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Manoa's images of the futures

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Bringing the futures to life

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15 years on

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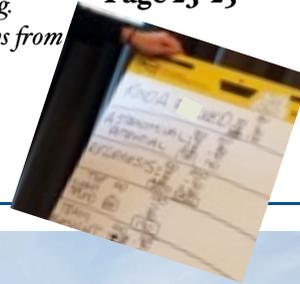


Photo: Bram Goots

Alternative futures at Design Develop Transform

ALTERNATIVE FUTURES

FIELD NOTES FROM DESIGN DEVELOP TRANSFORM

Design Develop Transform was held in Brussels and Antwerp in June. It was organised by the Erasmus University College's centre of expertise, Applied Futures Research | Open Time.

The two days of the conference in Antwerp were held at the city's modern art museum, M HKA, which hosted 'A Temporary Futures Institute' exhibition over the summer following renovation and reopening. The exhibition was co-curated by Senior Curator Anders Krueger and Maya van Leemput, and was open to the public.

The 'Temporary Futures Institute' was built around Jim Dator's four images of the future: grow, transform, discipline, and collapse. In this section we have an extended report on the event.

This includes the text of Jim Dator's keynote on the four futures, a short overview of the conference by Peter Bishop, and interviews with the futurists who were commissioned to create works for the 'Temporary Institute' on the theme of the four futures.

The APF led a workshop at the event; look out for a report on that in the next issue.

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There is more on both the conference and the exhibition at [the DDT website](#). (AC)

Manoa's four generic images of the futures

by Jim Dator

For most of human history—for tens of thousands of years—humans lived in societies where there was very little social or environmental change. Past, present, and future seemed exactly the same. Indeed, the best way to anticipate the future was to imitate the past, and the best people to ask about the future were old people who could tell you what it was like before they were born. They thus could tell you what was the best path forward without any fear of contradiction or failure.

But for some time you and I have lived in a very different world; one in which

change and uncertainty are constant, where no one can—or should—say with confidence: “do this, because if it worked before, it surely will work tomorrow”.

Our situation is as if we had been standing for a very long time on a large old-fashioned movie film. We look down and see the scene in the frame in which we are standing, and we look forward, and as far as we can see, the scene in each frame seems the same as it is where we stand now. And if we look backwards, we see the same thing: not much change that we can see from the past to now.



It was like that for so long that we are all biologically programmed to expect the future to be essentially like the present, just as the present is essentially like the past. There was no reason for uncertainty or anxiety for the most part. Just follow the rules, do as you are told, and everything will be as good as it can be.

Indeed, it was dangerous to imagine, much less to strive for, novelty. Leave well enough alone. If it works, keep it working. The ape who swings for the visionary bow will not live to pass on his genes.

Of course every once in a while something would occur to disrupt the predictability of the future. Your community could be suddenly overrun by a tribe that had much more powerful tools than you do. An earthquake could devour

Once in a while something truly transformative would happen: Some one would invent writing, and all the customs and rules that served oral cultures so well would be tested and fail. New rules, new institutions, new ideas, new ways of thinking based on writing would replace the old ones based on word-of-mouth, which then would rule for thousands of years until the printing press replaced the people, institutions, and practices that had evolved around handwriting, while newer rules, newer institutions, newer ideas, and newer ways of thinking based on the cheap and rapid sharing of printed ideas replaced the old ones.

But eventually, the rate of social and environmental change itself picked up and began to accelerate. The time between one

Old ways were being destroyed. There were many things about the new ways that people found better than the old—as well as many things about the old ways that were being lost and replaced by things inferior, flimsy, flighty, ephemeral.

Some people tried to hold on to the old ways but often could not because there seemed to be no way to turn off the projector. We were being propelled into unknown futures against our wills, to the great pleasure of some and to the extreme agony of others. Indeed, today's winners often became tomorrow's losers as new technologies brought new behaviors that produced newer values that challenged old values provoked by old behavior produced by old technologies.

Suddenly, what had been one long predictable future was in doubt, and in its place many alternative images of the futures sprang up, flourished, and faded while others grew, merged, persisted, until in place of one future—or one thousand—it became possible to see that there were in fact four generic, basic, mutually-exclusive images of the futures that existed in different peoples' minds, stories, songs, plans, and actions around the world.

When I first became seriously interested in understanding the future, I assumed I could accurately predict the future by using computer models.

But the more I looked and read, the more I saw that I could be content with predicting one future only if I were content to ignore all the other different images of the futures that existed. And I could not do that. Each image had its own epistemological base, its own logic, its own set of facts, its own preferred vision, and I could not find any basis for me to assert that one was correct and all the rest wrong. Rather, I concluded that it was my

Each of the millions of images of the futures are variations of one of four generic and fundamentally-different images.

your village. New diseases could sweep through bearing everyone away. Your community could outstrip the carrying-capacity of its environment. A shipwrecked sailor might show up with a new pair of genes, and suddenly the biological basis of your community could significantly alter.

But most of the time, after a brief period of uncertainty and confusion, a new normal would emerge and everything would be predictable once again.

new invention and the next got shorter and shorter. People were constantly having to learn how to adapt to the new before they had barely come to understand the old.

It was as though someone had picked up the old movie film off the floor, placed it in a motion picture projector, and turned on the switch. Suddenly we saw that we could no longer predict the future on the basis of the present or past. None of us could be sure what was coming next.

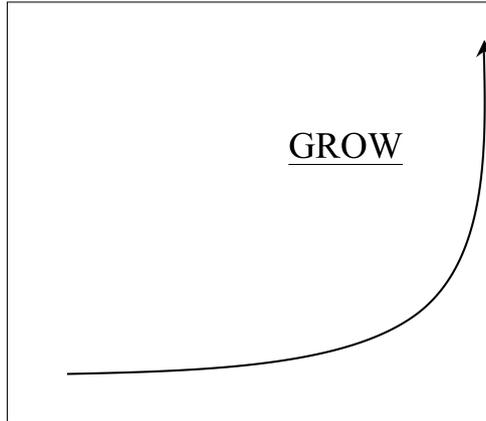
duty as a futurist to gather and explore as many images of the future as possible, and to help my students—and my clients—to consider these images fairly and thoroughly.

But no one can consider them all, and so after a great deal of looking and thinking over many years, I finally realized that all of the millions of different images of the future are specific variations of one of four generic, basic, fundamentally-different images. The labels we have used have varied over time but now we designate the four Grow, Collapse/New Beginnings, Discipline, or Transform.

Grow One image, still the brightest

and most clearly seen, is the image of Grow—typically meaning continued, or renewed, economic growth. One version of that image began to form about 300 years ago, and became the official image of the future when the scientific-industrial revolution began destroying agricultural societies, propelling everyone off the farms into the cities in pursuit of profit, prosperity, and progress—endless, upward progress forever going forward, forever replacing the old with the new. Economic development drove all other kinds of development, and all other kinds of development were aimed at producing still more economic development globally and without end.

Modern science and technologies vastly increased humanity’s abilities to manipulate nature in ways impossible before. Science and technology led to the development of new cheap and abundant energy sources—first coal and then oil. Without cheap and abundant energy we would still be living in feudal squalor.



Because of cheap and abundant oil, modern methods of urban sanitation and medicine enabled more people to be born, thrive, and live to ripe old ages causing massive and sudden local and global population growth. Because of cheap and abundant oil, some members of ever-multiplying humanity were able to be fed, housed and clothed more extravagantly than ever before.

Because of science, technology and cheap and abundant energy, new forms of transportation were invented, quickly replacing human, animal, wind, and water technologies that had persisted for thousands and thousands of years. The railroad, the steamboat, the automobile, the airplane, the railroad system, global shipping, inter-continental highway systems, global airline networks. Distance almost vanished.

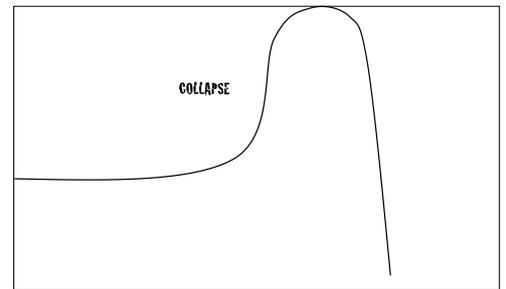
And then both time and distance did vanish with the advent of electric and electronic communication systems that knit us together at the speed of light—all because of science, technology, and cheap and abundant oil.

It is as though both the film and the movie projector vanished, while many parts of the world have become just a blur of cosmic light as the astronaut/poet Story Musgrave put it, in part:

*Falling into sleep,
Drifting into dreams,
Cosmic crashes in my eye,
Cosmic flashes in my brain
Cosmic rays and Wilson clouds,
Clear my consciousness.
Memories of infinity,
Particles of eternity
Starlettes pierce my eyes,
In my brain fire flies.*

Collapse But wait, many other people cried out!

To grow simply for the sake of growth is the logic of the cancer cell that eats its host until both die. Continued economic growth not only has destroyed all of the good things about previous cultures but is clearly killing Earth and all of its inhabitants as well. We are in the midst of the sixth great extinction of life on Earth. The first five



extinctions were the result of natural processes. The sixth is entirely the fault of humans who think themselves to be superior to other animals. Moreover, in our mindless pursuit for growth, we have lost any sense of ethics or morality, so blinded are we by the false glitter of gilt, gold, and greed. Both communism and capitalism were aimed at outgrowing the other; neither questioned the goal. It is not the case that one was successful and the other failed. Both are failures, one

Photo: Bram Goats.



Jim Dator in Brussels.

simply collapsing before the other, and neither distributing wealth fairly, equitably and with no irreversible environmental damage.

It was also fortuitous that global climate during the past 300 years has been unusually stable and predictable, enabling, along with oil, food production to keep up with population growth. But the period of climate predictability is over. Largely chaotic climate change itself will persist, and so we have been thrust out of the largely-benign Holocene geological Epoch into which *homo sapiens, sapiens* evolved little over 10,000 years ago, after the last Ice Age, into a new geological Epoch, called the Anthropocene because of humanity’s major role in creating it.

Humans emerged into a Wilderness upon which we could rely for abundance. We chose to change the wilderness into a Garden that we must diligently tend. We seem now in the process of changing the garden into a wholly-artificial Iron Lung that we must constantly create, govern, and re-create in order simply to survive.

And yet we do not focus our attention on designing, inventing, and operating our artificial world. Instead we continue to focus on growth, and on ancient ethnic animosities, wasting time and resources preparing for and fighting endless wars over nothing while the time to extinction slips relentlessly away.

As a consequence, all societies have either collapsed or are in the early stages of inevitable collapse. Just how far will this collapse go? To the extinction of humanity? Or the extinction of all human technologies and institutions since agriculture, industry, and electronics? Are we moving towards new forms of hunting and gathering societies, or at least of agricultural societies dependent on animal and human energy and materials for the most part?

