

Blind Data

Emma stared out of the café window at two gulls fighting over a burger carton. She'd no idea what had possessed her to tell her mother that she'd be bringing a date to her sister's wedding. Or why she'd let Tracey take charge of solving her dilemma, other than the ceremony was in a week's time and there was no way she was asking one of her exes to play the part.

'One grande cappuccino.' Julian placed the coffee on the table and slid into the seat opposite. 'And one black tea.' He took a sip. 'Lovely.'

Emma tried not to cringe. They already seemed mismatched. She was wearing a crumpled Joy Division T-shirt, black jeans, and blood red Doc Martins. In contrast, his blue dress shirt and tan chinos were pressed and his white Nikes scuff-free.

She pulled a weak smile. 'Thanks. So, how do you know Tracey?'

'School. When she lived in Dublin. You?'

'University. In London. We shared a bedsit in Crouch End.'

'You're *that* electronic engineer?' Julian laughed.

'What's so funny?'

'Nothing. I mean, you know, she's told me a few stories. Like how you wired the windows to stop thieves and electrocuted the landlord.'

Emma shook her head. 'That's not entirely true. I made some adjustments to an existing system and that creep deserved the shock.'

'Sounds like I'd better behave myself then.'

'Always a good idea on a first date, Julian. Any date, really. So, tell me about yourself. What do you do?' Please be normal, she thought to herself.

‘I’m an anthropologist.’

Emma was reasonably certain she’d caught the eye-roll in time.

‘I work in an interdisciplinary research institute,’ Julian continued. ‘Technology and Society. I study how digital tech is built and used. My thesis examined the politics and praxes of a couple of start-up companies who were developing new apps.’

‘The politics and praxes?’ Emma sighed. Only Tracey would think a preppy anthropologist who saw politics everywhere as a suitable wedding date for her. She was an engineer. Creating an app was code and applied maths.

‘You know, all the pressures shaping how a company operates – raising finance, legal compliance, relationships with investors, in-team relations, trying to create a new market. And how people work with each other and with technologies to design and build a product. All the choices and decisions made. The negotiations. What data they use. How it is processed. What they do with it.’

Emma took a sip of her cappuccino, sorry that she’d asked. This was her own fault. She should have just said she was going to the wedding on her own. But no, she didn’t want to seem like Emma No-dates. She was just going to have to grin and bear it. At least her mother would be delighted if she turned up with a ‘nice boy’ like Julian.

‘And you?’ Julian enquired.

‘I work on sound sensors.’

‘Building them?’

‘And testing them in the field. We’re creating a sound sensing network for monitoring and modelling background noise across the city.’

‘Okay, so now I know why Tracey thought we’d be a good match. You build tech, I study how tech is built. Voilà.’

‘Voilà?’ There was no voilà here, Emma thought. There is bleak acceptance of fate.

‘I bet she thought that we might be able to work with each other. Or I could study your work. Or at least we’d have something to talk about.’

‘So, I’d be your lab rat? I don’t think so.’

‘I’d be more interested in the processes and messiness of the science than studying you per se.’

‘So you’re saying I’m not interesting enough to study?’

‘I’m not walking into that trap.’

‘You already have. And there’s nothing messy about what we do.’

‘Well, I don’t mean messy messy; I mean all the contingent intricacies that shape the tech you create and the data you produce.’

‘Contingent intricacies?’ Despite her intentions, Emma’s heckles were now up. ‘I forgot that they make everyone in the humanities swallow a dictionary. And we’re collecting data, not producing it. And for the record, it’s all rooted in established science, though we’re pushing boundaries as well.’

‘I’m sure you are,’ Julian said, holding his palms up, ‘but you’re definitely producing data not collecting it. Data doesn’t pre-exist their generation. Your sensors create them.’

‘You’re saying there’s no sound to collect?’

‘No, I’m saying there’s no data. You create the data. Via your sound sensors.’

‘But the sound is the data. It’s an electromagnetic frequency.’

‘Which you measure with a sensor and record as data entries. Probably in decibels, right?’

‘Yes.’

‘Which is a made-up scale. Invented by somebody.’

‘Bell Labs. In 1924. Deci being a tenth of one bel; named in honour of Alexander Graham Bell.’ For the first time in the conversation, Emma felt on safe land. ‘It’s a logarithmic scale: a change in power by a factor of ten corresponds to a ten dB change in level.’

‘Right. So, sound does not pre-exist as decibels. You’ve assigned that unit to it and that’s what you record in your database. If the scale was different it would be recorded differently.’

‘But it would still be measuring the same thing.’

‘Is it though?’

‘Yes!’

‘But would you always get the same readings?’

‘Yes. We’re practising science. It’s rational, logical, objective. The whole system has been carefully set up to ensure we get the best readings.’

‘But you’ve had to make choices and compromises, right? You’ve chosen which sensors to use. You’ve chosen how many they’ll be, where they’ll be and their scan rate.’

