERATED LEARNING
HACKING THE HUMAN BRAIN FOR BETTER LEARNING

Here's where things get very science fiction. So, brain-computer interfaces (BCIs) are in development today – the most famous example being Elon Musk's Neuralink experiments. Don't worry; we probably won't all have to have chips implanted in our heads to benefit, though, as non-invasive forms of BCI have also been in development for some time.

The first use cases in education are likely to involve assisting students with disabilities, enabling them to control devices with thoughts. This will enhance their ability to communicate and take part in learning activities.

Within ten years, they could also be used to understand the brain's learning processes better, potentially speeding up our ability to ingest, retain and recall information. By monitoring the electrical feedback generated by the brain, researchers believe it may be possible to optimize our ability to learn information and even develop skills such as playing a musical instrument.

Will this really be mainstream within ten years? Well, a lot depends on the outcome of research that's going on today. And just as importantly, it will come down to how society is able to answer questions around the ethical and security implications of developing technology that can literally read our thoughts!

A LIFETIME OF LEARNING

The concept of a "job for life" might have seemed normal to our parents' generation, but it's obsolete today. Students graduating ten years from now will be under no illusion that they are equipped with the skills and knowledge they will need for a lifelong career. The accelerating pace of digital transformation will make it necessary for those who want rewarding careers to adapt to new models of ongoing, continuous education. Education systems will adapt to support this, offering more courses that will involve on-the-job training and opportunities for upskilling.

It's already becoming normal for big companies like Amazon to offer degree-level apprenticeship programs, and this will become more common as employers seek to develop workforces equipped with the skills they need. Opportunities will involve online learning, modular learning and the type of immersive virtual learning discussed elsewhere in this article. Micro-learning and nano-learning will deliver education in bite-sized chunks, capable of being rolled out on a "just-in-time" basis to meet the changing needs of industries and professions. To cater to this, education providers will offer subscription services, allowing us to dip in and out of schooling in accordance with our personal needs. While there will always be a need for STEM education, with computers becoming increasingly proficient at technical tasks, more learning will be focused on human-centric "soft" skills that will increase our chances of remaining relevant in the era of AI and automation.

Bernard Marr is a world-renowned futurist, board advisor and author of Generative AI in Practice: 100+ Amazing Ways Generative Artificial Intelligence is Changing Business and Society.