



THE WEEKEND

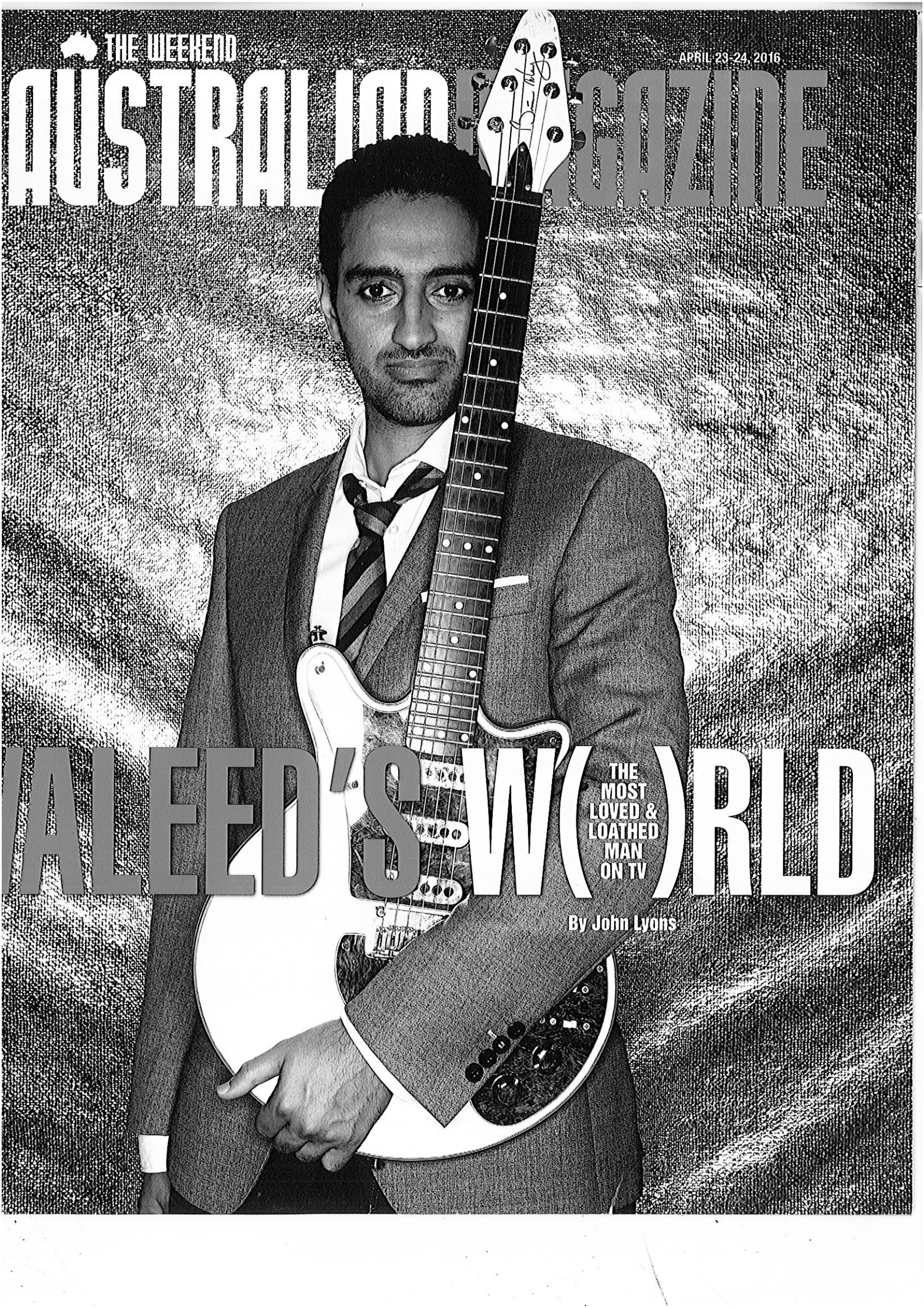
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AUSTRALIAN MAGAZINE

