Australian Government
Chief Scientist

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Higher Faculties

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ADELAIDE

I originally agreed to deliver the same speech I presented at the Universities Australia Conference dinner in February.

In that speech, I imagined turning university governance into a Monopoly-style board game, called “Faculty”.

But it was a game with very complicated instructions. It could only work if people actually bothered to read them.

And then last week I was scrolling through the science news... and I came across an article about this year’s Ig Nobel Prizes.

The 2018 Ig Nobel Prize for Literature went to our very own Queensland University of Technology... for a study confirming that the manuals for complex consumer products are read by approximately no-one.

And it seems that the more educated you are, the less likely you are to think you need any help.

So my dream of seeing Faculty in every home is grounded.

I refuse to strip all the complexity out of my board game for people who don’t want to read.

If I can’t have a tooth-grindingly complicated game, and a manual filled with assembly instructions involving my favourite tool – the Alan key – then I don’t want a game at all.

After all, this is *higher education*. It’s hard. As anyone who’s tried it would know.

Someone who did try it was Henry Kissinger.

He used to say that university politics made him long for the comparative simplicity of the Middle East.

In defence of this observation, he would cite the rule of thumb popularly known as “Sayre’s Law”.

Here it is:

“In any dispute the intensity of feeling is inversely proportional to the importance of the issue.”

Or, as Kissinger put it:

“University politics are vicious, precisely because the stakes are so small.”

With due respect to Kissinger, I disagree.

University politics are complex, and occasionally vicious, because the stakes are so high.

After all, if you add up all the people involved in Australia’s universities – as students, or staff, or suppliers, or collaborators – you’ve probably got nearly as many people as the population of South Australia.

With annual revenue greater than the GDP of almost half the countries tracked by the International Monetary Fund.

You run healthcare services.

You provide security.

You organise transport.

You have overseas missions.

You have newspapers.

You have elections.

Some of you handle bio-hazards and radioactive material – I mean *properly*, in the laboratory, of course.

And of course, you house people, you feed people, and you educate people.

So you basically perform all the functions of a nation state, with the occasional student uprising – but never a military coup.

That's not small stakes. That's complicated, because... it's complicated.

But thinking of Sayre's Law got me thinking about *other* laws that might be helpful for anyone venturing into a leadership role in higher education. And it seems to me that we need a new list.

In the past, the route to power and influence was reasonably clear.

Here is the advice to an ambitious young academic, given in 1908, from the English scholar F.W. Cornford.

"Political influence may be acquired in exactly the same way as gout. The method is to sit tight and drink port wine."

Now we might be sitting in the National Wine Centre, and some of us might be following that advice – but not in the expectation of a boost to our careers.

So I've come up with my own contemporary guide to success.

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I'll pause first to lay out my credentials.

My philosophy of university governance is drawn from my own experience as the Chancellor of Monash University for eight years.

It's a role that is often misunderstood.

Some people assume it's purely ceremonial: to look good in a velvet bonnet and gold-braided gown.

Others assume that it's adversarial: to wait gleefully for management to come up with a new proposal, so you can work out all the ways to shoot it down.

But if that's your definition of governance, as a Chancellor or as a Council Member, then you need re-training.

You've been chosen because you were thought to have something useful to contribute: be it your wisdom, or your experience, or your professional expertise.

And you're asked to bring those qualities to your job as a custodian. A custodian for the future of an institution that will have a direct and powerful impact on tens of thousands of lives.

So it's not enough for Council Members to monitor the financial performance and rankings. They also need to contribute to supportive discussions.

My shorthand form is "governance *and* guidance" – or if you prefer, "monitoring *and* mentoring".

The key relationship is that between the Chancellor and the Vice-Chancellor.

It is my consistent observation that anybody appointed to be a Vice-Chancellor is *ipso facto* brilliant. But their day is filled with pressing issues that make it hard to keep 2030 or 2040 or 2050 in mind.

There will always be temptations to deal with the urgent business at the expense of the greater mission.

Chancellors and Council Members are the trustees for the vision, there to help preserve the balance between the short-term and long-term needs of the university.

Vice-Chancellors and their management teams live and breathe the strategy. They need the Chancellor and Council Members to constructively challenge and approve.

Vice-Chancellors look to the Chancellor, in particular, to be a sounding board: someone with detailed knowledge, whose rock-solid commitment they can trust.

Chancellors also need to be prepared to look at the Council's own processes, honestly, and see where they can be improved.

