



YOU'RE ON MUTE
BENJAMIN OLDROYD

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Our year at Wiko didn't start well. Three days before departure, we got a phone call from our Dean. "Something's come up. The Vice Chancellor has reversed your study leave approval. You can't go to Berlin."

"Why can't we go?"

"COVID mate, Berlin's a hotbed of disease. VC's office says it's not safe," said the Dean.

"But he can't go changing his mind like this. COVID's been around for the last six months. Why didn't the VC say so earlier? All our furniture is in storage and our lease ends in three days. Don't do this to us," say we.

“Hmm, you have a point. Let me call them and I’ll call you back,” says the Dean.

24 hours pass... Ring! Ring!

“Iain [the Dean] here. I found out what the problem is. Some lawyer in the VC’s office says that if you catch COVID in Berlin you might sue the University. That would put our Worker’s Compensation insurance premium up. So you can’t go.”

Us: “Please thank the VC for and his lawyer for their heartfelt concern for our welfare. Is there anything that can be done?”

The Dean: “Well you could resign, and we could have a handshake agreement to rehire you when you get back to Australia. (Pardon me, a COVID-safe elbow-bounce agreement.)”

“We don’t like that plan too much. You might forget to rehire us. What about we waive our right to worker’s compensation?”

“Good idea,” says the Dean. “Let me call the VC’s office.”

Ring! Ring! “Sorry, the legal team has called a very expensive consultant who says that Worker’s Compensation is not a negotiable right. You are not allowed to go.”

We are getting rather stressed at this point. Our plane to is set to depart in 24 hours.

“How about we use our long service leave?” we enquire.

“Let me get right back to you,” says the ever-obliging Dean.

Ring! Ring! “No, you can’t take long service leave. Legal won’t approve it because they know that you are going to Berlin and you might die or, worse, be permanently incapacitated. We have a duty of care.”

At this point we are seriously desperate. “Iain,” say we. “How can it be any of the University’s business what we do when we are on long service leave? If, for example, we chose to go Afghanistan for a nude sky-diving holiday that would not be a problem, right?”

“Good point,” says the ever optimistic Dean. “Let me get back to you.”

Ring! Ring! “OK you can take your long service leave, but only to the end of the year. Then you are on leave without pay. I’ll send you a letter. Goodbye and good luck.”

So at 10 pm the next day, we arrive at Sydney airport on a cold and wet August night with five huge bags and a great sense of relief.

The Sydney international terminal was a ghost town. Not quite tumbleweeds, but only one lonely desk open. You felt that the lights might be going out at any moment and they’d be bringing out the hurricane lamps. As the Cold Chisel song goes: *The last plane out of Sydney’s almost gone*. Which it was. The government had banned all international

travel except for “exceptional circumstances,” for which one had to seek approval. Fortunately we had got such approval on the basis of our study leave and our invitation from Wiko. But the airline still had to call some official in Canberra about each and every passenger. It took a while to get us boarded.

After passport control, the normally bustling shops selling ridiculously priced Italian suits, American undies, and French perfumes were shuttered. Even the booze places were mostly closed. On the Qatar plane, the only airline company brave (or subsidized?) enough to keep flying to Australia from Europe, the cabin crew wore full PPE for the entire flight. Maybe the VC’s lawyer was right?

But... we eventually arrived at Tegel Airport on a beautiful summer afternoon. No masks, no quarantine, no questions, no nothing! Everybody and everything was apparently normal. The sun shone. The trees and grass were verdant. Children played. Birds sang. Dogs woofed and chased each other about. Above all, no obvious signs of dead or dying people. We were greeted at Villa Walther by the smiley Vera and Daniela, who showed us to our glorious apartment via a marble stairway to heaven. In the meantime, Dennis had somehow manhandled our bags up in the lift and was manoeuvring them through the kitchen window. We had made it to Wiko!

What’s to be said about Wiko 2020/2021? While I’m sure that every year is unique in its own special way, I think that we were the extra-special Covid Class. By the end of October, as the trees started to turn and there was a distinct nip in the morning air, the case numbers were rocketing and the lockdown began to tighten its grip. Wiko staff were insisting that we followed the Robert Koch Institute’s rules to the letter. No more dinners or in-person lunches. Every meeting and colloquium shall be on line. No visitors allowed. Further afield, all the delights of Berlin were closed to us.