If so, then total Collapse gives humanity the great chance and obligation to start all over again—to experience a new Garden of Eden, within which we may learn to be content and happy, or from which we may learn to evolve gracefully, peacefully, cooperatively, meaningfully.

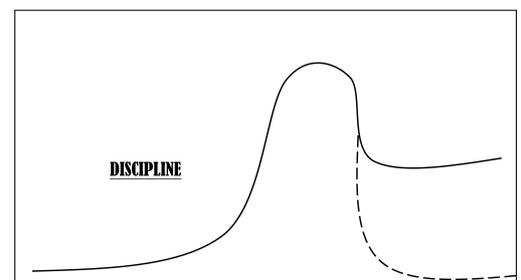
So are Grow or Die our only alternatives? Is there no way that humanity can step off the suicidal path to endless growth other than by stepping on the equally-suicidal path to collapse, even with the hope of new beginnings?

Discipline

Yes, of course there are alternatives, shout many voices!

We have known for a long time that we must learn to thrive without continuous economic growth; that there are many values far more important than simply endless material possession and consumption. More and more people have come to embrace voluntary simplicity —“Live simply so others may simply live”, they say. They live according to the laws of nature, or of God, or of some other ideology or belief system to which they are convinced they should offer their service.

This image of the future can be called Discipline. However, the term does not mean forced obedience, though in some circumstances that might be necessary. Overwhelmingly, Discipline means voluntary obedience to a higher cause



from which one receives much greater satisfaction than could possibly come from selfish greed and material possessions.

The world is full of good examples of disciplined, sustainable communities now. For a short period during the late 1970s the Science Council of Canada took it as its duty to change Canada from being a

mindless, destructive “Consumer Society” into a healthy “Conservator Society”. Many Canadians spent a great deal of time and effort visualizing and planning for what a “conservator society” might mean in various contexts.

Unfortunately, the project was killed by the far larger and better financed interests behind continued economic growth, but now is the time for a revival of the concept not only in Canada but everywhere in the world. Fortunately, there are many actually-existing “conservator societies” from which the rest of us can learn.

Transform

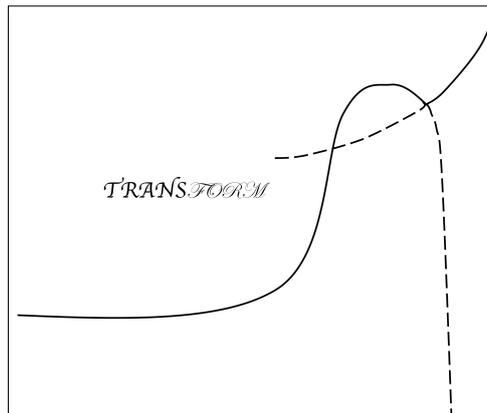
No, no, say other voices still.

While Continued Growth as practiced is unsustainable, neither Collapse nor Discipline are acceptable alternatives. The Anthropocene is real. Humanity and our biosphere are in the midst of a profound transformation. If we can nurture it into being, we can lead humanity, and post-humanity, into experiences and values never before experienced on a planetary scale.

We are transforming society as surprisingly as a humble caterpillar is transformed into a beautiful butterfly, or liquid water is transformed into steam or ice.

A world of abundance and leisure with humans, transhumans, and artefacts on Earth and the inner solar system is potentially imminent. The timid views and actions of “sustainability” are unimaginative and uninspiring, they argue.

Robots, artificial intelligence, autonomous entities, cyborgs, artefacts, ubiquitous technologies have already just about taken over all manual and mental jobs that once upon a time only humans



could do. New, real jobs requiring human labor and intelligence will not emerge to take the place of the old, necessary jobs the robots have taken over. A world free of meaningless make-work should also be a world of great creativity. A Dream Society. A Creative Society of leisure, abundance, play, and full unemployment!

Very importantly, I did *not* make them up. The four futures are each based on extensive evidence produced by concerned people who are earnestly trying to understand what lies ahead—and coming to very, very different conclusions. It is my duty as a futurist to help you consider each of the four futures fully, fairly and usefully.

And it is your duty seriously and fairly to try to understand the evidence supporting each future before you decide what you think, and what your preferred future is.

So whenever you think about and plan for the futures, always think about and plan for **all** four equally seriously and fully. Don't privilege one over the others.

But as you do plan for preferred futures, please remember Dator's Second Law of

If we had known to look for them, we would have seen that these four images of the futures have always existed.

Four futures

The four futures of Grow, Collapse, Discipline and Transform are not simply variations around a common theme, such as ‘high, medium, and low’, or “optimistic vs pessimistic,” or “pro- vs anti-technology”, etc. Each future makes very different assumptions about a number of common “driving forces”, such as population, energy, the environment, culture, governance, technology and the like.

the Futures which is that in a rapidly changing society, “Any useful idea about the futures should appear to be ridiculous.”

In truth, if we had known to look for them, we would have seen that these four images of the futures always existed throughout world history. Not only will these four futures always will be before us, but also they have always been here within us.

What might seem to be one clear path from the past to the present is in fact a matrix of endless choices and chances that

There is no such thing as a “normal” future from which all other futures are exceptions, and no images of the futures that are more plausible or implausible than any others.

have lurched humanity forward, sideways, backwards, upwards, round and round though time to the present—always the four generic images of grow, collapse, discipline and transform. What may be unique about us now is that the four images are so clearly and starkly apparent, on the one hand, and so clearly global in their impact, on the other.

Some nations and regions have experienced 200 years of comparatively steady economic growth—surely with episodes of collapse, discipline, and transformation. Japan, Finland, Singapore, South Korea, China are examples of quickly transformed socioeconomic systems, while others have experienced and currently are experiencing long periods of collapse or discipline, while hoping to find a path to continued growth.

But if collapse, which seems so very likely now to many people does become a worldwide experience, and if attempts fail to segue from discipline to grow, as many people believe likely, then so-called developed or advanced societies will have a lot to learn from those who have found ways to thrive and live meaningful lives in what currently-privileged people see as collapse or severe discipline.

One of the biggest lessons we need to learn from all of this is that there is no such thing as a “normal” future from which all other futures are exceptions. No

“most likely” future, and no “least likely” future either. There are no wild cards, no black swans, no images of the futures that are more plausible or implausible than any others. We are increasingly postnormal beings living in postnormal times. “We are all aborigines in a brave new world”. We need new sciences that include human actions—past, present and futures—into their understanding of the limits and demands of the unfolding Anthropocene Epoch for which we must become responsible.

Most urgently, we must learn to become visionaries and artists who are also skillful social inventors of communities on local, global, and interplanetary scales.

Humanity must face the mighty forces that bear down on us like gigantic waves. We are not helpless against them. We must study them closely, and learn to surf them with skill and enjoyment.

Can we do that? Yes we can.

Will we do that?

This exposition is intended to be one of many small steps being taken now to help humanity envision, invent, create, and re-create peaceful, fair, equitable, and evolvable communities for Earth and wherever humans, posthumans, and artifacts may humbly go.

Let’s come back in 25 years and see how we did. ◀



Jim Dator is professor emeritus of futures studies, Department of Political Science, University of Hawaii at Manoa, and editor of the World Futures Review.

This was the opening keynote address of the Design, Develop, Transform conference in Brussels.

There is a short bibliography of some of the many recent sources underlying each of the four images of the futures at the [DDT conference website](#).

Futures, meet design

by Peter Bishop

When they did APF

Gatherings back in the day, Christian Crews and Michelle Bowman held their events at sites that reflected the theme of the meeting. My favorite was the Future of Reality, including an early brief on *Second Life*, in Las Vegas of all places!

In June, Maya Van Leemput, a Belgian futurist, designer and video producer, did one better. She placed her Design, Develop and Transform (DDT) conference, which was supported by the APF, in not one, but two venues, both exquisitely suited to their purposes. The first day was held at Square, a meeting venue in the *beaux arts* section of Brussels.

It was perfect as Jim Dator opened the conference with a perfectly delivered (though technically challenged, not his fault) presentation of his four scenario taxonomy. Many of us were familiar with his idea that global scenarios could be classified as one of four types: Growth, Collapse, Discipline and Transformation.

But the clarity, cohesion and depth of the presentation, reproduced in this issue of *Compass*, was awesome, truly the legacy of his active and reflective life in the field. The classic auditorium was full, but not crowded. A great choice!

The second and third days were held at M HKA, a contemporary art museum in Antwerp which contained an exhibition, entitled *A Temporary Futures Institute*, that contained works by artists and futurists, each depicting one of the four scenarios. As Jim put it, “The exhibit showed futurists trying to be artists, and artists trying to be futurists!”



Peter Bishop chatting at Design Develop Transform. (Photo: Bram Goots)

APF members will recognize the futurists:

- Maya and her colleague Bram Goots constructed a three dimensional timeline of the field along with snippets of 300 video interviews they have conducted around the world.
- Stuart Candy from OCAD, and now moving to Carnegie Mellon, presented the NuturePod™, a virtual reality, sensory immersion baby seat.
- Mei-Mei Song from Tamkang University created a demonstration of the consumer experience in a world of discipline and high regulation to control pollution and waste.
- John Sweeney and Zia Sardar hosted an exhibit about his and others' idea of a post-normal era that follows the

traditional, modern, and post-modern eras in turn.

- Finally, students from the Situation Lab at OCAD University staged an experiential scenario in which a toy puppy addressed the audience about how it could be a good friend to children. Spooky!

The artists' conceptions

were beautiful, deep and ultimately ineffable to an artistic nebbish like myself. Fortunately, Anders Kreuger, the exhibit curator, took some of us through the exhibit, both its history and the relation of each piece to the four scenarios. Even the walls were printed abstractions of the bread fruit tree by Alexander Lee, an artist from Tahiti.

The conference attracted equal numbers of designers and futurists, demonstrating by their presence and by this venue steeped in the traditions of both, that foresight and design are natural allies to make images of the future relevant to ourselves and to others. Foresight describes; design creates. How perfect! We should get together more often! We're dating, but haven't yet committed to a formal relationship. But if this conference is any indication, the consummation is not far off. ◀

Peter Bishop is Executive Director, Teach the Future, and is based in Houston, Texas.

Designing tomorrow's child

An interview with Stuart Candy



Photo: Bram Goots.

Compass: What we have here is a very small baby—not a real baby—in a little pod surrounded by all sorts of digital stimulus looking after her or his needs. This is a “programmable para-parenting pod”, which basically removes the need for parents to get involved, as far as I can tell. It’s a bargain at €789, obviously. What was the brief, Stuart?

