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Chapter 11

HOW INDIVIDUALS AND INSTITUTIONS CAN LEARN TO MAKE ROOM FOR HUMAN COGNITIVE DIVERSITY: A PERSONAL PERSPECTIVE FROM MY LIFE IN NEUROSCIENCE

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Abstract

That aspect of the autism spectrum within which the impacts on cognitive, perceptual and motor control are more subtle and more compensated tends either to be unrecognised and ignored, or else celebrated as a set of beneficial traits that produce computer programmers, engineers and the like. This approach neglects the very real problems faced by people so impacted. In a certain, very narrow way, such individuals face the worst of societal challenges because their genuine social cognitive differences both are not a match for the way most social institutions work and also are not identified and recognised and therefore do not become targets for accommodation and flexibility within such institutions. Without confusing such less visible difficulties with the severe hardships faced by many people with autism who cannot speak, cannot use speech communicatively, or cannot flexibly and reliably link thoughts to actions, one also can recognise a large class of people not included in the categorical diagnosis who are both enabled and limited by high degrees of dimensional autistic traits, gifted with analytical skills whose realisation may be hampered by social and political ineptitude, lack of allocentric perspective, and lack of management and multitasking abilities all exacerbated by high stress and anxiety. Recommendations are made as to how such individuals and the institutions within which they work can learn to accommodate each other, to the benefit of all.

Biography

Matthew Belmonte is a neuroscientist, and the brother and uncle of two people with autism. His research explores the brain physiology that underlies autistic cognitive traits in people with autism, in their family members, and in the general population. His work has shown that some of the same factors that produce autism also underlie human cognitive diversity in general; in this sense, people with autism can be said to be "human, but more so." Belmonte has worked within (and in a couple of cases been run out of!) institutions including the University of California San Diego, the University of Cambridge, Cornell University, and the National Brain Research Centre (India). He is the recipient of a 2009 US National Science Foundation Faculty Early Career Development Award, the 2010 Neil O'Connor Award from the British Psychological Society, a 2011 Fulbright-Nehru fellowship, and a 2018 NIHR Research for Patient Benefit grant.

The peculiar challenges on the margins of the autism spectrum

My experience of science and scientists is that of an infiltrator

I am brother and uncle to two people with autism, and I am a neuroscientist who studies autism. That feels awkward to say, because for so long stakeholder families and scientists have been pitted against each other: My family's experience with medical and scientific authority began half a century ago with a psychiatrist's asking my mother, “Mrs Belmonte, don't you feel guilty?” I grew up seeing my brother and my parents contort their lives to follow research protocols that advanced scientific careers more than scientific understanding. I've seen families' reports of disrupted sleep, gastrointestinal distress, and immune disease ignored for decades because autism was a disorder of social cognition. I've seen families' stories of heightened affective empathy and emotional sensitivity dismissed because people with autism are impaired at (cognitive) empathy. I've seen case reports of cognition and communication dismissed because people with autism, whose cognitive, perceptual and motor dyscontrol means that they can't look and think and do at the same time, "aren't even looking". I've watched queues of students every September enter the medical school office through one door and emerge through the other wielding a white coat, a stethoscope, and an attitude. And I've seen families spend desperate money on quackeries from auditory training to immunoglobulin infusion because science was ignoring them. So it is hard to see myself as a *bona fide* member of this opposite camp, and instead I tend to think of myself as a highly effective infiltrator, an impostor who's gone all the way. This chapter, then, is my report from the inside.