DAVID LEED 'SW()RLD

THE
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LOVED &
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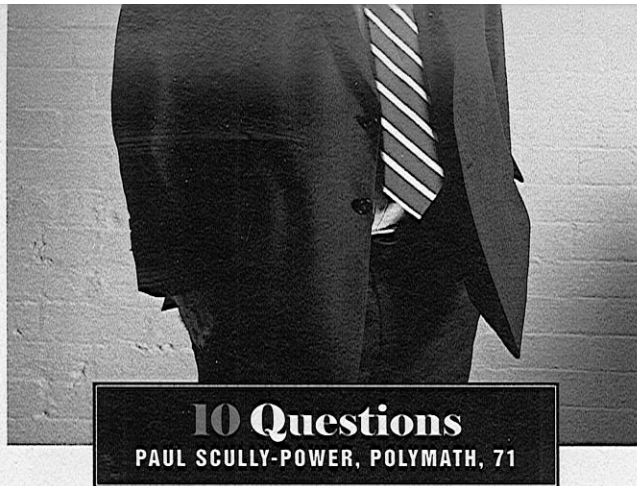
By John Lyons



Shuttle Challenger in 1984. What did you learn? I was an oceanographer at the time, studying spiral eddies – revolving currents, tens of kilometres across, on the ocean's surface. They're dynamic and very difficult to measure from a ship, but from low-Earth orbit we could study them in their entirety for the first time. We also discovered that, far from being rare, they're ubiquitous, which no one knew.

Challenger exploded 18 months later, killing seven astronauts. Do you believe in fate? Going to space is always a risky business. My wife and six kids were all there at my launch. Fate? I think you buy your ticket and take your luck.

How do your current interests in UAVs (drones) and nanotechnology collide? We're testing a UAV called Little Ripper to be used for shark-spotting and search-and-rescue; it carries a pod that inflates into a life-raft, with a shark shield and emergency beacon. Nanotechnology is going to change the world; it'll allow us to build electronic devices an order of magnitude smaller than they are now; that's a perfect fit with UAVs.



Among your many awards is the Star of Ethiopia. What's that for? I was part of a team that designed a water filter using nanoparticles – very tiny particles – to capture viruses, which pass right through traditional filters. It's now being rolled out in African villages. Prince Ermias Haile-Selassie gave me the award.

What about the Order of the Decibel? That's an American award – I'm a joint US citizen, and

more connected and we should worry about that. Nature teaches us everything we need to know. Why do species survive? The answer is diversity. The same is true in the electronic world.

Should Australia have a space agency? We must have skin in the game – there are lots of spin-offs from space – but that doesn't mean we need our own launch capability. We have to be realistic. Maybe we could join an Asian Space Agency.

Any unusual ambitions? I think we have the technology now to find the Lost City of Atlantis. I've done lots of research into where it might be. It would take a lot of effort and money, though – just look at MH370. I'm thinking of corralling 20 billionaires who are interested and saying, "Let's go and do it."

Finally, a philosophical question: how does one go to the loo in zero gravity? I get asked this a lot by children. It's simple: the toilet bowl operates under a partial vacuum – like suction, essentially. There's a lever beside the toilet to turn it off so you don't get stuck. ROSS BILTON

SOCIETY: BETTER LATTE THAN NEVER



Headache, fatigue, irritability. Caffeine withdrawal is all too real to a coffee drinker going cold turkey; it's even considered a mental disorder by *DSM-5*, psychiatry's bible. But a new study shows the placebo effect at play even here. Led by Llew Mills at Sydney University and published in this month's *Journal of Psychopharmacology*, the study got 89 heavy coffee drinkers to abstain for 24 hours, then gave them all a

cup of decaf. Some were told it was decaf, and others were told it was regular coffee; the hoodwinked lot duly reported sweet relief from their withdrawal symptoms. Of course, this is of no practical help to those trying to curb their caffeine intake, because you can hardly make yourself a placebo coffee. But Mills is now exploring how such "expectancy" might help wean people off drugs like methadone. ROSS BILTON