So we had to make our own fun. Clandestine dinners in each other’s apartments. Baking competitions for the best *Käsekuchen*. But above all, there was the Wicked Wiko Runners.

I have always been a runner/cyclist/gym person and prided myself on being fairly fit. But the longest distance I had ever run was 14 km in Sydney’s iconic City-to-Surf, and that was 25 years ago. I was somewhat alarmed, then, when our rather fit-looking neighbour Bettina Schwab, a neurobiologist, proposed a Sunday run of unspecified distance. “But last weekend we went 20 km,” said Bettina brightly, with an ambiguous smile that was simultaneously charming and menacing.

And so began the Wicked Wiko Runners. (How did we ever come up with that stupid name?) We were soon joined by others, most notably by Shamil Jeppie, a historian from

Cape Town. Shamil is a serious runner and proposed that we should train for the Berlin half-marathon in March. Surely the lockdown would be over by then?

WWR grew and grew. Some people had never run before, some were regular joggers. Shamil and Yossi Yovel were in a class of their own. I am embarrassed to admit that Yossi regularly lapped me after just six circuits of the splendid Grunewald athletic field where Shamil had us doing his “speed training” program on Tuesday evenings.

We ran all winter. Even when it was minus 10° C with deep snow, still we ran through the magical forest. Beside frozen lakes and streams, up steep trails, and over ravines, with only animal tracks of such number and variety that you couldn't believe that you were so close to the city. As the winter wore on, we ran further and further: 10, 15, 20 km. Distances that I didn't believe I could possibly do. Pad, pad, pad through the freshly fallen snow. Don't stop or fall because you will surely freeze. I wore out two pairs of winter tights!

Is there any better way to get to know your fellow Fellows than by running together? I learned about bat navigation, Timbuktu, autonomous robots that will swim into your kidney to fix a tumour, war criminals in Liberia, Argentina's ecological and political disasters, and practical philosophy (among many other things). For example, should a vaccinated person have more rights than an unvaccinated one? One point of view is “no” because no human should have additional rights over another. Another is “yes” because it's spiteful and irrational not to. Eventually I was persuaded that a vaccinated person should have more freedoms because it will encourage vaccination.

I also learned about how to write a book. For most of the year, five or six of us met with Daniel Schönflug, to read each other's chapter drafts. If you are planning on writing a book at Wiko, I strongly recommend that you form or join such a group with Daniel, especially if you are aiming at something more popular. It's all about scenes, you will discover.

One of Wiko's missions is to transform you by helping you to confront alternative perspectives. So I will finish by telling you about my own little transformation. At Wiko I met sociologists, and sociologists have a different view of the world from what you and I do (unless you are a sociologist). To a sociologist, everyday things that seem perfectly straightforward, solid, and well-defined are in fact a “social construct.” For example, I was challenged early on to understand that “wilderness” is a social construct. To me wilderness is the antithesis of a social construct, because it should not be constructed. It should be nature getting on with things all by itself. But no, it's a social construct

because it evokes ideas of “the wild West,” *terra nullius*, noble savages, etc. Well, I still think that wilderness is a thing, but I now grant that it has a sociological aspect to it.

OK, what about sex? Sex is definitely a social construct, I was informed. So’s race, gender, poverty, all socially constructed. What about gravity? That’s tricky, but for sure the *study* of gravity is a social construct. What about dachshunds? Well they are definitely a social construct. But could we not all describe a dachshund as a long dog with short legs and a long snout that we can all recognize? I can even point to some genes that are fixed in dachshunds. Isn’t a dachshund a real thing in the real world? Do we always have to analyse everything from a sociological perspective?

As the year played out, the discussions between the biologists and the sociologists got a little fractious. But by year’s end I think that I slowly came to see what they are about. So here is my understanding, for what it’s worth, and I hope it will help you stay calm when seemingly nutty things are being said. Although they might be reticent to say so in public, in their hearts sociologists do not deny that things like gravity, biological sex, and human variation are real things in the real world. But to a sociologist mere physics and biology are not interesting. It’s how we react as a society and as individuals to physics and biology that is interesting. For sure there are men and women, and on average they are biologically different in some obvious respects. But to a sociologist these differences are not interesting. Much more interesting thing is why there are pay differences between men and women, and why some ethnic groups have lower or higher socioeconomic outcomes.