Human differences in cognition, perception and action

Part of what has made me feel so different and alien has been the traits that my brother and I share. There are many of us autism family members who as children had trouble with loud sounds, were fascinated by sensory patterns, lined up our toys in order of size or colour, had a nervous habit of hand-flapping, were clumsy, awkward and uncoordinated, couldn't immediately

recognise new faces, and felt anxious looking into others' eyes. Decades before the scientists began to recognise what came to be known as the 'broader autism phenotype' which runs in autism families (Piven et al., 1997), and before autism's strong genetic basis (Bourgeron, 2015; De Rubeis & Buxbaum, 2015; Ramaswami & Geschwind, 2018) became known, I knew that my brother and I shared a way of seeing, a frame of mind that those around us just didn't get. The high-pitched hum of the flyback transformer and its changing interference pattern as I moved my head in front of the new colour television set, the twang of the springs underneath the living-room chair as I released them at different displacements, the pattern of depressions made in the earth by raindrops underneath the playground swing, such phenomena fascinated us because of their tractable, repeatable cause and effect and their parametric variability. These traits in the social context of the 1970s were described only as shyness and peculiarity; not till the 1990s did Asperger syndrome become part of an ever broadening (Rødgaard et al., 2019) autism rubric. I argue that because autistic traits arise as a continuum throughout the population, and because the autism label is determined in part by these traits and in part by their interaction with culture (Belmonte, 2011), the question of how to accommodate autistic neurodiversity is essentially inseparable from the general question of how to accommodate human cognitive diversity. Others, too, have wrestled with the tension between the categorisation inherent in a label and the dimensional variability within and beyond its boundaries (Beardon, 2017, p. 8). This continuity between the autism spectrum and general population variability of human brains, minds and behaviours only strengthens the imperative that every individual be approached and appreciated as an individual rather than merely as a label: If you’ve seen one person, you’ve seen one person.

Language helps us compensate and camouflage these differences

Amid all these similarities, what so fundamentally differentiated my brother and me was that I could speak. Sure, sometimes I spoke too softly or too loudly, shied away from flexible social interaction, and spent most of my time poring over science books or programming computers, but I could do these things because I was able to express language- superior language, according to

my primary school teachers. My brother and I had some of the same raw material: combining it with speechlessness made it a disease, but combining it with speech made it a difference.

But successful camouflaging brings its own challenges

In citing these similarities I mean not at all to minimise or to distract from the conditions and needs of my brother, my niece, and people like them, nor- as seems to have become the vogue- to appropriate the clinical diagnosis that distinguishes them as patients and people who need treatments (Mitchell, 2019; Singer, 2019). There is a boundary between what constitutes a disease condition and what constitutes only individual difference, and I will not blur that boundary. My aim, rather, is to highlight the existence and indeed the ubiquity of individual differences in the traits in terms of which autism is defined, and in associated support needs, that might not cross the threshold for diagnosis but which do nevertheless introduce opportunities for individuals and social institutions to understand and to accommodate each other more sensitively and more effectively. These observations apply to persons who have an autism-spectrum diagnosis, persons who could have such a diagnosis, and persons who classify themselves within the ‘broader autism phenotype’ beyond the bounds of the diagnosis. In a very narrow way, those of us whose combinations of skills and deficits place us at or just beyond the margin of the autistic spectrum experience especial challenges: Our genuine social cognitive differences are not a match for the way most social institutions work, but also are not identified and recognised and therefore do not become targets for accommodation and flexibility within such institutions (Livingston et al., 2019). We tend to camouflage (Atwood, 2007; Lai et al., 2016) social cognitive differences and thus to 'pass' in social interactions, by working hard to script or to systemise (Baron-Cohen, 2008) what we're expected to say and to do. These strategies extend across the diagnostic boundary, not differing in kind for people within and outwith the autism-spectrum diagnosis (Livingston et al., 2019). And therein lies the tragic irony: Time after time in the educational world, and especially the working world, our social deficits and executive and affective dyscontrol lose us the very same jobs and opportunities (Livingston et al., 2019) that our technical skills and intensity of focus have gained us. The same academic institutions that

expound the scientific study of autism and individual differences are themselves hobbled by normative assumptions and prejudices which tend to shut down and ultimately to shut out us camouflagers when we bump up against our limits (Livingston et al., 2019) at inferring organisational politics, recognising and meeting unspoken expectations, multitasking and planning for short and long terms simultaneously, and regulating our own cognition and affect in contexts of these job-related stresses. How much more we and the institutions within which we work could do for the world, if only we and they could accommodate others!

