



UNSEEN HEROES *Previous pages:* these GCHQ workers, whose identities are secret, have conditions ranging from dyslexia to prosopagnosia — an inability to recognise faces. Their unique brains make them brilliant at certain tasks

It is known to just about everyone as The Doughnut: the Government Communications Headquarters, or GCHQ. The secret listening post in Gloucestershire is at the forefront of British intelligence, dealing with millions of signals, emails and other encrypted material every day.

This is effectively a front line in cyberspace, our first defence against cybercriminals and terrorist organisations attempting to hack into our national security systems. More than 5,300 people work here, in a building that is like a self-sufficient city state. It has its own MoD police officers patrolling its perimeters; its own gym, football team, shops and restaurants; even its own branch of Costa Coffee — where baristas receive full security screening before they are allowed to pour so much as a single espresso.

Outsiders are granted access only sparingly. Journalists in particular are screened rigorously — on the day I arrived (by strict invitation) and finally entered the building after a series of high-level security checks, I was greeted by a series of signs scribbled on sheets of A4 paper Blu-Tacked to the office doors. “Caution! Journalist interviewing. Please keep all conversation to official.” (The word “official” refers to one of three security classifications. The other two are “secret” and “top secret”.)

Given the ever-increasing scope of GCHQ’s role — which has attracted some controversy over excessive snooping — it’s not surprising that security is super-tight here. Eventually, I was chaperoned into a nondescript interview room that contained little more than a table, some chairs and a clock. A GCHQ official accompanied me at all times for the next seven hours — even while transcribing the interviews and going for a lavatory break (although, mercifully, my escort did wait outside.)

Even if I had been able to roam The Doughnut alone, I’d have struggled to stop an employee and engage them in conversation. All GCHQ operatives, at every level, seem to march around with an extraordinary sense of purpose. There is an overwhelming sense that every one of them is on a mission to save the rest of us from imminent disaster.

Unlike traditional spies, who rely on human infiltration, spooks working in signals intelligence play an even more

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secretive and sensitive role. They spend their days analysing intercepted communications — usually telephone calls or email exchanges — between our enemies, whether they’re Islamist terrorists, criminals or espionage rings. In some cases the information must first be decoded or translated before the nature of the threat can be assessed.

The workers here include linguists, mathematicians, analysts and policy advisers. The precise nature of their roles is, of course, top secret, but there is a uniform of sorts: unsmart casual — denim, trainers and T-shirts. In the international cyberwar on terror, style is not a priority.

Although GCHQ draws its employees from a wide cross-section of society, a handful of these “unsmart casuals” are very smart indeed — and not necessarily in the conventional way. GCHQ needs brains that are wired differently. Take Harry, for instance, a junior technical analyst, to whom I was introduced on my visit. At the age of just 25, Harry has access to some of the country’s most sensitive intelligence secrets. His eccentricity, intelligence and energy remind me of both Pee-wee Herman and Steve Jobs. His dress sense — a charcoal-grey tweed jacket and a bowtie — resembles Justin Timberlake’s.

Last year, he was given a couple of days by his boss to “flush out” a problem surrounding

a threat to national security, which they thought could not be solved. He says he has a habit of becoming “completely tunnel vision” when he’s faced with certain tasks, setting him off to burrow “down a rabbit hole as deep as I need to go until I get there”.

Harry’s habit is the manifestation of his dyspraxia, which is deemed a “strength” within GCHQ’s “neuro-diversity” programme — and not a “condition”, as it is described in the outside world. Dyspraxia is regarded as a developmental coordination disorder, which affects the brain’s ability to process information such as language, thought and perception, but does not impact on a person’s intelligence.

He set out to solve the problem, which his boss said was “not logically achievable”. He clutched his 10 coloured pens and notepad and began “scribbling and doodling” until he cracked it. Ultimately, it earned him one of GCHQ’s top merit awards (which I am not permitted to mention by name). “I was given a needle in a field full of needles,” says Harry, breathlessly, speaking at a pace that would cock the eyebrow of a seasoned rapper. “I started trying stuff and then not following it through, then trying something else and generally being completely upside

down, back to front, and all over the place about how I did it.” Asked exactly what the problem was, he pauses, face slightly scrunched, mirroring the subtle creases of his bowtie, which is covered with miniature, multicoloured crocodiles.