Stuart Candy: The brief for “A Temporary Futures Institute” was to create some kind of a design contribution corresponding to Dator’s generic images of the future; grow, collapse, discipline or

transform. I was assigned “transform”. I had this quite large space and could basically do anything that fit the budget and time. To get from those broad parameters to the final installation really started from the name. There was a prior project (which appeared in *Compass*) called NaturePod, a hypothetical product from a handful of years away, addressed to stressed-out office workers who may need to reduce their cortisol levels and increase productivity by spending time in nature

TRANSFORM

without leaving their cubicles. That was a provocative take on what happens when you marry supposedly biophilic interior design trends to virtual reality.

Compass: So this is a kind of companion piece?

SC: Right. It came about in a conversation with my longtime collaborator, Jake Dunagan — a lot of our work is based on wordplay and being silly — and he said, “well, when you’re done with NaturePod, you should do NurturePod, ha ha ha.” He was joking, but I thought it was a brilliant idea. Then this opportunity came along, and I realised that while this might not be my idea of a transformation, it does actually correspond to a popular notion about what immersion in virtual environments means.

Compass: It comes with all this very nice packaging and sales material. Clearly something about the commercialisation of it engaged you.

SC: A lot of the experiential futures work I’ve done is about bringing encounters with futures into an everyday context. Hence guerrilla futures projects like NaturePod; we launched it at an architecture and design trade show, so the people who came across it thought it was real. The organisers of the trade show knew what we were up to, but the thousands of others attending didn’t. I was interested in trying to import the lessons and techniques from creating encounters “in the wild” into the cube of a contemporary art museum. That’s why this piece is not sitting on a white box; it’s sitting on the kind of table you might find in an Apple Store.

Compass: The NurturePod box has all the kind of labelling detail you would expect to see in a package. Is that part of the experience as well?

SC: I think the attention to detail that makes a hypothetical resemble the real is an important part of this practice. It is intended to invite, not a suspension of disbelief exactly, but more an investment of belief, a kind of willing desire on the part of the viewer to say okay, suppose that I did come across this in a few years' time. What do I think about that? What do I feel about that? I think the details provide added dimensions of engagement so they can dive deeper, if they want to. Most people are probably going to engage

with the main image; a glanceable, instagrammable baby in a pod wearing a headset. But for those who take the time, there is more detail to enjoy, or be dismayed by, according to your taste.

Compass: There's a little tag, "control baby's experience with the NurturePod App", and a kind of WiFi, Bluetooth-type logo suggesting I can download it. I haven't actually tried to do that; I'm guessing that bit might not be real?

SC: That's right, it does break at a certain point because it isn't real, but it's supposed to feel like it is. All of these messaging elements are scaffolded in detail on existing products, and existing idioms that

we recognise subconsciously, being citizens of the early 21st century. We're literate in ways we don't even realise about the semiotics of marketing, and electronics in particular. This is using that language to get something across about a seemingly imminent possibility.

Compass: One more thing that strikes me about this, about the languaging, is it's not just about marketing. There are a whole lot of cues about the idea of the new, the idea of the modern, and the classic ways in which technology companies make us feel inadequate and then sell us reassurance.

SC: I suppose using those tropes could be said to invite reflection on how embedded in the tropes we are, because we know this particular thing doesn't exist. But that's a bit of an intellectual angle. I find people's emotional responses interesting, from watching them interact with it and from what they've shared in conversation.

Compass: What sort of things have they said?

SC: "I'm really drawn to this, and also repulsed by it". There's this sense of being torn, and that is quite satisfying to hear, because I think creating or inviting a complex emotional response is something that we should strive for in futures work. This is why design and film and performance and games are important — the whole repertoire of approaches to experiential futures; like the proverbial toothbrush that reaches places regular ones can't. Hopefully we are on our way to a better futures toothbrush.



Stuart Candy (@futryst) is an Associate Professor in the School of Design at Carnegie Mellon University.



Photos: Above left: Stuart Candy; above right and below, Bram Goofs.

Playing with collapse

An interview with John Sweeney

Compass: This is a story about collapse. I can see some black jellyfish, I can see black elephants, the whole postnormal futures tool bag but turned into an exhibition in a modern art gallery. What led to you taking this approach with it?

John Sweeney: For us, it was really an exercise in collaboration. Zia [Sardar] and I were really leading the overall construction of the exhibit, but we also worked with a design firm that helped to produce the elements. What that allowed us to do was to triangulate our thinking about concepts and ideas and methods and approaches that for us are critical in relation to collapse.

Also for us, I think collapse is always a conversation about new beginnings. We have often found in the response that people have to postnormal times is sometimes debilitating, and sometimes can be freezing, with the realisation of the immensity and the scale and the scope and the speed of changes that are happening.

Compass: People feel they lose all sense of agency.

JS: Absolutely. So the reason we decided to go with the game was specifically because it was playful, it was empowering, it was meant to be what is your perspective, how is your voice, how is your view participating in a broad conversation.

Then we have some other pieces that are more passive so we have timeline distinguishing content between different paradigms or periods, not as a means of separation but to show actually the points of connection between them. We also

COLLAPSE

wanted to make it very content rich but not have it feel as if you were obviously coming to a museum and getting a lecture, so we've got a guide book. The banners themselves are really meant to deliver content in a way you can read but you can also see and feel. So for us, it's a



Photo: Bram Goois.

tapestry of different things really pulled together. We also wanted the game to be something that wasn't just Monopoly or Risk, but something you can come in and see it as a real infinite game, that it wasn't about winning, but about continuing and participating in a conversation.

Compass: Tell me about how the game works.

JS: The basic user experience and the premise of the game is that to navigate postnormal times, and a lot of the challenges and also some of the opportunities we see coming over the horizon, we need to think about and have conversations about values. How do we put values at the fore of the work that we do in futures, so that we can participate, not just creating our preferred futures but also helping to decolonise futures where needed?

So for us the game is about a variety of emerging technologies. We have augmented realities, surveillance, the attention economy, antibiotic resistance, ubiquitous computing, pocket drones. What we've asked people to do is to pick up these and then pick a value. We have some pre-created values from different cultural contexts, we have *abimsa*, we've got a variety of values from the Islamic context and from Christian context. We also have things like transparency, ingenuity, play, to get people to make connections between that and to participate with the cards that are already there.

So if I pick up, say, the card on augmented reality surveillance and someone here has played the card on compassion and ingenuity, then you can go over to the iPad and you can type in a bit of a narrative to capture that. We are going to collect all of this and make that



available. In some ways it's a way to crowdsource images in the future, but we also feel that it's an opportunity to have conversations, not *about* collapse, but *around* collapse, because I think there is a lots of really interesting insights and maybe even fears that people have about some of these technologies so if we can have it as a conversation and certainly have a space to do that that's what we really wanted this to be. ◀



John A. Sweeney is Deputy Director at the Centre for Postnormal Policy and Futures Studies as well as the Global Futures and Foresight Coordinator at the International Federation of Red Cross and Red Crescent Societies.

Photos: Bram Groot.

Face to face with limits

An interview with Mei-Mei Song

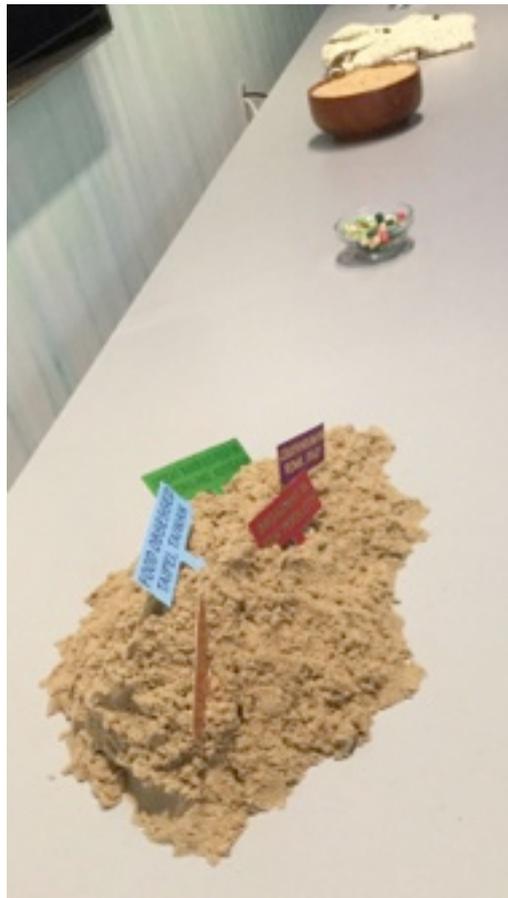
Compass: Mei-Mei, you were given 'discipline' as a theme. How did we end up with these exhibits we've got here, which are a story about carbon credits and money credits, as far as I can see.

Mei-Mei Song: I constructed this scenario with a colleague of mine, Dr. Shang-Hsien (Patrick) Hsieh. He's one of the major contributors to this, and my son has worked on the visual part. [There is a photo of Duanduan Hsieh's advertising posters from this future world on the next page.]

I took this idea from some of the workshops I conducted, and the idea was that, if we want to talk about the environment, if we want to talk about sustainability, oftentimes it's not integrated into the system. So in a way it's just talk. And one of the ideas in the workshop was that we needed to turn sustainability into money, that's how you can do the stock exchange and exchange carbon footprint in a way. I took that idea as a beginning and then I conducted an expert workshop with this idea in mind. That was the scenario, and then I worked with Patrick to construct the detail of this scenario.

Compass: Let's just come over to these works here. Each one is connected to a sensor. Let me just pick this one as example.

MMS: That's sand. The product is VR travel, and in this scenario you don't have to travel anymore, because in a way it's



unethical to be travelling, because of the large carbon footprint involved. So in this scenario you don't have to put on a gadget anymore, you just go to a VR room. It's like a hotel You stay there and you get VR trips.

Compass: I'm pleased I was allowed to do this one today, because I tried to buy it yesterday and I wasn't allowed to, so my carbon footprint must be getting better.

MMS: [Laughs] Yes.

Compass: How did you get to this selection of objects? There's five objects here and I'm guessing they represent some sort of cross-section. We've got some food, I think.

MMS: Yes, this is the high-tech water capsule over here. This is a luxurious item, because it's quite expensive for one tablet. Here, the software says you're not allowed to buy it and we suggest you consider some more basic resources, instead of this luxury item.

That one, TruRice, is a more of a basic item that people should need. It's grown from earth, from ground that's fertilized in a natural way instead of being fertilized in chemical way. It also might become a luxury item further into the future.

Compass: And that's clothing over there.

MMS: That's third-hand clothing, of course, we're trying to make it unethical to buy new clothes anymore, so you have to recycle and recycle. The main idea is that you have, I don't know if you noticed,



DISCIPLINE

Photos: Bottom, Bram Goots, Centre, Andrew Curry.