My own experiences can suggest remedies

To suggest specific avenues for such accommodation I draw inductively on my own experiences, beginning with my perspective as a school student and continuing to my experiences as a doctoral student and a junior member of faculty, during both of which recognition for scientific insights was paired with expulsion for political and interpersonal blindness. The severity of these institutional responses grew in tandem with the seniority of my position: Whereas institutional and social structures afford junior scholars considerable room for naiveté, seniors are assumed to be able to manage projects and people, and in general to have mastered a host of social and organisational skills that never are taught explicitly and which in any case can be difficult to internalise. Indeed, early careers of workers with Asperger syndrome tend to follow a strong upward arc but then to hit a wall precisely because it's at the mid-career stage that the system expects them to take on management responsibilities (Cockayne, 2015). But let us begin at the beginning, in school, because that early interaction between me and the institutions charged with my education foreshadows and illuminates all my later experiences in the world of scholarship and employment.

School

Early recognition is possible

“I think Matthew might have a problem,” the three-year-olds' preschool teacher opined. My parents were taken aback: I was the one who spoke and hugged and made eye contact and wanted to grow up to be a geologist and pestered my mother to take me to see the railway freight yard and the sewage treatment plant. My elder brother was the one with the problem; as a child I learnt to keep my head down, powerless as I was to resist my father's rage against outrageous fortune or to salve my mother's heartache. “He doesn't play with the other children, just walks round the edge of the playground staring at the ground” explained the teacher. So my father asked me about this behaviour. “I'm looking for treasures,” I explained, by which I meant geological specimens. And that was that.

But camouflaged traits are overlooked

The teacher, of course, had been onto something which at the time bore no name, and thus no distinction or significance. In the twenty-first century the default conceptualisation of neuropsychiatric conditions as categorical, all-or-none diagnoses has given way to a more nuanced construal in which every individual varies along dimensions of these conditions. We all have some level of autistic traits, more or less (Constantino & Todd, 2003; Baron-Cohen et al., 2001), these traits are quite heritable, and the social communicative and repetitive behavioural aspects tend to be inherited more independently of each other than not (Ronald et al., 2005); it's when they coincide within one and the same individual that they begin to reinforce each other (Valla & Belmonte, 2013). Tellingly, my parents' reaction of denial turns out to be the norm in autism families; teachers' ratings of autistic traits in siblings of people with autism are more accurate than parents' ratings (Jobs et al., 2018), perhaps because parents are implicitly contrasting their non-autistic children against their frankly and categorically autistic children. And what my parents didn't see, foreshadowed what the institutions around me also would not recognise.

Scientific and lexical skills can overshadow motor and social deficits, and anxiety and depression

During primary school I revealed myself as rather prototypical: impaired at motor coordination, slow in relating socially to peers, and skilful at reading, writing, and science. Although my skills eventually were recognised and catered to, nobody knew what to do with me socially, and the motor issue went unrecognised as it didn't rise to the level of clinical significance. The curriculum, and most teachers, assumed typical capacities for motor control and social cognition. I vividly recall trying to deduce the rules of kickball which we were required to play and which everyone else on the playground seemed to know, but which never had been explained. I knew the embarrassment of being singled out, by my physical education teacher in Year 2 for being unable to coordinate arm and leg movements during jumping-jacks, by the headmaster in Year 3 who admonished me to swing my arms when I walked instead of holding them still at my sides, by a substitute teacher in Year 4 for my chronically poor penmanship, and by my classmates in a Year 7 basketball relay race in which, unable to shoot a basket or even consistently to dribble the ball, I squandered my team's lead. This chronic mismatch with normative pedagogic assumptions about motor and social cognitive skills fed the anxiety to which I was prone and culminated in an abject crying fit in Year 7. I so loved learning, but so hated what I had to go through to do it.

