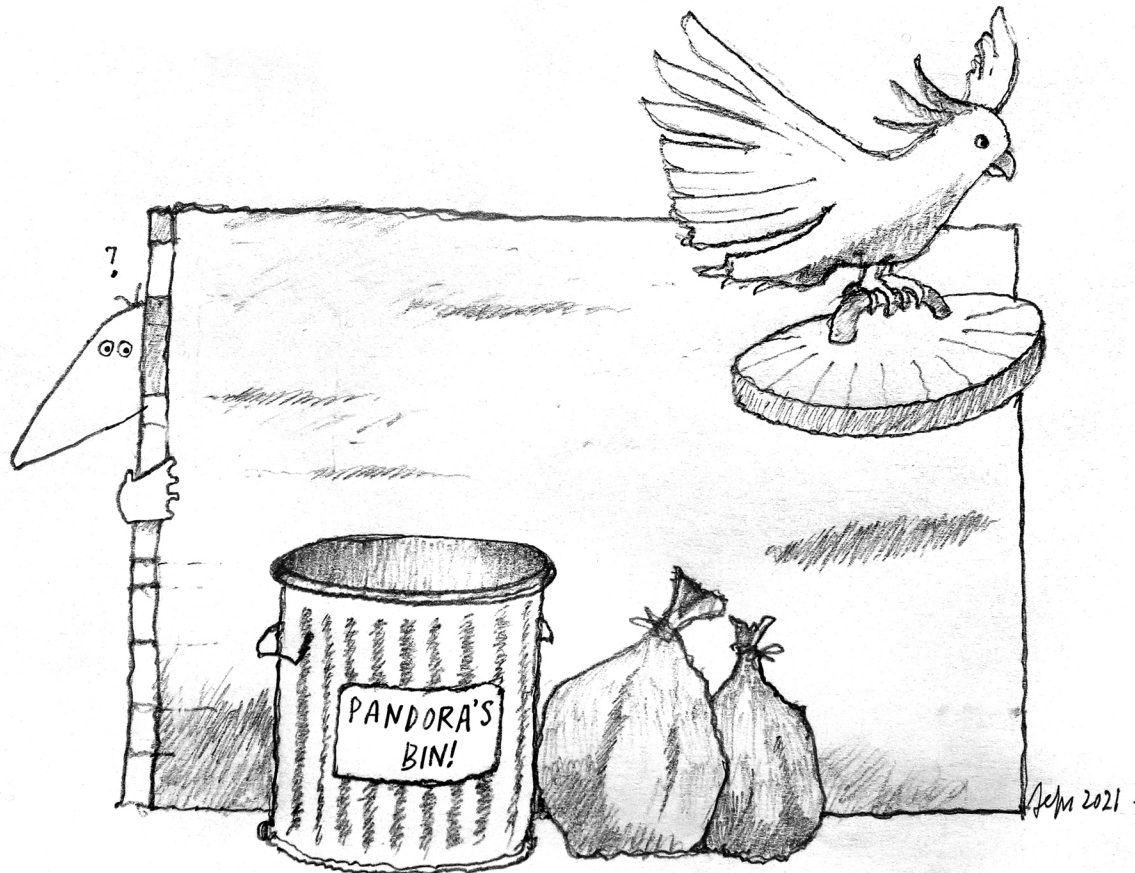


## STICKY WICKET

## Corona XLII – news for parrots

Mole

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Hello! Hello! It is a gorgeous day, balmy and sunny, and I'm feeling great (thank you). That is, when I'm not thinking about the massive surge in infections in my country due to the Delta variant of the Terrible Pandemic (TP). Which doesn't want to go away. Indeed, it will not go away unless we band together and take this much more seriously than we have been. So, it won't go away, because this 'taking it much more seriously' is not going to happen. But at least no parrots are involved.

The very well informed among you probably have already figured out that I love Monty Python. (If you have no idea who Monty Python were, they were a groundbreaking comedy group from the UK, and you should really know about them. I refer to several sketches below that you can easily look up.) I'm a proper fan and can recite entire sketches from memory. Not just the classics (Dead Parrot, Spam, Nudge Nudge, Travel Agency, The Spanish Inquisition) but the more obscure ones as well, like News for Parrots. ("No parrots were involved in an accident on the M1 today, when a lorry carrying high-octane fuel was in collision with a bollard. That's a *bollard* and not a *parrot*. A spokesman for parrots

said he was glad no parrots were involved.") This is immediately followed by part three of 'A Tale of Two Cities,' specially adapted for parrots by Joey Boy. Darnay: Who's a pretty boy then? Lucy: 'ello, 'ello, 'ello.)

So why am I talking about parrots? Well, I've just read a remarkable paper about sulphur-crested cockatoos. The investigators studied the spread of a learned behavior (opening trash containers) in areas around Sydney and Wollongong. (I have loved saying "Wollongong" since I met Professor Tree Kangaroo from Wollongong many years ago. Wollongong. Wollongong. Okay, I'll stop.) Wollongong (now I'll stop). Because the cockatoos in each region used different techniques, the authors were able to convincingly show that this is a consequence of social transmission of an innovation. Real life 'News for Parrots.' Of course, we knew that cockatoos (and really, all parrots) are smart, but now we know they tweet.