Jo, the head of the neuro-diversity programme at GCHQ, who is sitting in on the interview and is responsible for more than 300 men and women within the agency who have dyspraxia, dyslexia, autism, Asperger’s and other “profiles of difference”, offers to lend Harry a hand. A dyslexic and dyspraxic herself, Jo understands Harry and his colleagues better than anyone in the organisation. She possesses the nurturing smile and voice of a caring mother, the poise of a yogi and a hypnotic, gentle glance.

Jo’s eyes turn to the coloured pens positioned in front of Harry. The set of 10 pens are his saviour, and today, like every day, he has ensured that they are “in a proper spectrum order... and pink is nothing like red, by the way, before you say it’s in the wrong place. Pink is actually white-light-absent green. It’s the opposite of green.”

“Draw it,” Jo tells Harry, pointing at his pens. Harry’s reply is instantaneous: “No, because I invariably go into too much detail.” Harry is concerned about divulging operational or technical details, but his other

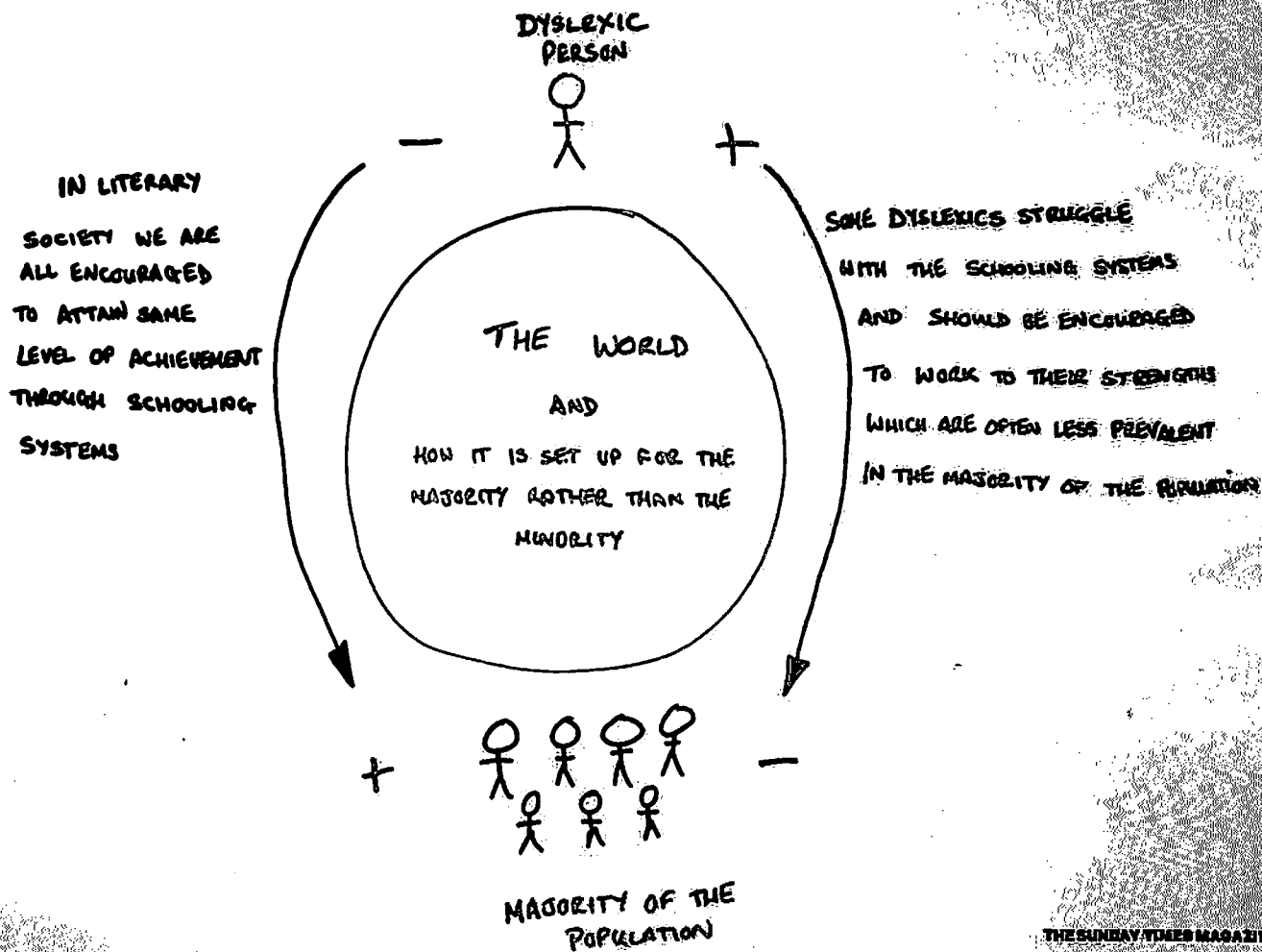
concern is going off track — another habit he warned me about. “This interview could last half an hour, or it could last a few days, because if I’m not kept on track and I’m not focusing on the points I’m trying to get to, everything else in my head is tied to it, so I keep going.”