Deficits can be accommodated by working with, rather than against, the phenotype

In autism itself, there are a head-on approach and an indirect approach to training social skills. Most effective can be the indirect route of developing the prerequisite skills (Karanth & Archana, 2013), including attentional, executive and motor skills, whence higher-order cognition takes wing. This approach- to reiterate- applies equally both within and beyond the categorical diagnosis of autism: too often, well-meaning schools, teachers and families throw children into the deep end, as it were, into the midst of social-cognitively exhausting games, and into physical activities that exceed their current capacity for motor control. When I was so treated, I responded with anxiety and with consequent attempts to control that anxiety by withdrawing more exclusively into repetitive, predictable activities such as reading science fiction and programming my computer. This cognitive-behavioural dynamic again is of a piece with that in autism *per se:* Anyone, autistic or not, when confronted with demands that tax their capacities for cognitive

control and so heighten their anxiety, needs to self-regulate with repetitive behaviours that render the world tractable and predictable (Evans, 2000; Belmonte, 2008). Again, the head-on approach of obstructing that self-regulation only results in its externalisation and irruption as anger (Samson et al., 2015) - as evidence of which my parents' house had holes kicked in its walls!

Social skills can be scaffolded by group activities of mutual interest

I found my counterpoint to the head-on approach during the summer after Year 7, in the form of a summer residential science course (Durden, 1985; Hulbert, 2018, pp 200, 209) for which I and many similar children had qualified on the basis of standardised testing and to which we all had self-recruited. Two elements were key: at long last I had a peer group interested in the same activities as me, and we had a common activity around which we interacted socially, at a pace and with foci determined by us and in which we therefore felt invested. And the residential setting afforded many opportunities for peer interaction. The curriculum set for us was built around the concept of an 'optimal match' (Durden & Tangherlini, 1993) between each individual student's abilities and the levels of skills through which s/he was progressing; the same could be said of the social environment that we students set for ourselves (O'Reilly, 2006). This scaffolded approach is the same used in social skills therapies for autism spectrum conditions that centre on interacting with peers around an activity of common interest with well-defined rules and roles, such as Lego therapy (Legoff, 2004; Legoff & Sherman, 2006; Owens et al., 2008) or role-playing games (Rogers, 2008), and indeed most such therapeutic social activities are inventions of the participants themselves and are construed as recreation rather than explicitly as therapy. My interests and ambitions having shifted from geology through astrophysics to computer science, as I became more and more skilled at computer programming during the mid-1980s I developed a computer-mediated peer community. Along with the interventions of many perceptive, caring and highly able teachers who succeeded despite the school system, such foretastes of the academic and peer environments that I would discover at university sustained my hope throughout secondary school. Their passive absence from mainstream primary and secondary schooling is a missed opportunity, and even more worrisome is the head-on approach's active hostility to our

self-segregation into role-playing gamer and online subcultures. Yes, we needed to develop the social skills to participate in the mainstream world, but in order to do that we needed safe spaces in which to practise those skills amongst ourselves without fear and anxiety.

Motor skills, likewise, can be built around shared activities

Schools' binding up of physical education with social-cognitively demanding group activities and out-of-reach motor milestones taught me, mistakenly, that physical activity was not for me. This too was a missed opportunity. It wasn't until I was in graduate school that I found that cycling was my sport. Cycling seems a common interest amongst many computer programmers and scientists, and I can see why: it centres on a mechanical device, involves repetitive movements, and is all about maps and wayfinding. Outside any context of team racing, it doesn't involve rapid and unpredictable demands to coordinate with other people; when riding single-file in the wind, reciprocal social interactions are manageably brief and delimited. Cycling is a perfect fit for those of us who are better at understanding regular systems than at understanding unpredictable social agents. In general, physical education curricula can involve students with such support needs by offering physical activities that, like their academic counterparts, scaffold and build peer interaction around the task rather than demanding full ability at team interaction from the very first go.