My pet hate is "Audit and Finance" committees. Why would you put audit and finance together, except that they both involve numbers? They're supposed to be separate processes – that's Auditing 101!

But this is a dinner speech. I'll get back to my point.

I threw myself into my role at Monash University, and I can honestly say that it was one of the best assignments I've ever had in my life.

Remember that, as I lay out my rules, which might *occasionally* hint at something a little like cynicism... this job, *your* job, is always worth doing.

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And now, let's begin.

To start, let me endorse some general rules formulated by other people, with demonstrated relevance to the challenges of running a university.

Cheops Law: Nothing ever gets built on schedule or within budget. Especially if the "something" is a direct train line to your regional campus.

Brandolini's Law: The amount of energy needed to refute BS is an order of magnitude bigger than the energy needed to produce it.

We see this every day when serious science has to defend itself against irrational claims.

Benford's Law: The degree of passion in a debate is inversely proportional to the amount of real information available.

And this is why we have Twitter.

Cheops, Brandolini, Benford. Study them – they'll be on the test.

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Now, to my original contributions, which I distribute here under Creative Commons licence. Use at will.

Finkel's First Law: Every country believes its business–research collaboration record is uniquely bad.

I've spent a lot of time in recent years reading national research strategies and reviews.

Every country thinks it's terrible at collaboration, and its policy makers point to other countries and say "why don't we do that, look how successful we'd be!".

At first I thought, this cannot be universally true. Perhaps the very top performing countries in the Global Innovation Index might be beyond this self-condemnation.

Then I was talking to Eeva Leinonen, Vice-Chancellor of Murdoch University, and she pointed me to Finland – rank in the Global Innovation Index, #4.

Let me quote from a Finnish survey:

"Direct industrial collaboration is relatively uncommon amongst researchers. Even those researchers with direct experience with industry reported that collaboration mostly serves academic ends."

But what about the UK – rank, #6?

Here's the Dowling Review from 2015.

"Overall, the analysis indicates that while some companies have been exceptionally active and effective, the coverage of sectors and companies and the extent to which companies collaborate is extremely patchy."

But what about Switzerland, rank #1?

Here's the 2016 Swiss Research and Innovation Report.

“Owing to the high quality of Swiss universities and the strong growth of the universities of applied sciences, there is likely to be unused potential in Switzerland for increased collaboration between the corporate sector and the research sector.”

Now it could be that every country is setting their expectations unreasonably high – but it seems to me to be far more likely that the collaboration statistics aren’t particularly helpful.

I have spoken in the past about the serious discrepancies between the Australian and European datasets. Discrepancies that incorrectly place us last in the class.

It’s discouraging, because it suggests that for all the effort we put in, we never get anything back.

And if we can’t register progress, if we never actually see what shifts the needle, then how can we scale up the policies that work?

Tonight I can say more cheerfully that I am co-chairing a working group reporting to government on innovation metrics intended to be genuinely helpful in crafting policy.

And let me emphasise: the goal is not to come up with metrics that make us look better.

It is to move forward with a set of metrics that enable us to *be* better.

So we will no longer be just another country that thinks its collaboration record is uniquely bad.

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Second Law: Every speech about science, or innovation, or universities, must mention Wi-Fi, the Cochlear implant, and the Stump Jump Plough.

Hands up who would recognise a Stump Jump Plough if you fell over one.

Now I am here tonight to say we can do better.

We don’t need to be like aging rock stars always touring their greatest hits. And we don’t need to keep telling people things about the past that they already know.

Our reason for existing is to point people to the future – so let’s take every opportunity to highlight the *next* Cochlear.

Is it Gilmour Space in Queensland, which has just raised $19 million to launch its first rocket in 2020?

Here, in Australia: a true-blue low-cost fast-to-launch rocket start-up. That’s exciting!

Or it is Global Creatures, a Sydney-based theatre production company?

They cut their teeth doing Walking with Dinosaurs for the BBC.

Now they are the talk of Broadway, having constructed a one-tonne, six metre tall, 16-microprocessor version of King Kong, whom the New York Times refers to as “an animatronic ape unlike any puppet Broadway has seen before.”

That's exciting!

Or is the next Cochlear Rio Tinto, developing here in Australia what will be the world's first Intelligent Mine, with artificial intelligence embedded at every stage, pit to port?

We had self-driving mining trucks before California had self-driving cars. And now we'll have an Intelligent Mine before we see an intelligent city.