To avoid digression, Harry applies a technique he learnt from Jo called Star — “stop, think, analyse and then respond”. He smiles and gives away a snippet of the problem he was tasked to analyse. “It was about protecting something very specific from a very specific threat in the cyber-defence... so something that was actively looking to undermine that asset or capability.”

Jo, a former school teacher, devised GCHQ’s neuro-diversity programme when she joined the organisation 18 years ago. “I’ve always had a particular interest in how the brain works,” she says. “I apply a practical approach — after discussion and sometimes a formal assessment, we work out how the individual can operate more effectively.”

Among the people I meet at GCHQ is Gill — a former chemist who was hired 40 years ago because of her ability to compile crosswords and play scrabble in Russian. She suffers from prosopagnosia, a condition also known as face blindness. She ➤➤➤

EARNING THEIR STRIPES Left: coloured pens used by Harry, a dyslexic and dyspraxic GCHQ worker, to express his thought processes. Below: whiteboard notes from GCHQ’s “neuro-diversity programme”, supporting workers with developmental disorders



specialises in intelligence analysis, but struggles to remember people's faces, including that of Jo, who she has worked with for eight years.

"I can be in a meeting with a group of people, particularly if they are new to me, and then I'll see one of them in the coffee shop half an hour later and not recognise them," says Gill, whose strength lies in "taking in information and presenting it as a model and pictures". In her job, she doesn't have to recognise the enemy from their physical characteristics. Her face blindness is not a problem: she is a "business change consultant". "The world, the environment is changing, the targets are changing," she explains, "and that's generated new ways of working for us. It's around keeping up with what our targets are, keeping up with technology in general and finding new ways of working smarter."

Such new ways of working are helped by Al, 52, who is head of IT at the agency. Long before he joined GCHQ 28 years ago, Al was told he was lazy — particularly at school, where he was averaging Es and Ds in most subjects except computer science, unaware that he was dyslexic.

Dyslexia, which affects around 10% of the population, presents challenges when it comes to reading and spelling, but those who

have it can also benefit from fine motor dexterity, and remarkable spatial awareness. They often think in images.

"I believed I was not achieving my potential and was probably lazy," Al says of his school days. "I was being told twice a year in my school reports, so by the end of it I believed it."

Around 10 years ago, Al discovered he was dyslexic after being set the nightmarish task of having to read a sensitive contract over which he had the final responsibility. "I was not able to get over the fact that I've got to sign up to the right contract, but I can't read it," he recalls. Up until then, he says, "I unconsciously avoided reading because that was the thing that slowed me down. So I would spend time talking to people, just listening to people talking about their issues, because it's much easier for me to take in information like that than to read."