University

Proactive transitional support is needed at the beginning of university

Having slid through high school computer science, only at university was I consistently confronted with my limits and with the need to organise my studies even in this my strongest of subjects. It was a difficult realisation especially because my experiences of social exclusion during primary and secondary school had taught me, unhealthily, to found my self-worth on my academic ability-

and once I ran up against the edge of that ability my ego became a fragile artifice indeed. The coping strategy that I had developed in school, where my social deficits always were overshadowed by my academic skills, no longer applied. When one is suddenly no longer the smartest, social deficits can fuel anxiety and depression.

Institutions should not assume that students choose to be aloof and uninvolved

Having no welcoming space to which to come home, I spent most of my waking hours in my office in the computer science building. When the halls of residence closed for the summer, I lived in the computer science building till I was discovered, then in the woods behind it. I was largely disconnected from the mainstream life of other human beings; my sustenance was books and algorithms. I moved through the campus like a neutrino, physically present but hardly ever interacting. Because it never occurred to me to consider how I might look through others' eyes, I grew a long beard and eschewed footwear; belatedly I learnt that I was seen as creepy and threatening. This lack of social perspective-taking set me apart even within spaces that ought to have been safer: In the computer science department I was scolded for abusing shared space, in the science fiction club I was irritatedly hushed for quoting lines from memory during a *Star Trek* screening. Impaired at face recognition, I either got names mixed up and committed *faux pas,* or inhibited myself for fear of doing so. Ill-timed or ill-contextualised attempts at humour either fell flat or evoked indignation. I lost interest in my engineering curriculum, and my marks were down. At a nadir, I succumbed to depression, which is common in camouflagers (Lai et al. 2016; Cage et al., 2018). It's a popular misconception that people with autism spectrum conditions aren't motivated towards social interaction; what's actually the case is that they don't display that motivation using conventional social signals (Jaswal & Akhtar, 2018), and become even more vulnerable to depression when they're excluded and ignored. This same dynamic can apply regardless of whether one has, could have, or sets oneself just outside the autism diagnosis.

Finding the right living/learning group can be the key to survival within a large institution

Ultimately it was my sheer desperation for a change that gave me the guts to try something entirely new: a residential college (Gordon, 1974, p. 236) for the creative and performing arts within the university, which had a reputation for tolerance and indeed celebration of nonconformism, was holding a banquet. I bought a ticket. If there was anywhere that I would fit in, I thought, it would be here. Nervously, I sat down at a table where I knew nobody. And they spoke with me. And they were interested. And they didn't jump to judgement. The wave of relief, the ability after so many years to exhale, to stop expending so much cognitive effort to ascertain what I should say and instead just to say what I thought and felt, was just like the summer science course at the end of Year 7. I had found a home. By the end of my next two years I was on the Dean's list for academic excellence, had complemented my specialisation in computer science with another in English literature, and had taken up letterpress printmaking. And without the constant work of being an actor playing myself, I was able to take up acting, writing and directing in amateur theatre, a great activity for educating oneself about social perspective-taking (Corbett et al., 2016) and also for social scaffolding, because there's a script and one can study the characters in one's own good time, and there are light and sound boards to be operated. (This is why I've always thought that the question “I would rather go to the theatre than to a museum” on the Autism Spectrum Quotient (Baron-Cohen et al., 2001) is an uninformative one: You'll find camouflagers in both these places, for somewhat complementary reasons.) What is it that made the difference? In a 1999 report on residential colleges (Beland et al., 1999), we described this sense of having a supportive and self-defined home as 'community-in-the-small', complementing the institutional community-in-the-large constituted by the university.

Proactive transitional support is needed at the end of university

As a student one has a script to follow: study hard, get good marks. After graduation, the bottom drops out. My interests having grown beyond computing and beyond what I saw as all too conventional career paths, I hadn't at all explored what to do next. I landed back in London with a deep understanding of scholarly subjects but still no knowledge at all about how to apply for a job, and still unable to see myself as others saw me or to understand how others saw

themselves. My strategy of cold-calling and distributing CVs must have come across as uncouth, and English employers' backhanded style of communication didn't help matters: when I was told dismissively “Let me take your details and we shall ring you back” I actually waited all day by the phone to be rung back! Turned down for a job as a train guard on the Underground (having always been keen on trains and transport networks), I ended up underemployed as a part-time shop assistant, selling computer discs and laser printer cards, delivering computers (rather than programming them as I had done till then), and self-medicating with beer when I could afford it. As my bank balance dwindled, I bailed out and went back to the only life that I knew, returning to my old university town, squatting in a closet in my old college and working as a kitchen help.