Photo: Brum Goots.

you have different types of citizenship, you can choose your nationality. Apparently you're gonna have multiple nationalities. People are still protected, in a physical sense, by the country that they reside in. But other than that, they can choose which country that they pay tax to, and you can see there are different varieties of discount from those countries.

Compass: These are the posters?

MMS: Advertising. Because if you have merchandise you have advertising.

Compass: One of the things I liked about this was this problem about not having CFPs [Carbon Footprint Points].

MMS: Yes, we're only human, we try to control it but some people just have to have more.

Compass: I also liked this, although I'm not sure if it's a film or a book...

MMS: It's a book.

Compass: I can see that it's based on the idea of 12 Years as a Slave, or something like that?

MMS: Right.

Compass: Except it's a robot.

MMS: Yes, this is a robot.

Compass: This is to give us a sense of we're in the future, rather than being another piece about the footprint points.

MMS: Exactly. And for that one I really like it, because in that future, just like in the workshop we held about the emerging future, that robot is our spiritual guide. They're not just some low level labour that we envision robots to be these days. They are superior to us in a way. And this is a creative robot, that's why he writes too.

Compass: What else should I be looking for in this future?

MMS: Did you notice that the countries have changed?

Compass: Oh, I hadn't noticed that, no.

MMS: That's something that people often miss. This is apparently a concert ticket for sale. This is a band, a hologram band. But the point is actually this. They are having a world tour at the same time on the same day, which cannot be done by a band today. But then, as you can see, the countries are a little bit different, we dissolved the bigger countries, because in

our assumption bigger countries are bad for carbon footprint, so we took away Russia, the USA and China. Not in the sense that they were conquered by other countries, but in the sense that it doesn't make sense to be big. We wanted to challenge the assumption that countries have to be bigger to be stronger and that that's more desirable. In this case it could be smaller and yet better.

Compass: I also did notice the little stars which say that the concert is still pending approval from the Committee of Censorship in Indonesia and Colombia.

MMS: There is still censorship somewhere in the world. ◀

Mei-Mei Song, EdD, is a futurist and an educator. She is an Associate Professor in the Graduate Institute of Futures Studies at Tamkang University, Taiwan, as well as the Founder and Director of the Center for Futures Intelligence and Research (C-FAR) at Tamkang.

Constructing the futures

An interview with Maya van Leemput and Bram Goots

Compass: So this is a multimedia piece. There are three elements here: the timeline running across the floor, a conversation piece with 17 different video screens, and the Toynbee Convector photo series. Let's start with the timeline, which I love because it reminds me of the futures map in the Future of Futures book the APF did in 2010, but you've brought the history of futures to life in three dimensions. There are blocks with four different heights here.

Maya van Leemput: Futures studies hasn't always existed, but people have thought about futures and the passing of time for a long time. At the bottom layer there's that old thinking and that deeply rooted cultural layer of thought and feelings about futures. That's the first layer, the lowest layer. We've marked all the year zeroes in the different religions. Confucius is here, people like that. And then in the second layer we've put everything that's about science and philosophy, treating futures but not specifically dedicated to futures.

Compass: That would be things like Ibn Khaldun and Robert Boyle. We're at the early stages here.

MvL: And then the next layer is everything that you might label fiction. It's literature at first, and later on it becomes film, especially science fiction movies.

Maya van Leemput discusses the timeline with Jim Dator. One of the Toynbee Convector images can be seen in the background. (Photo: Bram Goots)

GROW

Compass: So layer three includes Thomas More and William Morris.

MvL: And Mary Shelley.

Compass: And HG Wells' science fiction. Now, we've moved up the exhibit to the modern period, where we've got lots of third and fourth level stuff. Here's H.G. Wells again.

MvL: In the fourth level, because this is not fiction, this is HG Wells, in 1902 with *Anticipations*, and again in the thirties when he again asks for professors of foresight to become part of academia. And that's the first moment we see dedicated futures emerge. All of these in the highest layer are either groups or people or publications that are specifically and exclusively about futures.

Compass: And moving into the '60s and '70s, you start getting into all the high fourth level blocks, it's like coming into the city.

MvL: That's when Mankind 2000 happened, the first futures conference. And the Shell scenarios, with Pierre Wack.

Compass: Over here we see Alvin Toffler rubbing shoulders with Donella Meadows and the World Futures Studies Federation being created.

MvL: Yes. We included the French as well, of course, since we're in the middle of Europe. I also always like to point out, when I give guided tours of this, that we've got Fred Polak there in the 50s, in the original Dutch with the Dutch title. I've tried to read it in Dutch, but it's so archaic that I prefer Elise Boulding's translation, *The Image of the Future*, which came quite a bit later.

Compass: Yes, the Dutch version is '53 and Boulding's translation is in the early '70s.

MvL: And her translation made such a big difference, it meant so much for our field.



Photo: Bram Goots.

Compass: I love the story about her translation, because she and Kenneth Boulding invited Frederik Polak to come and stay in their summer house in California, having taught herself Dutch to do the translation, so she could ask him questions while she was working on it. I've always thought that's a lovely story.

M: Yes, it's fantastic, and that's what we're trying to do here in a way. I also put Jim Dator in for his generic images of the future in the '80s. He was here earlier, where he started teaching at Virginia Tech, but when Jim visited and he noticed that he was in there twice, he thought that's too much.

Compass: So he's taken himself out?

M: No, we've turned it over. Actually, people can still add points and write all suggestions of crucial moments in time for futures that we could still add, there are blanks.

Compass: So there's a question about what's going to happen happen to this next, because obviously it I's portable.

MvL: It's very heavy though.

Compass: Yes, you'd need a truck. Is this going to end up in your garage?

MvL: In our studio. We don't have a final destination for it yet.

Compass: And the second question is about how it's going to be captured before it's dismantled at the end of the exhibition. Because every futurist should walk through this installation.

MvL: Bram's been filming and photographing at this exhibition quite a lot already.

Compass: I think you need to do a fly through with a drone.



MvL: That's a good idea, we should try and get permission to do that, we've been getting some drone experience recently.

Compass: Let's move from the timeline to the conversations.

MvL: Bram's the cameraman, I'm the interviewer and together we've been working on the project since 1999. We call ourselves Agence Future, for which we interview people around the world about their ideas of the futures. We interview experts, we interview lay people. We have in-depth, semi-structured interviews that last for hours, but we also do quick street interviews for orientation. We've got material from the year 2000 until now. We've got 17 streams, and we're actually showing rushes of these interviews. It's a one hour extract of all the things that people have said to us over the past 17

years about the futures when we've been interviewing them. You can hear all the things they say if you sit there for an hour. It's very varied and some of it will make sense to you and other things will make sense to somebody else. That's the piece.

Compass: And the Toynbee Convector?

Bram Goots: Toynbee is a game we first played in Prague in 2005. It's based on [the Ray Bradbury story](#), and we recently played it again at the Tamkang University conference last November. Basically, I'm the time travelling photographer, so I can go and capture or find a useful image of the future. During the conference Maya had moments where we gave order forms to all the participants and they could actually order their image. And then afterwards I stayed in Taipei for another two, three weeks and I went out to look for those images. About eight of the orders are playing here now. ◀

Maya van Leemput is a professional futurist who combines research and consultancy with a creative multi-media practice.

Bram Goots is a photographer and a videographer.

Photos: Bram Goots.

All photos: Bram Goots.



Above and right: Artist, storyteller, and nature guide An Mertens leads a group looking at “alternative futures” through the lens of some trees in a park close to the museum.

She identified trees that corresponded to the four archetypes of grow, transform, discipline and collapse.



M HKA curated pieces from contemporary artists for the Temporary Futures Institute. Two favourites: *My Own Private Angkor* (above) by Simryn Gill, who photographed the glass plates left as thieves stole frames from a deserted housing estate. Second, a continuing video project by Lithuanian artist Darius Žiūra. He revisits his home village every three years and films those who are there each time. Some years there are gaps. Both gave a strong sense of time passing. (AC)

Letter from Seattle

by Emily Jaworski

Dear Compass,

This letter shares some of my experience of being at a Gathering as a student first-time attendee. A small disclaimer before I start: I wasn't able to attend several of the auxiliary events, so there's nothing here on the Hololens test at Microsoft or the alternative trip to demo Oculus, the P2P breakfast on Friday morning (which I heard was a favorite of many) or the hike to Rainier on Sunday.

Thursday

The reception Thursday night went off without a hitch. As a student, I was nervous about being able to hang in the company of the 'P' in APF, but everyone was friendly. I had met a few members in the lobby earlier in the afternoon when I tried to sneak onto the Hololens tour (they couldn't take me), so I was alright to talk to a few other members when they got back from the Oculus demo. Did you know Tim Morgans's wife does competitive costume making, and he makes the props?

Shout-outs to David Hamon for taking me under his wing and helping guide my conversations, student assistant Arunabh Satpathey for being an instant friend, Maria Romero and her husband Jason Crabtree for

Seattle: glass, steel and sunshine.



reassurance, insight and inspiration.

Everyone in attendance: radiant attitudes, thank you.

Following the reception I began working my way down Richard Yonck's restaurant suggestions in the program; I ended up hitting up six out of the first 10. If any of you ever find yourselves in Seattle, download the pdf of the program. His list is flawless.

Friday

At ten to eight I'm in the lobby hoping to find some futurists

milling about so we can walk over to the library together, but no luck, and just as I'm resigning myself to making it by my lonesome, Cindy Frewen, Jay Gary and Sam Miller burst through the elevator doors, march through the lobby, and are high-tailing it up the block. I catch up and hang back with Sam, marveling at Cindy outpace Dr. Gary up the incline.

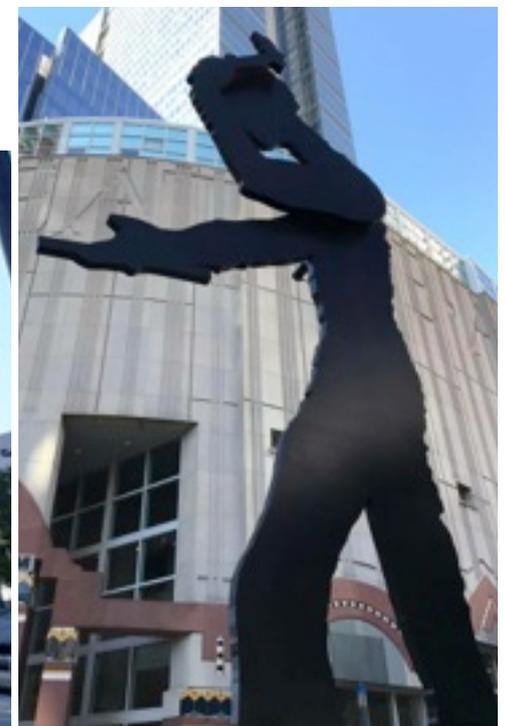
I'm glad I tagged along, because the Seattle Public Library is nothing like the Masonic buildings of most major cities: it

Emily Jaworski is a new student member of the APF. She was able to attend Seattle, her first Gathering as an APF member, before moving to Taipei to join the Graduate Institute of Futures Studies at Tamkang University.