‘But that’s all been done rigorously. There was a lot of thought and planning involved to make sure we comply with EU guidelines on standards and placement.’

‘But you’ll have still made compromises. They’ll have been cost constraints. Permissions needed for siting them. Logistical concerns. And those standards and guidelines have been created by committees through negotiation. How’s it configured?’

Emma felt at sea again. This was never going to work. It was hopeless. They’d be stuck together at the wedding for hours. If she had to listen to this kind of nonsense all day she’d go mad. They’d end up like those seagulls fighting over scraps. As they were already doing.

‘Humour me,’ Julian cajoled.

She wanted to scream, ‘I am.’ Instead, she said, ‘Fine. We have a network of 16 Sonitus EM2030 sensors that measure sound readings every five minutes, pinging the data back to our server via GSM.’

‘Why every five minutes?’

‘To save on the battery life and the network communication costs.’

‘But you could do it more frequently?’

‘Every second if we wanted. Though the data would also get noisier.’

‘So there’s noise in the data?’

‘Yes, but we control for that using a smoothing algorithm.’

‘In other words, you’ve compromised on the sampling rate and you transform the data to deal with residuals or errors. You’re generating not collecting the data.’

‘Jesus, Julian!’ She’d finally reached her limit. ‘This is your idea of a date?’

He didn’t seem phased by her outburst. ‘We’re both researchers. We’re discussing research. It’s common ground.’

‘You’re trying to undermine my work.’

‘No. No, I’m not. I’m not saying it’s not good. It might be brilliant. And it’s no doubt very useful. I’m making a point

about scientific practice. At best, you're practising mechanical objectivity – trying to minimize biases, errors, calibration issues and so on – but it's still set up in your vision, based on your education and experience, and compromising for circumstance. You're still making choices that influence the outcome. The data isn't raw, it's cooked to your recipe, using instruments that you picked, which will have their own quirks.'

'Of course, but by your logic you can't get better than mechanical objectivity and we strive for that and the sensors we use are excellent.'

'But would every sensor produce the same results?'

'Any good one, yes.'

'They'd be no variances between them?'

'Maybe very minor differences, but nothing statistically significant.'

'And this would still be the case with cheaper sensors?'

'That's why it's important to use a decent sensor.'

'So the instrument makes a difference to the veracity of the data. Okay, so let's try a thought experiment.'

'Let's not. Look, I need to get going.' Emma finished most of her remaining coffee. She was just going to have to swallow her pride and go to her sister's wedding alone. This had been a bad idea from the start, especially letting Tracey set her up with an anthropologist. A preppy anthropologist who probably thought Joy Division was a branch of happy mathematics.

'Really?' Julian said, genuinely surprised. 'This is just getting interesting.'

'You think?'

'Yes. Absolutely. Okay, say we had a sound monitoring station in situ for 30 years. Every five years we updated it to the latest technology. For the first 20 years, the data are collected by hand. A person visits the station on the hour, views a needle that varies position with decibel level, and writes down a reading. For the last ten years, the process is automated, with the reading taken automatically and the data transmitted via a mobile phone network. Given that the instrument and method of recording changes over time is the data the same in nature? Is it equivalent in accuracy and quality?'

Despite her antipathy, Emma felt compelled to defend her work. ‘Yes. Because they will have controlled for all the things you’re insinuating.’

‘I’m not insinuating anything. I’m ...’

‘Julian. Just drop it. The only person you’re convincing with this nonsense is yourself. Sound exists. We measure it. Scientifically. With integrity.’

‘That’s what I’ve been saying. Except science is contingent and relational not essential and determined.’ Julian leant back in his chair.

‘Whatever the hell that means.’

‘It means that decisions, equipment and context make a difference. You know, if this were a romcom we’d probably be making out right now.’

Emma rolled her eyes. ‘If this were a romcom I’d be forced to ask you to be my date to my sister’s wedding, where I’d stumble from one embarrassing scene to the next.’

‘Well, I’d be delighted to be your date. This is the best conversation I’ve had in ages. Have you not felt a certain frisson in the air?’

‘Frisson? No wonder most people in the academy see anthropology as a pseudoscience if that’s how you interpret signals. And God knows how you even measure signals.’

‘Well, that proves my point: data are sketchy and interpretation is in the eye of the beholder.’

‘The data were clear,’ Emma said, standing. ‘You tried to mansplain – incorrectly – my own discipline and research practices to me. I’ve no idea what Tracey was thinking ... what I was thinking. This hasn’t been so much a blind date as blind data!’

‘So you don’t want me to be your date at the wedding?’

Emma headed for the door, then stopped. What would be worse: the shame of no date, or the date from hell? Was that an experiment she really wanted to conduct? She glanced back and sighed. No way was this going to turn into a romcom. Murder without the mystery perhaps.