Graduate school

Without support, attachment to places and routines can impede necessary transitions

Camouflagers are, in a way, sentimentalists because we think in terms of concrete details and places, we attach emotional significance to those places where we've been happy or content. We all too often fail to distinguish transient community from persistent geography, people from places. I have encountered many camouflagers who become stuck in a place and at a life stage; obstinately they hang around student communities as one by one their friends acquire jobs, relationships and lives beyond university. They haunt computing societies, science fiction reading groups, theatre groups, and as their age difference grows more and more obvious they become ostracised as creepy hangers-on, usurpers of student status, losers. The tragedy of these people is that they have so much to contribute to the world if only they could be supported into a role in which they could make that contribution. It was perhaps only by lucky circumstance that I myself avoided becoming one of these people, because doing so is the default if no action is taken. My move thousands of miles away to graduate school was another act of desperation, like my move into the residential college, because I saw what was coming if I didn't make a change and I

thought that as a doctoral student I could at least continue being a student, which was a livelihood that I knew.

Residential communities are as crucial beyond as within the undergraduate years

In graduate school the intentional residential community that had been my support as an undergraduate was not to be found; I was allotted to a student flat. Just as had happened during my first years as an undergraduate, I found myself spending all my waking hours in the laboratory or in the library, as there was little else to my life. I joined a collective of idealistic communist vegetarians (though I wasn't one) who seemed the only alternative cultural space on campus (Wolfson, 2014, p. 660). I made friends with a few graduate students who were into Dungeons & Dragons and *Star Trek.* The crucial difference, though, is that I never had that residential group to which to come home. Universities tend to treat postgraduates, doctoral students and postdocs as people who bring their own lives separate from their existences as students, and indeed many do. But that one-size-fits-all assumption, that graduates will not want group living in residential, interest-focussed communities, tends not to be true in the case of camouflagers, and leaves us high and dry. I have heard a researcher who studies the ‘broader autism phenotype’ describe participation in group houses as an indicator of non-autistic traits. On the contrary, in my own experience of fellow geeks, we are the most likely to form such intentional communities, specifically because there's no other way that we can have a community: if it isn't intentional, if it doesn't happen where we live, then it isn't as though it's going to happen in a bar. I failed where I lacked any residential community, and succeeded when I found it again in the form of a computing society (Chuu et al., 2001; Gonzalez, 2019) and a group house at MIT. At Cambridge, where postdoctoral scholars were largely excluded from the residential college system, I again fell into the habit of spending most of my waking hours in the office; I remember my years there as professionally my most productive and personally my most solitary and lonely. Indeed the twenty-first century's divorce of labour from workspace has spurred recognition of this need for community in a surge of interest in co-working (Pohler, 2012) and cohousing (Williams, 2005;

Kameka, 2015), trends that can advantage camouflagers especially when focussed around common interests.

Coping with job stress breaks down suddenly at one's limit of cognitive and affective control