I was looking for more information on the intelligence of parrots and came across the following: "...a famous experiment in the US 40 years ago when nursery school children were put in a room and

given a marshmallow, biscuit or pretzel stick. They could either eat it right away or wait 15 minutes and get an extra treat. On average they are larger than most other parrots”. I had no idea that young children are only larger than parrots *on average*. See? There is a lot to learn from the internet.

I do have a point. (“You have a *point*, Mole? I can’t wait.”) The spread of bin-opening behavior among cockatoos would not have happened if the approach to opening bins *did not work*. This tells me that cockatoos are much smarter than we are. For the past year, we have done the dangerous experiment in many parts of the world of letting people decide whether they want to wear masks, socially distance and get vaccinated. And the data are as clear as can be: if you choose not to do these things, you will be infected by the TP, and you will spread it to others. In the case of Delta, you will spread it to *five* other people. And despite knowing that this approach (not masking, no vaccine) doesn’t work, this non-practice has spread by social transmission throughout large parts of my country (and perhaps yours). And consequently, the TP is back in force.

Many years ago, Richard Dawkins gave us the term ‘meme’ (in the last chapter of ‘The Selfish Gene’. If you haven’t read this and the sequel ‘The Extended Phenotype,’ go get these and read them right away. Essential for anyone doing what we do, this biomedical research thing. If you don’t do biomedical research, go read them anyway). Dawkins noted that anything that replicates with variation is subject to evolution by selection, and this applies to any idea that we communicate to others, provided they pass it along. Such replicating ideas are memes.

Usually, when we think about evolution, we think about organisms not memes. And for most of us, we think about those organisms that sequester their germ lines – where the DNA that goes to the next generation is socked away in minimally dividing cells early in development (a concept that was originally proposed and championed by August Weismann in the 19th century). A century later, Leo Buss (in his remarkable ‘The Evolution of Individuality,’ which is also essential reading) noted that this sequestration does not occur in most multicellular organisms (an example being colonial organisms, such as corals), and that multiple germ lines in an individual can thus potentially compete for contribution to the next generation. As a consequence, many such organisms have evolved strategies to prevent the acquisition of ‘foreign’ germ lines that might be acquired, for example, by fusion of individuals. (When you are small, fusing with a neighbor to increase your size gives you a survival advantage. But because of the potential for germline competition, the trick is to only fuse with closely related individuals. This reasoning only has practical implications if you are this type of organism. Moles don’t fuse, but my friend Professor Polyp does this all the time.)

Memes fall into this latter category. When we incorporate a meme, we effectively ‘fuse’ with it. The meme can compete with our other, incorporated memes. So, like the colonial animals referred to above, we compare any circulating meme with our ‘selves,’ the belief system that we use to define ‘me,’ and either reject it or accept it. Since memes replicate by social transmission, when we reject one (and thus do not communicate it), we effectively kill its subsequent replication, at least any replication by us. Memes can go extinct if their transmission falls below one (for example, Pet Rocks, Furbies and Gangnam Style).

And here’s a thing about memes. Memes do not have to be useful to spread, they just have to spread (see Pet Rocks, Furbies and Gangnam Style). And clearly, this meme of ‘free to be unmasked and unvaccinated’ (FTBUU) is not useful, but it is spreading. And while you may well have rejected it from your belief system (I hope you have), any time you mention it, it has the potential to spread to someone who accepts it and spreads it further. And thanks to social media, memes can spread very, very fast. Faster than a virus. We need a vaccine against this meme.

Actually, a vaccine is only a so-so metaphor. When we are vaccinated, we become immune to a microbe, so that when it subsequently appears in our bodies, we reject it. So ‘follow the science’ may be a vaccine meme that prevents someone from incorporating the ‘ignore scientists’ meme. Unfortunately, the ‘I don’t trust scientists’ meme vaccinates against the ‘get vaccinated and protect you and your family’ meme. So, I don’t see how we can get a vaccine to the FTBUU meme. What we need, I think, is an antibiotic. A way to ‘kill’ it even after it has been incorporated into a belief system.

Last time, I mentioned one such antibiotic: raising insurance rates for the unvaccinated (effectively making them pay for the healthcare costs of other unvaccinated people). Other antibiotics are vaccine requirements for participation in large social events (movies, theaters, concerts, festivals), vaccine mandates at places of work, vaccine passports, vaccine lotteries (not to get the vaccine, but the chance to win lots of money once you do) and others (free donuts! This is a real thing – “I didn’t want to get vaccinated to protect myself and my family, but they were giving away donuts, and I was hungry”). Maybe restaurants will demand to see proof of vaccination before you can be seated (this is happening in NYC, the Big Apple, and maybe this will become an antibiotic meme). I’m sure you can think of more. We have to try any and all of these to see what works. Like sulphur-crested cockatoos would.

This just in: some states in my country (where states are united) are reporting cases of the TP and hospitalizations that are the highest recorded to date, despite freely available vaccines. No parrots have been infected.

And now for something completely different.