The photos in this section are by Tom Frey and Jay Gary.

is huge, glass and steel, jutting out at impossible angles. A bright green elevator in the lobby opens up to an impossibly red floor where the meeting rooms are nested. Red lacquered tile meets red curving walls that blend into a red, red, ceiling, and behind a red door was our white and airy room where the Human and Planetary Health panels were held.

The speakers were from various fields in health, distribution, and planetary development. Each gave a tidy rundown of



their work, its impact today, and what challenges or triumphs they saw in the coming years. Only one speaker described implementing foresight strategy: her team at the Gates Foundation had cooked up three scenarios that she asked us not to reveal publicly. What I can tell you is that most of the room raised a collective eyebrow at the rosier scenario overlapping with the team's version of the 'most likely'.

Another fun surprise that day was the underwater volcanologist, John Delaney, opening his lecture with a Pablo Neruda poem from memory. His presentation would go on to include a simulation of choreographed unmanned underwater vehicles sequenced to music, a dry joke or two and close with a haiku comparing the ocean with the milky way recited in its native Japanese. He could barely contain his passion for the subject he spoke on, evident in how he completely ran the clock on his presentation.

Brian Arbogast's presentation about the challenges to sanitation infrastructure in rural India had me whispering "I appreciate you" to a toilet in the Library during a bathroom break.

Jason McKenna, fresh from the jungles of Colombia, and dripping with jetlag, introduced us to the Living Institute's building standards which create their own energy while increasing local biodiversity, encouraging architects to design buildings that "are the best version they can be rather than better, or less bad." He was also the first to inject the theme of humanity's bottleneck into the conversation, one that would recur throughout the weekend.

Afterwards it was a short jaunt from the library to the awards ceremony at the Mithun Inc architecture firm, prompting the first of many "how many futurists...?"

jokes to be told that weekend (How many futurists can you fit in an elevator? How many futurists does it take to fix a microphone?) Housed inside Pier 56 on Seattle's waterfront, Mithun Inc. is dominated by open space and wood. You can't help but gawk down the wall-less hallway flanked by open studios, offices and work areas where marvelous mock-up dioramas made from topographically cut cardboard are displayed.

It was apparent that the architecture firm was no stranger to hosting events: there was a large kitchen, patio, and performance area. Servers and bartenders weaved around in slick, black outfits. The event couldn't have been held on a better day, at a better time. Right on the waterfront, opening up to a panoramic view of the ocean. Amazing hors d'oeuvres, and I hope you tried the APF's birthday cake from local and famous Dahlia bakery.

The awards commemorated the work of the past year; a tidy sweep from OCAD and Finland on the student side reinforced the global aspect of this organization. The ceremony itself was full of nostalgia, spotlighting the 15-year anniversary of the first gathering that took place in the same city. There were a handful of awards given out to honor those who had given their time between now and then.

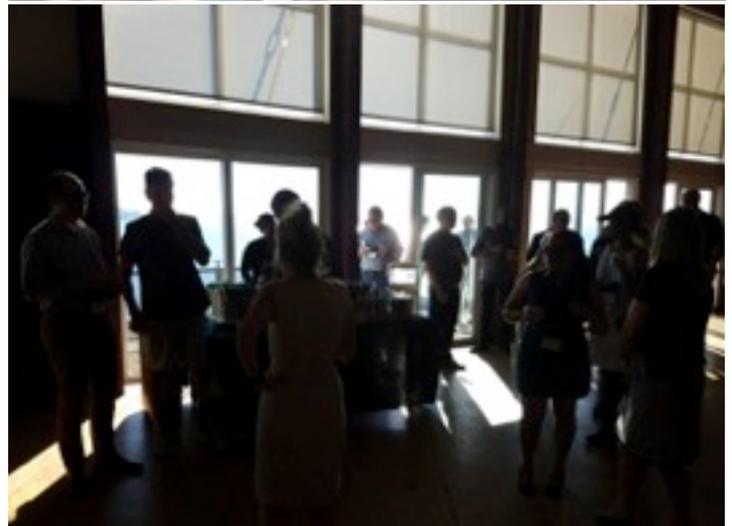
But it was the introduction of the Cindy Frewen Award

Right: Hanging out at Mithun Inc.

that had me fanning air at my eyes to stop them from watering. You might be able to guess who won and why. It is a beautiful statue of clear crystal housing deepening shades of beautiful blue hues, because as Cindy had once said, "With awards, people will always display the crystal."

Saturday

Saturday morning we were on a bus to the Boeing Museum of Flight outside of the city center. The room was expansive and panoramic, with floor to ceiling windows that looked on to an airstrip, and all manner of aircraft taking off and landing. After breakfast, a projection screen was pulled down and we were treated to a film shot in the yellow and orange hued '60s, when the future was just around the corner. It followed two teens to the Seattle World's Fair (1962, in case you're wondering). The couple was delighted by





Left: Jim Delaney gets into his stride.

presentations. Linda Groff went first, spinning her new book's outline impossibly fast. The DaVinci Institute's Tim Frey, Verne Wheelwright on retiring, and fun post-capitalism stuff from Andy Hines.

We reconvened for the Science Fiction panel after time out for self-led tours through the museum. Author Brenda Cooper opened with the idea of using science fiction to start a compelling narrative of the future, and “using this to create a seachange in a company’s vision.” The idea is backed up with a competition for a science fiction piece revolving around visions of the future. You can view the prompt, her entry and the work of other contestants at the fabulously designed Seati4C.com.

Next up: Scout.Ai founders, Berit Anderson and Brett Horvath. Scout.Ai pairs long read science articles with short fiction pieces, which go together like fine wine and cheese. Scout.Ai uses science fiction as a tool to make connections and help readers draw conclusions, in ways that the rules of journalistic integrity don't allow for. As they explained, “as a journalist you are supposed to be

the recent advances by Pacific Bell, such as call waiting, conference calling, speed dial and the pager, and also the ability to simply “call home” to turn the oven off.

SPACE! You already know its the final frontier! I can't get enough of this stuff and finally neither can capital. As all of our speakers were resolute in sharing: The first trillion to be made will be in mining asteroids. Bigger than the industrial revolution, and having more value than all of what crypto-currency has to offer. Despite this prognosis, that doesn't mean there aren't challenges. From the physical limitations of chemical rocket design (kinda hitting the wall on this one), to the general absurdity of man that led Stephen Hawking to say we have 100 years to get into space before its too late.

Former rocket-scientist, current APF member, and endlessly impressive

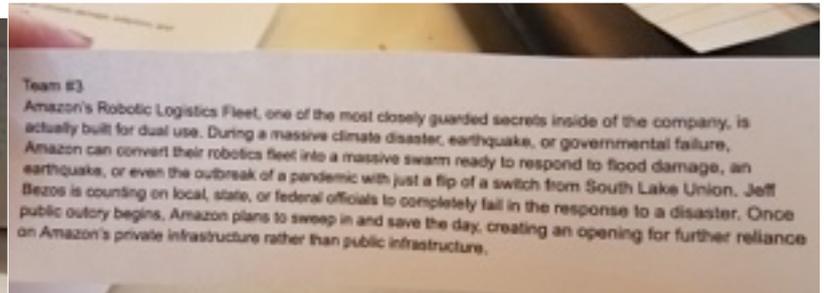
Near: Brian Tillotson on asteroid mining; far, Marna Kagele on governance in space.

Foresight Strategist for Boeing, Marna Kagele discussed the importance of developing governance in space. She posed questions like: How do we enforce property rights? Are we going to clean up after our own space debris? And what of space refugees? We learned about current space services, such as Spaceflight Industries, the self-described “space ride-share”, renting out spare room on spacecraft to launch your private ventures into orbit. And while the price per pound doesn't come cheap, it is a cost that is on a steady decline.

Between the space health and sci-fi panel, we were treated to member



Below: Kicking off the Climate Change Casino. Cheating allowed.



The day closed with a game called

“Climate Change Casino” based on Kim Stanley Robinson’s *New York 2140*, a book I am sure most of the conference attendees have picked up by now. We broke into teams that were turned into hedge funds, where we were given astronomical amounts of money to move around in a future Seattle.



Redesigning the future of Planetary Health. A design charrette on Friday evening.

objective, and not speculate, but with science, sometimes you *should* speculate.”

Earlier this year Berit debated with the Swiss prime minister on whether the internet promotes democracy, and after Brett’s debriefing of the Senate on the tools used by the G.O.P. in the recent presidential elections, her position was clear. There is no way I could do Brett’s jaw-dropping talk justice, and instead I encourage you to read the “[The Rise of the Weaponized A.I. Propaganda Machine](#)” article on Scout.Ai. I want the whole world to read this article.

We could choose to short or hedge our “bets”—investments in private companies (Amazon’s Robotic Fleet, Zuckerberg-Microsoft conglomerate) or infrastructure (think nano-graphene materials, levees, vertical farming etc.)—and try to come out on top, not through saving society but covering our own asse(t)s, and “getting off the rock.”

To spice things up, the emcees leaked different bits of “insider information” to the teams, which had a 75% shot of being true. We were encouraged to come up with our own strategies on sharing trade secrets during the break. There were three rounds of “betting” followed by a narrative of how things played out. Would the levees break? Would the robots take over? Would the agri-hacker co-op come out on top?

The grand-prize winners would be saved and safely deposited on Mars for Burning Man 2.0.

This was easily the most fun part of the conference. My team happened to include Boeing’s Research & Technology Senior Systems Technical Engineer (or some other such title), who had stuck around after his speech that morning. To say we had the smartest person in the room on our team would be an objective statement (look up the patents held by [Brian Tillotson](#) if you don’t believe me). He went from pushing up his glasses at introductions saying “I don’t think this is the kind of game where anyone ‘wins’” to “If you’re trying to steal company secrets, I’ll help distract” within a few short minutes. Deepwater, we were close. Third place is a small victory, but if we hadn’t played it safe round one we would have been high-fiving on the red planet.

So that’s it! After the games, some sweet good-byes, and reflections caught on camera we got back on our busses and back to a life explaining the answer to “So you try to predict the future?” Joyce Gioa encouraged me to attend the 2017 APF Seattle Gathering, and I’m indebted to her. I would encourage any student members of the APF to attend events in the future, with no hesitation. The experience and community are invaluable, and the student discount is more than welcome.