But Dennis, 52, an assistant employee

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adviser who provides neuro-diverse colleagues at the agency with counselling, says the setbacks people have in their communications can be overcome — but it's a fine balance between appealing to their strengths and guiding them through their challenges.

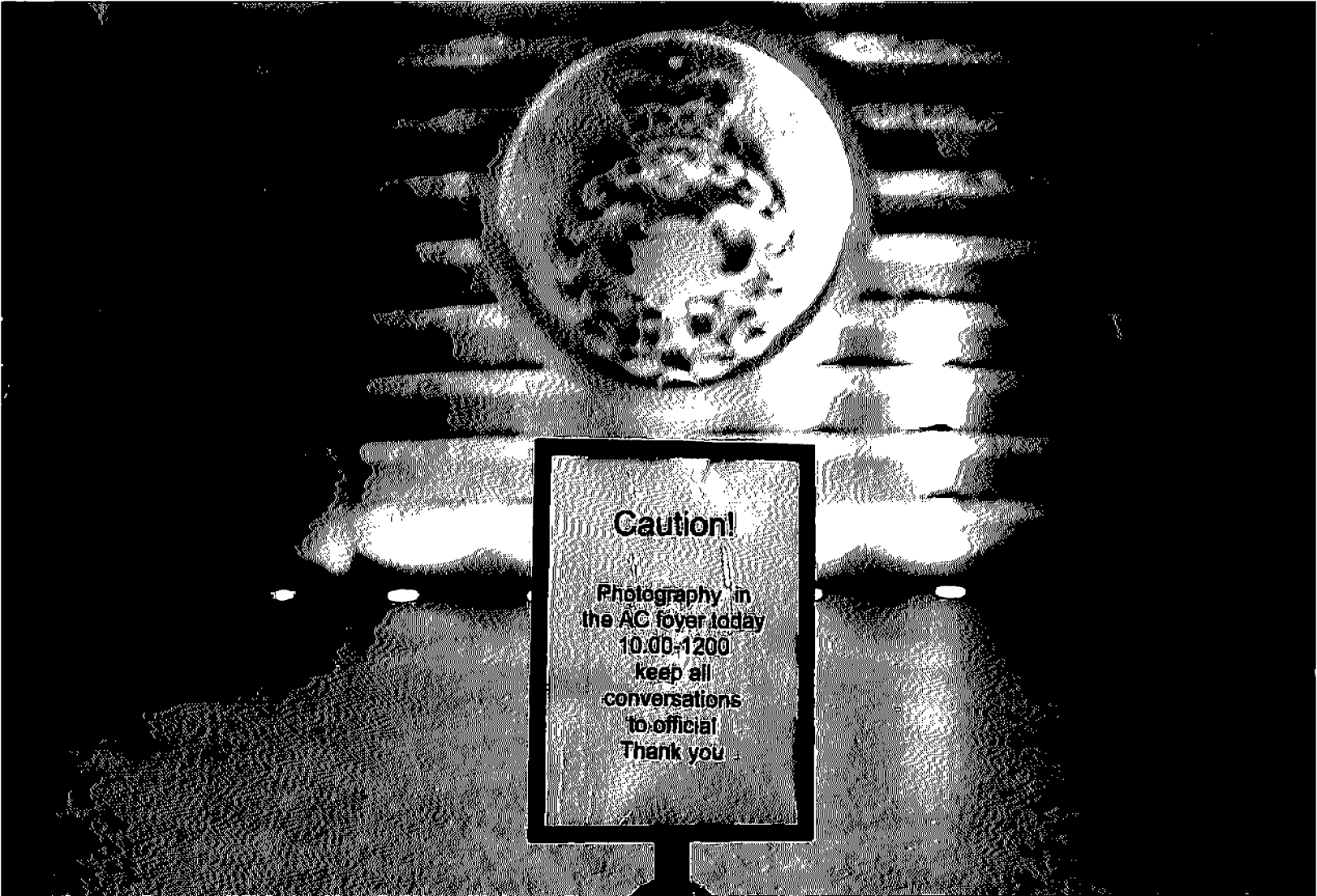
"It doesn't matter if you are autistic, dyslexic, dyspraxic — we are all individuals," says the former IT specialist, who was diagnosed with dyslexia 12 years ago. "Having a one-to-one with somebody who's autistic or Asperger's — for them, it's building a relationship. They quite often don't have relationships, so that in itself can be cathartic."

