JOHN D. & CATHERINE T. MACARTHUR FOUNDATION

Q&A Jad Abumrad

Airwave trailblazer

Jad Abumrad co-hosts Radiolab, the science-heavy, nationally syndicated US public-radio show. As it enters its tenth year, he takes time out from a 21-city North American tour with co-host Robert Krulwich to talk about crafting high-speed science stories on radio.

How did you get into science and radio?
I grew up in Tennessee in the 1980s, an Arab kid in a Southern Baptist landscape. My mother is a molecular biologist and my father is a surgeon, and as a kid I'd be stuck in their labs after school, bored out of my skull and playing with the rats. I gravitated to music, and as a teen I would stay in my room composing scores for imaginary films. After studying writing and music in college, I started volunteering in public radio and eventually secured a late-night slot to air forgotten documentaries on WNYC — New York Public Radio. Two days before the show aired, I asked my boss who the host would be. He said, "You."

How did the show evolve?
In the early days, the station mercifully treated me with benign neglect. I didn't know what I was doing. Most of the show was old material, borrowed and rehashed. Inevitably there would be a hole in the programme, and in a panic I would throw together a little segment on the politics of Zimbabwe or I'd ask listeners to scream on my voicemail. In 2003, I met science broadcaster Robert Krulwich and we experimented with combining radio formats such as interviews, documentaries, storytelling and music. We settled on a 'two-guys-talking' format, but with quotes from scientists and surreal soundscapes popping out like thought bubbles. From the beginning, Radiolab had a digital sensibility, a sense of speed and density that some have heralded as the future of public radio and others have complained is too jittery.

Do you ever run up against the limits of radio?
In our episode on colour, when talking about the retina with a biologist, we asked which creature had the most types of colour-receptor cone in its eyes. The answer was the mantis shrimp, which has 16 cones, each receptive to a different wavelength of light. Unable to convey this visually, we gathered a 160-voice choir in a cathedral, divided them up according to colours in the spectrum and asked them to sing us a rainbow as the shrimp would see it.

What happens at your live show?
Apocalyptical tells stories of mass destruction, focusing on the extinction of dinosaurs at the end of the Cretaceous period 65 million years ago. Some moments, in which you learn bits of chemistry and physics, or the lights dim and we all listen deeply, feel like the on-air show. The rest is strange and new. There is animation and video to reveal the mechanics of violent collapse. There are giant dinosaur puppets made by the Australian theatre company Erth. Musicians create swells of sound that make you feel like the roof is going to fall in. Comedians like Reggie Watts and Patton Oswalt will make you laugh. We're all moving towards our own end, as individuals and as a species, but we hope to leave you with a sense of how extraordinary it is to be alive.

What is the gist of the science in the show?
We present a theory proposed by scientists Jay Melosh, Peter Schultz, Douglas Robertson and Kirk Johnson that draws on ballistic simulations to argue that the Cretaceous extinction may have been much faster than previously thought. The conventional picture is of a global 'nuclear winter' brought on by ash thrown up into the atmosphere by a meteor that killed off the dinosaurs over tens of thousands of years. We argue that the extinction may have taken just a single afternoon.

Is it true that you plan to branch out from science?
Yes and no. Scientific ideas can be irreducibly complex and wrestling with them can be exhausting. But it's no longer acceptable for people not to understand what's happening in science, and I do find science endlessly inspiring even when it's pissing me off. So science reporting will always be a fundamental part of what we do. But in recent months I have thought about getting into legal affairs. I wonder sometimes what it would be like to cover an election. And what about sports?

Have you got things wrong?
Absolutely. For a show about stochasticity, we wanted to demonstrate how hard it is to tell a signal from noise at the molecular level. So we ran a tape of a 99-year-old woman singing through a noise filter, over and over. We felt it was a gorgeous metaphor for how our bodies deal with biological 'noise', the topic of a reported segment by Carl Zimmer. But Carl said that it was not even remotely correct. We had an epiphany: let's just play the incorrect version and then broadcast Carl telling us how wrong it is, followed by a good-faith attempt to correct ourselves. We've never claimed to know what we're talking about, which may explain why no one has come to stick a pitchfork in our foreheads. ■

INTERVIEW BY JASCHA HOFFMAN