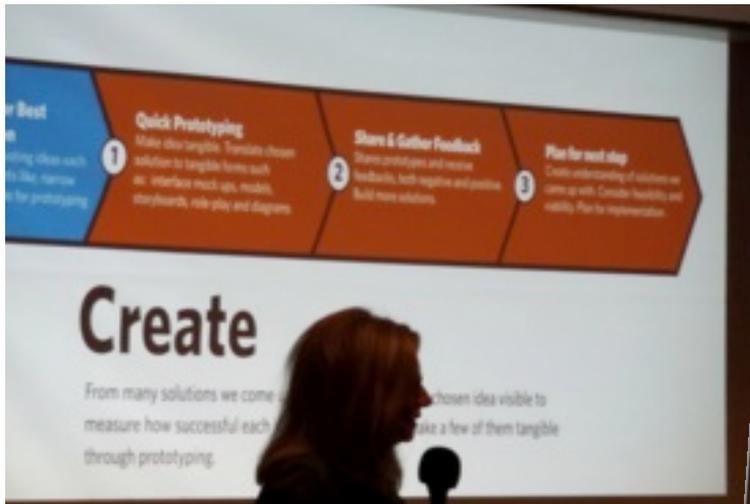
Emily

Seattle shorts

Long service. Five APF members who attended the first Gathering in Seattle made it back for the 15th anniversary event. Kudos to Peter Bishop, Jay Gary, Andy Hines, Jim Mathews and Lee Shupp.

Podcasting. APF member Mark Sackler recorded some short podcasts for his *Seeking Delphi* podcast from Seattle. Minicast #1 is on 'What is a Futurist?'. Minicast #2 is on the Global Health Futures session. And Minicast #3 covers Space Commerce.

Geekwire. Alan Boyle covered the Seattle discussion on asteroid mining for the [online technology magazine Geekwire](#). Brian Tillotson of Boeing was quoted as saying, "The big change that I foresee is when we begin to live and work on the asteroids, using them as the resources for our civilization. ... We are going to see a leap in productivity to create wealth and to allow us to do things without harming the Earth." ◀



Cindy Frewen, who stands down as Chair of the APF at the end of the year after seven years in the post, received the 'Frewen Award' in Seattle from the other members of the Board. Under her leadership, the APF has grown from under 200 members to over 500, in 40 countries; developed a global remit with events on five continents and a regular online Futures Festival; developed its program of publications and awards; and developed mentoring programs for Emerging Professionals who now represent a third of the membership.

It was an amazing gathering – venues, speakers, members, Seattle – all good. Starting with the Microsoft Building 99 Research Lab where they were hosting an annual hackathon (we can't share more than that), and we tried out the latest HoloLens, and ending on Mount Rainier. In between, we learned about the problems of sanitation and vaccinations in Africa, heard from people making a difference during the 'bottleneck' era of the next three decades, and the potential of asteroid mining and space exploration. Extraordinarily rare today-

3 attempts, 1 failure and the loss of a \$100m spacecraft. These companies are betting it will be BAU soon. Finally we tried out a new "Climate Change Casino Game" (Peter Bishop, Kimberly Daniels, guest Evan Anderson, and I won btw.)

All brilliant. I can't thank the gatherings team enough, especially Glen Hiemstra and Richard Yonck, our local hosts, or the people who spent their valuable time and made it memorable.

Cindy Frewen

Left: Andy Hines receives his APF Leadership award from Chair Cindy Frewen, and Vice Chair Jay Gary, at a small ceremony in Seattle.



Leadership awards

Five members were honoured in Seattle with APF Leadership Awards. They were:

Peter Bishop, as founder and creator of APF, for inventing the Professional Development seminars, and serving as Membership Chair for so many years;

Jennifer Jarratt, as founder and Board Chair, first Membership Chair, and Chair of Professional Development and Nominating Committees;

Andy Hines, as founder, first Board Chair, Executive

Director, and Compass Editor, and Chair of the Most Significant Futures Works and Professionalization Task Force;

Jim Mathews, as founder, Compass Editor, Treasurer, first Chair of the Finance Committee, and for creating a stable financial system; and

Andrew Curry, as Editor and Contributor for The Future of Futures and the Compass, Board Vice-Chair, and Co-Chair of London Gatherings.

Verne Wheelwright was similarly honoured in 2012, and Maree Conway and Ken Harris in 2015.

Fifteen years ago APF's Seattle gathering played a pivotal role to help me create my own work as a futurist in learning & development. Gathering in 2017, I found APF more diverse in terms of gender and culture, and more integrated into various foresight professions, whether that be executive development, marketing research, engineering design,

or foresight facilitation. The angst that characterized the early APF as a cohort of career starters was gone. The APF cohort of 2017, at least what I experienced in Seattle, are savvy, multicultural, multi-talented leaders, who know themselves and what they can offer the world.

Jay Gary

The future of trust

by Nigel Jones and Nick Price

The second workshop in the series of three being run by the IAAC (Information Assurance Advisory Council) and the APF in London explored the future context of trust in socio-technical systems. A report on the first workshop, on the nature of trust, can be found in the April edition of *Compass*.

It opened with a presentation by Dr Louise Bennett on the World Bank's 'Principles on identification for sustainable development: towards the digital age', [available here](#). The principles are listed in the box on this page.

Louise started by reiterating the trust challenges offered by Robert Hoffmann at the first workshop:

- 'Trusting' is dynamic and contextual, with notions of mistrust, as well as justified and unjustified versions of trust and mistrust;
- It is complex to place trusting relationships in a socio-technical context;
- This impacts on system design and function, as well as its relationship with people, particularly in the context of a competitive marketplace.

When these challenges are placed in an internet infrastructure that no one owns, and that no one organisation can control, the principles above attempt to shape a Federated Governance Model with principles on Identification for sustainable development enabling "no trans-boundary harm" and "mutual trust".

Louise argued that simple principles are required as grand schemes cannot work on the internet, because there are so many stakeholders involved. This set of



The World Bank's 'Principles on identification' in the digital age. Source: World Bank

principles had the added benefit of being created and sponsored by developing nations, offering something readily accessible in a way that arguably, for example, the EU GDPR ([General Data Protection Regulation](#)) has not.

Each principle is a part of an eco-system that champions universal coverage, by design approaches and strong governance.

Louise's presentation provided a highly relevant position on the future of trust in a global context, while recognising that there would be local variation in the implementation of the principles. Indeed, it highlighted that trusting is local in how it is performed, on the rights of individuals

and their ability to have those rights upheld.

The game

Part Two of the event was a game led by Nick Price, in which

groups used a series of cards as the inspiration for a future oriented discussion about trust in 2040. The image below shows a set of cards describing a break-out group's 2040 world and business, in which the future of trust would be discussed. Futurists will recognise the set of cards as Lloyd Walker's [MVIP deck](#), designed to enable rapid scenario development.



Photo: Nick Price

A series of observations emerged from from the game and the discussion:

- The need to develop sustainable communities in the face of economic and resource stress.
- Facilitating local production—moving from mass production to local micro-manufacturing. (Is the result of post-industrial society a return to cottage industries?!)
- Dealing with ‘post-code lotteries’ relating to differing levels of disruption, corruption, haves and have nots. Do we currently make an assumption of equity?
- Challenges of upholding universal human rights in local contexts.
- The rise of ‘smarter materials’ and the transparency of ‘true cost accounting’. (For example: in food production, [True Cost Accounting](#) is the process by which the full costs and benefits of different food and farming systems are identified, quantified and made transparent with the aim of ensuring that in future these are fully reflected in the cost of production for farmers, including the prices they receive for their product and the affordability of food for consumers and in relation to their impacts on the environment and public health for society as a whole.
- The delivery of services through a complex network of out-sourcing and service operations.
- The development of trusted and safe physical locations, and trusted and safe IT systems, resulting in multiple tiers of service and trust—people having to pay for more trustworthy systems and services. The corollary of this is the creation of less trusted and less safe places.
- The challenge of maintaining diversity in practices and cultures.
- The challenge of cascading effects in interconnected societies.
- The need for open data—perhaps a data commons (like air and sea?) to enable inclusion or reduce information asymmetry—and to enable transactions in a global information infrastructure.
- The need for Artificial Intelligence support for self-organising and learning systems.
- Privacy issues related to data aggregation and Artificial Intelligence.
- Distrust of science and the news ...and the AI mentioned above.

The discussion

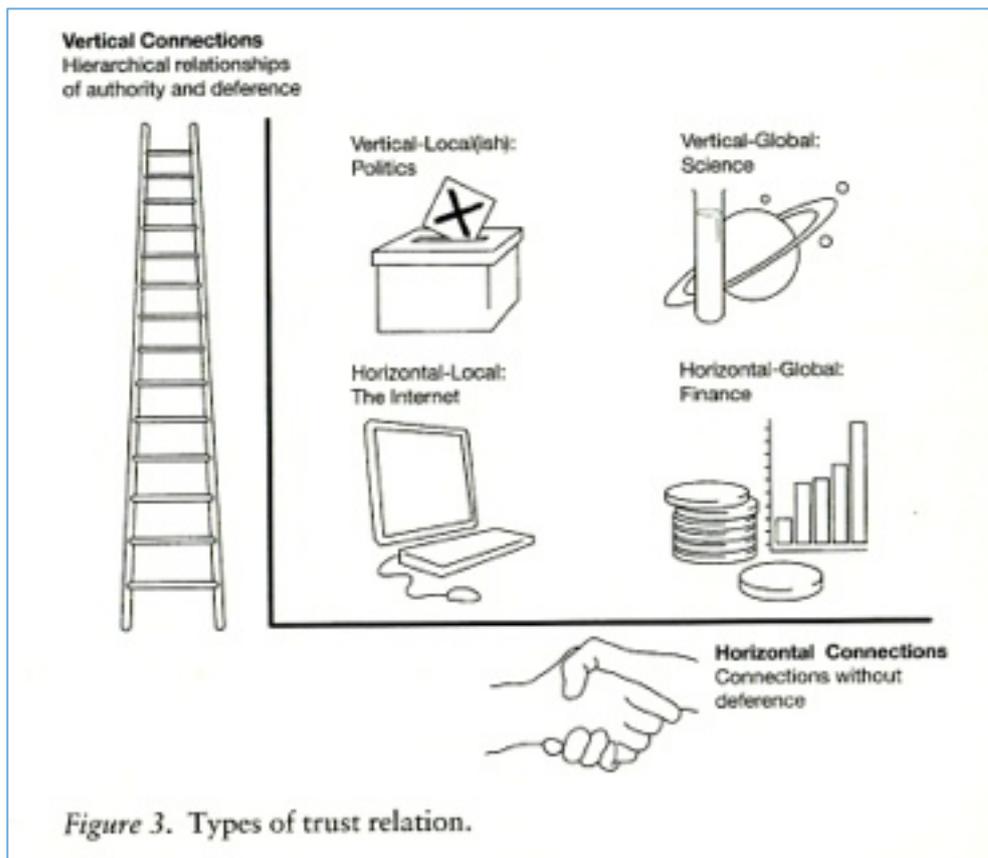
The futures discussed had a somewhat dystopian feel, driven by resource stress, inequity and environmental concerns and fears. Technology occupied an equivocal position that provides some answers whilst posing problems relating to privacy and e-inclusion. Different tiers of trust and safety might be seen as a pragmatic for those who can afford it, but it runs contrary to the universality expressed in the principles highlighted above.