In the end I came to appreciate this perspective: these differences are indeed socially constructed. But I still wish that some of my new friends would be a little less dogmatic. It seems to me that make-believe denialism of physical realities isn’t helpful to the cause and detracts from an important argument.

Outputs:

It was a very good year!

First and foremost, I wrote nine chapters of a planned 13-chapter popular book on epigenetics and evolution. I am extremely grateful to Daniel and the rest of the Book Club for their encouragement, guidance, and support in this endeavour.

I co-edited a special issue of the *Philosophical Transactions of the Royal Society of London* on the above topic (cunning me).

My last three PhD students submitted their theses.

And I published the following:

- Aamidor, S. E., M. H. Allsopp, R. J. Reid, M. Beekman, G. Buchmann, T. Wossler, and B. P. Oldroyd (2020). “What mechanistic factors affect thelytokous parthenogenesis in *Apis mellifera capensis* queens?” *Apidologie* 51: 329–341.
- Ashe, A., V. Colot, and B. P. Oldroyd (2021). “How does epigenetics influence the course of evolution?” *Philosophical Transactions of the Royal Society B* 376: 20200111.
- Cardoso-Junior, C. A. M., I. Ronai, K. Hartfelder, and B. P. Oldroyd (2020). “Queen pheromone modulates the expression of epigenetic modifier genes in the brain of honeybee workers.” *Biology Letters* 16: 202000440.
- Cardoso-Junior, C. A. M., B. Yagound, I. Ronai, E. J. Remnant, K. Hartfelder, and B. P. Oldroyd (2021). “DNA methylation is not a driver of gene expression reprogramming in young honey bee workers.” *Molecular Ecology* 30: 4804–4818.
- Gillard, T. L., and B. P. Oldroyd (2020). “Controlled reproduction in the honey bee (*Apis mellifera*) via artificial insemination.” *Advances in Insect Physiology* 59: 1–42.
- Oldroyd, B. P., and B. Yagound (2021). “Parent-of-origin effects, allele-specific expression, genomic imprinting and paternal manipulation in social insects.” *Philosophical Transactions of the Royal Society B* 376: 20200425.
- Oldroyd, B. P., and B. Yagound (2021). “The role of epigenetics, particularly DNA methylation, in the evolution of caste in insect societies.” *Philosophical Transactions of the Royal Society B* 376: 20200115.
- Oldroyd, B. P., B. Yagound, M. H. Allsop, M. J. Holmes, G. Buchmann, A. Zayed, and M. Beekman (2021). “Adaptive, caste-specific changes to recombination rates in a thelytokous honeybee population.” *Proceedings of the Royal Society B* 288: 20210729.
- Utaipanon, P., M. J. Holmes, G. Buchmann, and B. P. Oldroyd (2021). “Split or combine? Effects of repeated sampling and data pooling on the estimation of colony numbers obtained from drone genotyping.” *Apidologie* 52: 620–631.
- Utaipanon, P., T. M. Schaerf, N. C. Chapman, M. J. Holmes, and B. P. Oldroyd (2021). “Using trapped drones to assess the density of honey bee colonies: a simulation and empirical study to evaluate the accuracy of the method.” *Ecological Entomology* 46: 128–137.
- Yagound, B., K. A. Dogantzis, A. Zayed, J. Lim, P. Broekhuysse, E. J. Remnant, M. Beekman, et al. (2020). “A single gene causes thelytokous parthenogenesis, the defining feature of the Cape honeybee *Apis mellifera capensis*.” *Current Biology* 30: 2248–2259.

- Yagound, B., E. J. Remnant, G. Buchmann, and B. P. Oldroyd (2020). “Intergenerational transfer of DNA methylation marks in the honey bee.” *Proceedings of the National Academy of Sciences* 117: 32519–32527.
- Yagound, B., E. J. Remnant, G. Buchmann, and B. P. Oldroyd (2021). “Reply to Soley: DNA methylation marks are stably transferred across generations in honey bees.” *Proceedings of the National Academy of Sciences* 118: e2109211118.