"There are a disproportionate number of people with neuro-diversity here," he says, "but they tend to float to the surface because if you have neuro-diversity it does tend to show itself in one way, shape or form."

Three years ago, John, a 46-year-old systems engineer who by his own admission has a "photographic memory" and is able to read 1,500 words a minute — a skill he picked up in a half-day course — was diagnosed with Asperger's by Jo. John once specialised in improving the performance of laser-guided bombs on British aircraft during his previous job at the Ministry of Defence, but when his wife would ask him to perform a basic task like taking potatoes out of the oven before

BARE ESSENTIALS *Below: the sparsely furnished interview room at GCHQ. Right: a sign in the foyer warns employees to be discreet*





dinner, he would struggle. John, who has been working at GCHQ for six years, says that he addresses every request literally, which at times leads to him being criticised for lacking initiative. "It's like, if you're not asking me to do it, why have I got to do it?" he says. "It's obviously not my responsibility."

Unlike Gill, whose face blindness means she stores people's names in her head as visual prompts to help her recall everything about them when she runs into them again, John sometimes requires "months" to remember people's names.

"So when you do an introduction and go around a room, forget it, I will never remember names — if I'm lucky I will remember the odd face," he says.

John's colleague, Amy, who works in internal communication, has the ability to see words, in particular spelling mistakes, "jump up and down at me". But numbers can throw her judgment off course.

While she has been working at the agency for 20 years, Amy, 41, was only diagnosed with dyspraxia several years ago after she kept parking her car in the wrong space at work. "I found that I was repeatedly getting it wrong," says Amy of the car spaces, which are rotated around the staff because of their limited availability.

"I would say 'I'm in 381,' and they would say, 'Your space is 318.'"

Upon being diagnosed by Jo, Amy, who wears a Mickey Mouse watch and has a double-first in languages, including Russian, from Oxford University, says she began to understand why she had been clumsy all her life, and why she hated sport.

But despite struggling with mental maths, she says her dyspraxia helps her process text very quickly in different languages, which gives her the ability to produce intelligence reports at great speed. "I got a grade-A intelligence report onto the foreign secretary's desk overnight during an international crisis, and also managed to edit and issue a threat-to-life counter-terrorism report late into the evening — and still got home just in time to breastfeed my baby."

Amy says that while people with neurodiversity may be viewed as "odd or weird", they are "fully accepted" at GCHQ.

Such differences forced Harry to leave two jobs before he joined the agency. He was removed from his role as a tactical mission commander in the Royal Navy because, although he knew the job inside out and had memorised every bit of detail about his job, ranging from navigation to meteorological briefings, at times his "brain wouldn't give me access to any of it". Harry has thrived at GCHQ, like many

current and former neuro-diverse alumni including, most famously, Alan Turing. The mathematician, recently the subject of an Oscar-nominated biopic *The Imitation Game*, starring Benedict Cumberbatch, was thought to be dyslexic.

Turing is credited with conceiving the world's first programmable digital computer, and with playing a pivotal role in cracking coded Nazi messages during the Second World War. He and his team of mathematicians at Bletchley Park, GCHQ's predecessor in Buckinghamshire, saved millions of lives and helped shorten the war by up to four years.

But Jo is careful not to draw too much attention to the likes of Turing, saying there is a risk of people getting too caught up with "Rain Man syndrome" — a reference to the Hollywood movie starring Dustin Hoffman as an autistic genius who could memorise phone directories, count cards and solve complicated mathematical equations in an instant.

"If one gets too bogged down in Rain Man syndrome, you lose the essence of all human potential and the wonderful plasticity of the brain," she says. And with that, Jo and her colleagues return to their posts, each of them committed and determined to play their own part in the quiet, but hugely important, war against terror ■