As per the IAAC research relating to [smart-living](#), there is a balanced need for safeguarding of citizens in a connected and competitive market-place. Interestingly, the notion of sustainable local communities was seen as one way to provide resilience and networks of trust for the supply of services, whether digitally enabled or not.

This group is not the first to discuss community in relation to trust. Kieron O’Hara in his book *Trust: From Socrates to Spin* (Icon Books, 2004), discusses trust in society, including cyberspace, whilst Bruce Schneier in *Liars and Outsiders* examines how ‘security substitutes for trust’ and ‘compliance for trustworthiness’.

Writing in 2004, O’Hara examined four domains as indicated in the diagram on the next page, from page 93 of his book. He defined these domains by the extent to which they are local or global, or horizontal and vertical.

In 2004 he sees the internet as local and horizontal. There are few institutions governing the internet, and personal choices may be influenced by recommendations and inferences from advisers and other trusted sources. It is horizontal in that he sees it as being about equals on the net without deference.



Trust domains. Source: Brian O'Hara, 'Trust: From Socrates to Spin.'

He sees politics as vertical in that it is hierarchical, but (mostly) local in that there are 'remarkably few intuitions between us and them'. Finance is global and horizontal because it is governed by global institutions and regulations, but he retains personal control of where to put his money. Science is global and vertical because it is institutionalised and based on authority.

Trust and trustworthiness operate in different ways in these domains. In his chapter on 'cybertrust' he describes the risks related to identify, privacy and quality of information, largely reviewing aspects of information assurance and authentication. He outlines the 'axioms of e-trust' including:

- Trust in an adviser is transferred to recommended parties;

- Distrust in recommended parties is transferred to the adviser.
- Trust in all sub-contractors of an intermediary is transferred into inclination to trust the intermediary.

Consequently the 'local' nature of transactions on the web is aided by developing a network of trusted advisers, intermediaries and other in a collective network of trust. Writing in 2004, O'Hara goes on to suggest that these trust networks may in the future become more global in character as formal regulation and licensing is introduced.

Bruce Schneier, writing in 2012, acknowledges the complexity in the systems we use today. For example, eating in a restaurant may require us to trust a long chain of people and organisations, from the waiter, to the chef, the supplier, and the factory. He argues that society

works because on the whole we choose to collaborate so that we don't have to make personal trust choices with every interaction.

Rather, institutions, the constraints of social norms, regulation and security technology, allows us to work effectively and 'trust' that things are mostly going to work. In an RSA Conference [youtube clip](#), Schneier explains that he can use the ATM machine almost anywhere in the world and be confident that that the system will work.

He points out however, that in any collaborative system there will be viable alternatives for people he calls 'defectors'. These defectors, such as criminals committing fraud, can be successful, but not to the point where they kill the systems that feed them. The parasite shouldn't kill the host. However, he acknowledges that there will be people who want to break the system and that this is the fight of the security professional—and it is not guaranteed they will win. He finishes his book by saying that society needs defectors as it is through them we gain an 'immunological challenge to ensure the health of the majority.' ◀

Nigel Jones is Chief Executive of the IAAC, and Nick Price is a futurist based in Brighton.

The third workshop in this series will be held in central London on 27 September at the offices of the British Computing Society. It will explore the idea of 'trust by design'. You can [register here](#).

Bringing the future into focus

by Craig Perry

As an intelligence analyst moonlighting as a would-be futurist, I am often confronted by an epistemological dilemma. On the one hand, I have made a career of trying to assess what various foreign actors are up to, and offer estimates of what they might do next. On the other, my recent training as a foresight professional has hammered home the proposition that it is impossible to predict the future—a core belief and principle of the field of futures studies and strategic foresight. How to reconcile these?

Psychologist Philip Tetlock may have found an answer. Describing himself as an “optimistic skeptic,” he conducted a comprehensive assessment of political forecasting between 1984 and 2004 that appeared to confirm the futility of prediction. His study found the average expert “was roughly as accurate as a dart-throwing chimpanzee”, and amounted to little more than random guessing three to five years into the future. Nevertheless, Tetlock’s research also revealed some pundits who consistently beat the odds.

In *Superforecasting*, Tetlock and co-author Dan Gardner examine the results of a subsequent study: a forecasting tournament launched by the U.S. Intelligence Advanced Research Projects Activity (IARPA). Over a four-year period, participants were asked nearly 500 questions regarding potential world events, looking up to 12 months into the future.

Like meteorologists, players hedged their bets with probabilistic predictions, whose accuracy was evaluated using what’s known as Brier scores measuring how far away from the truth these forecasts fell. If

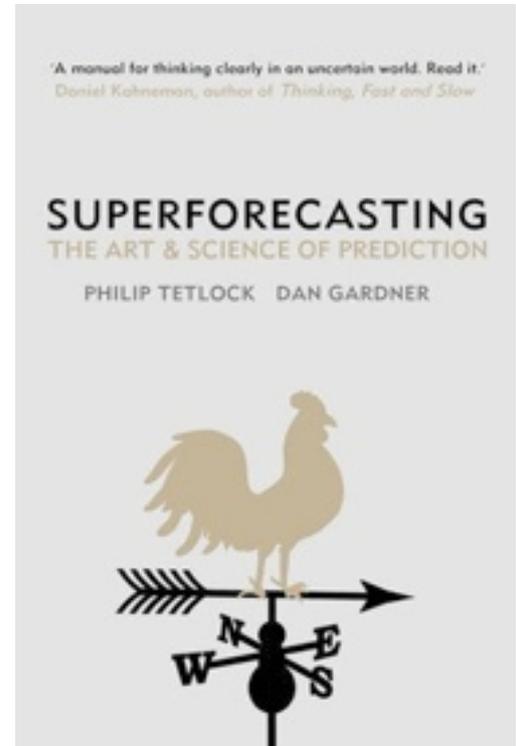
a participant predicted there was a 70 percent chance an event would occur, and it subsequently happened, this earned a better score than if that event didn’t occur. Forecasters who rated the odds at 80 or 90 percent would score even better.

Volunteers in Tetlock’s so-called “Good Judgment Project” outperformed both the IARPA control group, and also university-affiliated competitors and professional intelligence analysts with access to classified data. Over the course of the tournament, these “superforecasters” were able to reliably foresee near-term futures. Further, their efforts conclusively demonstrated that this sort of foresight is real, and that it can be improved with practice and hard work.

So what makes these

“superforecasters” so good at predicting the near-term future? Tetlock found them to be of above-average intelligence, but not geniuses; knowledgeable, yet cautious and humble; and actively open-minded and intellectually curious. They tended to be numerate, precise, and comfortable with probabilistic thinking. Rather than “hedgehogs” who know one big thing, successful forecasters are proverbial “foxes”: pragmatic, reflective, nondeterministic, analytical, and “dragonfly-eyed,” valuing diverse views and synthesizing them into their own.

Perhaps most importantly, “superforecasters” believe in self-improvement, try again whenever they fail, and are aware of their own cognitive and emotional biases. In short, the secret to their success is not *what* they think, but *how* they think.



Superforecasting: The Art & Science of Prediction

by Philip Tetlock and Dan Gardner

Random House, 2015

Craig Perry is a retired U.S. Air Force officer completing a degree in Foresight from the University of Houston. He currently lives in England.

The implications of this

research for futurists seem obvious.

Tetlock has empirically validated that it is possible to predict the future—at least in some situations and to some extent—while establishing the outer limits of such forecasting in our complex world.

“To be sure, in the big scheme of things, human foresight is puny,” the author admits, “but it is nothing to sniff at when you live on that puny human scale.” He also confirmed that any intelligent, open-minded, and hardworking person can cultivate the requisite skills to become a good forecaster. With the notable exception of numeracy, the same qualities possessed by “superforecasters” are among those highlighted in the Association of Professional Futurists’ foresight competency model. (One of my professors in the University of Houston’s foresight program actually moonlighted as a “superforecaster” in Tetlock’s study.)

Tetlock has some things to say about surprise that should interest foresight professionals. He rejects Nassim Taleb’s critique that “black swans”—highly improbable consequential events—determine the course of history, making forecasting a fool’s errand. “History does sometimes jump,” Tetlock acknowledges. “But it also crawls, and slow, incremental change can be profoundly important.”

Moreover, the consequences of unexpected “black swan” events often take time to develop, making these effects more predictable. Psychologist Daniel Kahneman has noted how humans tend to brush off such surprises, making the past seem more predictable than it was—and encouraging the belief that the future is more predictable than it is.

The antidote, in Tetlock’s opinion, is to immerse oneself in counter-factuals,

savoring how “history could have generated an infinite array of alternative outcomes and could now generate a similar array of alternative futures.”

Spoken like a futurist!

One limitation of the IARPA tournament was that it trafficked in relatively trivial questions that could be easily scored, rather than more ambitious but ambiguous “big questions” that truly interest intelligence analysts and futurists alike. But these two types of queries are connected in Tetlock’s estimation, since little questions often cluster around larger issues, and their cumulative probability offers insight into the likelihood of more significant changes.

For example, the question of whether there will be another conflict on the Korean Peninsula can be decomposed into more tactical queries: Will North Korea conduct another nuclear test by a certain date? Will it launch an additional long-range missile in a given timeframe? Will it fire artillery at South Korea during a specified period? Taken together, Tetlock suggests, the answers to these clusters of questions begin to render an image of the future, like a pointillist painter dabbing tiny dots on a canvas.

It remains to be seen whether Tetlock’s research will have much impact on the intelligence community, where greater accuracy would have momentous real-world implications. But futurists might also derive some practical benefits from this work. For example, when evaluating what the “baseline” forecast for a particular domain might be, a good place to start would be the predictions of “superforecasters” studying this area.

Tetlock is no naive positivist, and he has little patience for “shady peddlers of questionable insights in the forecasting

marketplace”—including pundits who misuse forecasts to entertain, advance political agendas, impress wealthy clients, or generally pretend to accurately predict the future “beyond the forecasting horizon.”