That's exciting!

So let's put that Stump Jump plough out to pasture. There's a one tonne gorilla in the room.

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To my Third Law: Every university is world-leading.

Yes, at some point, we've all said it. And I agree, it's absolutely the right aspiration.

But we can say it so often that it ceases to be meaningful when it's said to politicians.

And in my experience, politicians will very gladly agree that our universities punch above their weight.

The hard part is persuading them that they need to give universities the resources to do even better.

Because one very popular interpretation of "our universities are world-leading" is "excellent, in that case, carry on."

It's very hard to get over the line in a public policy process without spelling out the case for investment in terms that make sense to the public servants in the Department of Finance.

I'll give you an example.

At some point in time, which I won't identify precisely, I was talking to an Australian Treasurer.

We were talking about national research infrastructure, and I was making the case for high-performance computing.

The Treasurer had read in the brief that these supercomputers would be vital for industry. So he asked the logical question: if industry needs it, then why should government pay?

And the answer, of course, is that governments all over the world have *tried* to make the private sector pay for big national research infrastructure – and it's never worked.

Industry can and should contribute, but a long-term commitment from government has to be the anchor.

And credit to the Treasurer, the case was heard, and we saw $140 million for high-performance computing in the Federal Budget.

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And speaking about communicating in practical terms brings me to my **Fourth Law: The amount you invest in rebranding will be inversely proportional to the originality of the outcome.**

We've all thought it... you can spend an awful lot of money for words that look awfully familiar.

"Innovate to Win". "Strive to Transform". "Dream Better." That's ten million dollars, right there.

In all seriousness, I think we do need to have a serious conversation as a sector about the way we communicate with young people, beyond trying to attract them with slogans.

What skills do you need in order to benefit from a university education? And at the end of it, what can you reasonably expect?

To have that conversation, honestly, we need to be clear about the reality of moving into an era of mass education.

If we're accepting many, many more students into universities, then yes: the ATAR for entry is going to fall. If all the country's commentators had done Year 12 maths they would understand the simple arithmetic involved.

And yes, students will be accepted into courses who would not have been accepted in the past; and it may well be that those students will struggle.

And yes, at the end of a degree, there won't be graduate-level professional jobs for every student who went into university with a specific career in mind.

There will certainly be opportunities for students who've excelled in their discipline and gained the mastery to think creatively.

But students who were accepted despite being ill-prepared, and then scraped through, will find it harder and harder to compete.

Then the community will point the finger at the universities who took them in and accepted their money in the first place.

That's not fair – to on the one hand insist that more students get the benefit of a university education, and on the other hand attack universities for accepting more students.

But we *can* ask that universities make it clear to students what preparation they need in order to do well in a course.

And we can also expect that universities will recognise their duty of care, and only offer places where they have a reasonable expectation that the student can succeed.

That means restoring prerequisites, specifically maths prerequisites for courses that need maths! Like science, and engineering, and economics, where at *least* intermediate maths should be expected.

And we should adhere to high ATAR expectations for any degree where the graduate will have a direct impact on people's lives.

Like Teaching. Medicine. Civil Engineering. Dentistry.

It matters to keep up the expectations. It matters for the broader community to see it. And the best way to earn the community's trust is to be proactive about presenting solutions.

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And that brings me to my **Fifth and Final Law of higher education: if your title has a comma in it, it's too long.**

Take my job title, for example.

When I was appointed, I had colleagues suggest to me that "Australia's Chief Scientist" was short and unhelpful.

Why not "Australia's Chief Scientist, Innovator, Technologist, Entrepreneur and Engineer"?

The reality is, as Chief Scientist, I care about research infrastructure for the humanities.

I care about the quality of published research.

I care about the ethics of AI.

I care about women in science, and I am a Male Champion of Change for STEM.

I care about energy, and I've just come back from Japan where I discussed hydrogen for trucks, for electricity generation and for heating buildings.

I care about an enormous list of things.

But a title is a signature, not a biography!

And you can worry so much about including everything that people remember nothing.

So here's a plea: when next you name a conference, a faculty, or a professorial chair... have mercy. No commas.

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There you have it: Finkel's five original laws of higher education.

And I realise now that I've completely ignored the Law of Conference Dinners. No-one thanks you for a long speech.

So I'll leave you to enjoy the port wine – and finish with my usual call to arms:

May the Force be with you,

Thank you