However, he does concede that some such punditry can serve a useful purpose. Tom Friedman’s column in *The New York Times*, for example, “can be read less as a forecast than an attempt to draw the attention of forecasters to something they should be thinking about. In other words, it is a question, not an answer.”

Tetlock concludes that “super-forecasters” should use these provocative questions to sharpen their foresight, while “super-questioners” like Friedman should employ the well-calibrated answers they generate “to fine-tune and occasionally overhaul their mental models of reality.” Substitute “futurists” for “super-questioners,” and the symbiotic relationship between short-range forecasting and long-range foresight comes into focus.

Superforecasting has much

to offer professional futurists, even if it raises as many questions as it answers. By introducing some much-needed rigor into futures studies, Tetlock has hinted at how we might reconcile the apparent dichotomy between forecasting and foresight. Further research—and integration with complementary efforts such as Terry Grim’s Foresight Maturity Model—could yield a more comprehensive and sophisticated understanding of the future. ◀

The history of the future

by Charles Brass

The ‘Very Short Introduction’ series published by Oxford University Press began in 1995 and now comprises more than 500 volumes on themes from accounting to Zionism. Each is around 30,000 words. One of the latest titles is *The Future*, written by the Australian futurist academic, Dr Jennifer Gidley.

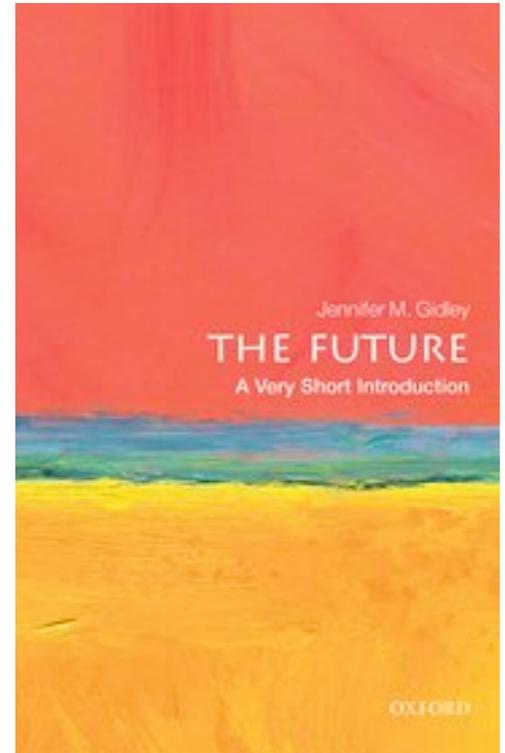
In its six chapters Gidley traces a 3,000-year history of futures, which she links to the human quest to ‘understand and tame our world’ (p14) largely through measuring and controlling time. She describes mankind’s attempts to ‘steer a course between the extremes of Malthusian doomsday catastrophes and the panorama of Cornucopian techno-optimism’ (p4).

However, notwithstanding the contributions of Zarathustra, Cicero, the oracles at Delphi, St Augustine, Nostradamus, HG Wells, Jules Verne and many others briefly mentioned in the book, Gidley acknowledges that the formal study of the future has a perhaps 60-year history (even if the word seems to have been first used in the fourteenth century).

To ensure readers are reminded of the full history, Gidley includes a 6-page appendix that acknowledges everyone from The Sybils (early oracles) to Jan Pietersen, author in 2000 of a book entitled *Global Futures* as part of the Global Futures Timeline.

From the first page, Gidley acknowledges that there is no such thing as ‘the future.’ Rather, there is ‘a multitude of possible futures’ (p2), and she recognises that ‘an evolution of human consciousness’ is needed to change the ways that humans have tried to ‘predict, control and understand the future’ (p2) over thousands of years.

Gidley charts the beginning of the 50-year history of the study of the future as beginning with the man—German Professor Ossip K. Flechtheim—who coined the word ‘futurology’ just after the second world war. Contemporaneously in France philosopher and educator Gaston Berger coined the term ‘*prospective*’ when he set up arguably the first futures studies centre, the Centre Internationale de Prospective in Paris. Continuing the French tradition, Bertrand de Jouvenal first published what is now the longest-



The Future: a very short introduction

by Jennifer Gidley

Oxford, 2017



An evolution of human consciousness is needed to change the ways that humans have tried to ‘predict, control and understand the future’

lived futures research journal—*Futuribles*—in 1960.

In the West, futures studies is most commonly associated with the USA where the wartime work of the RAND Corporation paved the way for the 1960s celebrity of Herman Kahn and his Hudson Institute, and SRI's early scenarios approaches were adapted by Peter Schwartz and the Global Business Network in the 1990s.

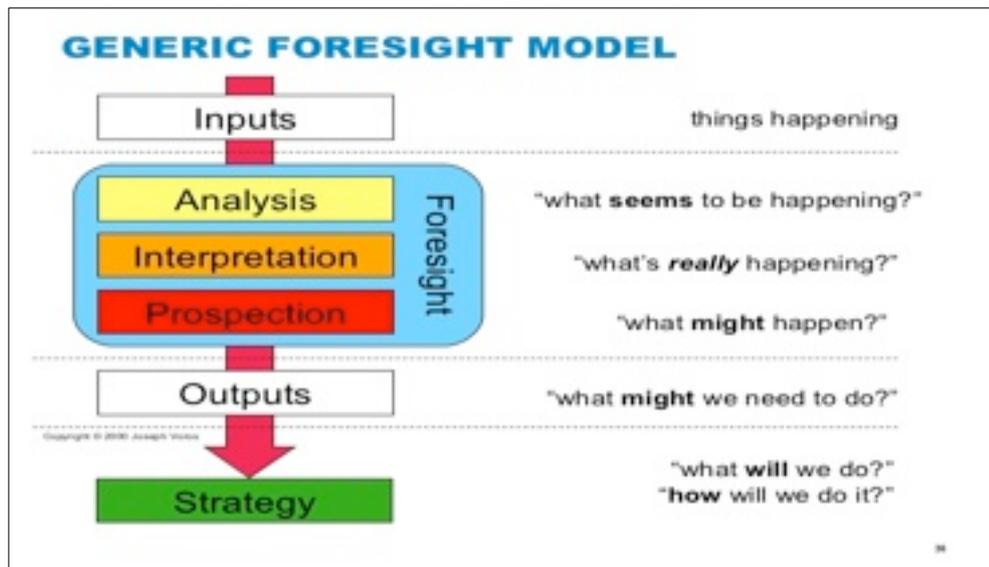
Gidley justifies human interest in the future in this way:

“By understanding how humans in the past have storied and framed the future, we can gain a deeper appreciation of the significance of futures thinking. If we explore ‘the past of the future’ and its links with ‘present-day futures’ we will be better prepared to create wiser futures for tomorrow.”

She links this idea to our evolving understanding of human consciousness. It is to this three-thousand-year evolution that her first chapter is devoted.

The second chapter more explicitly explores the evolving recognition that (despite our best efforts) the future cannot be predicted, and that acknowledging multiple alternatives is a better way to engage effectively with the future. Over 20 pages Gidley explores the development of this way of thinking about the future, culminating in what she calls the “Swinburne Approach,” which was largely developed by Joseph Voros as part of the Swinburne University Master of Strategic Foresight course. Its generic foresight process (p60) is seen in the diagram.

Chapter 3 looks in more detail at the evolution of academic scholarship in futures studies, focussing on foresight luminaries such as Johann Galtung, Eleanora Masini, Elise Boulding and Sohail Inayatullah. It pays particular note to the



Integral Futures concept developed by Richard Slaughter from the ideas of contemporary American philosopher Ken Wilber. Gidley also acknowledges the practical work of organisations such as Stewart Brand's Long Now Foundation, which is developing, amongst other things, a 10,000-year clock.

Chapter 4 (called “Crystal Balls, flying cars and robots”) focuses on popular conceptions and misconceptions about the future. Much of this chapter is about the development of robots and other artificial intelligence and it muses on the possibilities surrounding the singularity and trans-humanism—a theme that is taken up in more detail in Chapter 5. This chapter explicitly explores two contrasting futures for humanity—techno-utopian or human-centred—and is best summarised by quoting its last sentence:

“the human futures terrain is vast and complex, and this chapter should be read as the beginning of a conversation that has barely begun” (p115).

Gidley's final chapter turns to what she calls ‘grand futures challenges’. These challenges include environmental trends and surprises, trends and twists in global power, socio-cultural trends and counter-

trends, the grand urbanisation challenge and the grand education challenge. Each of these has been discussed from multiple perspectives by different practitioners, and Gidley provides a succinct but comprehensive summary.

As Gidley says in her conclusion, with a nod, perhaps, to the work of Barbara Adam:

“The future has been prophesied, divined, imagined, colonised, feared, forecast, strategised and created. As multifaceted as humanity itself, the future can never be fully known, predicted or controlled, but it can be better understood.” (p136)

She deserves congratulations for helping a lay audience better understand it. ◀

Charles Brass is an Australian-based futurist.

New members*

Welcome to: Nandagopanal Balagangadharan, India; Kevin Benedict, USA; Bobbi Besley, USA; D. Lloyd Chesley, USA; Keri Christensen, USA; Adam Cross, USA; Janice de Jong, Canada; Linda Groff, USA; Bill Irwin, USA; Emily Jaworski, USA; Peter Jones, Canada; Jan Klakurka, Canada; Stephen Layman, USA; Caz McLean, Australia; Allan Melo, Brazil; Claire Naughton, Australia; Roxanne Nicolussi, Canada; Theo Priestley, UK; Willow Pryor, Australia; Rakhi Rajani, UK; Amanda Reeves, Australia; Mike Richmond, Australia; René Rohrbeck, Denmark; Mark Sackler, USA; Jonelle Simunich, USA; John Smith,

USA; Gregory Ulrich, USA; Peter Van der Wel, The Netherlands; Freija van Duijne, The Netherlands; Monica Veeger, The Netherlands; Ivan Velez, USA; Jeff Watson, USA; and, Amy Webb, USA.

*includes new members up to end-July.



Below: APF members and others enjoying DDT in Antwerp and the Seattle Gathering. Clockwise from the top: drinks in the roof garden of M HKA; Going down, Prateeksa Singh, Jonelle Simunich, Cindy Frewen and Kimberly Daniels, in Seattle; Sitting on the dock of Elliott Bay, Pier 56, Tim Morgan, David Hamon, and Andy Hines; Tanja Hichert checks her schedule at DDT; Wendy Schultz and Erica Bol share a moment at DDT; and also in Antwerp, Cornelia Daheim makes a move in her futures game.



Seattle photos: below, Tom Frey, above Jay Gary

DDT photos: Bram Goots

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