Detail-focussed, frank and dependable, camouflagers make good employees until suddenly we don't: in the best of circumstances we can organise our own projects, remind ourselves to take others' perspectives and to anticipate their needs, and respond to changes flexibly, creating a deserved impression of capability which makes us seem not to need any help or support at all. When we're placed under stress, though, our cognitively demanding approach of attending to every detail in both professional and interpersonal life overtaxes our resources (Belmonte, 2008). In this circumstance we revert to script and ritual, and as our social perspective-taking, which was never great to begin with, goes out the window we become unreasonably rigid, exacting, defensive and argumentative. In short, we turn into obnoxious Mr Hydes. Exactly when we owe it to ourselves and to the people around us to make an effort to think and to behave mindfully, we fall back on unthinking rigidity. And colleagues don't cut us any slack, because we've already 'proven' that we don't need help. This mode of breakdown was my undoing in graduate school (Belmonte, 2017): I took up more and more of my laboratory's computer programming and systems administration tasks until, effectively, I had not only my doctoral research to conduct but also the equivalent of a full-time job. The amount of work that I was putting in didn't show, because I was good at making things run smoothly. The stress, anxiety and insomnia came to a head around a major out-of-town conference, whence I was denied boarding on my return flight after asking an airport security guard in the United States about construal of the Fourth Amendment. The end result was my effective expulsion from graduate school and loss of priority on a publication that would have been the culmination of my four years of work. The largest failure in this tale is my own, of course, but had structures been in place to monitor my state of mental health, anticipating a breakdown of compensatory mechanisms, these bad dynamics might have been detected before all was lost. The most effective prophylaxis against this mode of cognitive-affective failure is the sort of residential learning community that I have described. Even

without that secure home base, though, students and supervisors can be facilitated in structured and probing discussion about how time is being spent, what stresses are arising, and what support is needed.

In the deep end

Postdoctoral scholars need explicit teaching on how to apply for faculty posts

I was successful as a postdoc because I was so single-minded, churning out major research reports and three review papers that helped set the direction of autism research in terms of brain connectivity. But just as was the case at the end of my undergraduate years, I gave myself no time to think of where to go next. I was being invited to deliver talks at many universities and international conferences. On one such occasion my host voiced his hope that I could “meet some people here and see some of our facilities”; it was only some years later that I realised that this was a coded invitation to apply for a faculty job at his institution, whereas I had taken it at face value and enjoyed the tour. I also discovered that many extramural colleagues had been assuming that I already held faculty rank, so many years and so many institutions having intervened since my first (failed) attempt at graduate school; as a postdoc myself, I regularly received enquiries from people who wanted to work with me as postdocs! The irony was that I was effectively unemployed, my postdoctoral funding having run out after two years, and wondering how to find out about faculty jobs. Someone told me that jobs were advertised in the *Chronicle of Higher Education,* but all that I could find there were jobs in English departments and the like. Nobody ever told me to read the *APS Observer.* And nobody ever advised me to apply for a career development grant. The generalisable theme in this story is that camouflagers are good at following algorithms, but when nobody bothers to tell us the algorithm, the unexplained process of career progression can be as mystifying as the unexplained rules of kickball were, all those years ago. In the end I applied to the only two jobs that I found, one in an English department on cognitive literary studies advertised in the *Chronicle,* and one in a department of

human development that I heard about at a conference and for which I threw together an application in a weekend, just after the deadline. I was offered both. I took up the latter, as it was at my old undergraduate institution in a town that I, again confusing geography and community, thought would be familiar.

New members of faculty need to be assessed on merits, and told what they must do to progress

The American academic tenure system is not for the faint of heart, nor the anxiety-prone camouflager. In the American system one gets into a faculty post by being very good at doing one thing, but one stays in a faculty post by being good at multitasking ten things at once, not to mention navigating unspoken workplace politics. In the British system one gets into a faculty post by being good enough at doing one thing to get shortlisted, and then saying the right things during a perfunctory and adversarial farce of an interview for which only the neurotypical side of the table knows the script, or indeed knows that there is a script. Autistic traits thus make people good at getting faculty jobs but lousy at keeping them in America, and good at getting shortlisted but nearly unable to get offers in Britain. It doesn't have to be this way: if candidates with individualised support needs were assessed on their research merits, and if faculties could separate research and teaching tasks into different time periods, or even into separate jobs, then getting and keeping a job after a postdoc would be straightforward. What if there were a path that would allow us to keep doing what we're good at, to keep focussing on one project at a time?

Expectations ought not to be left unspoken

As a new member of faculty, I was given a budget to set up an electroencephalography (EEG) laboratory. In my detail-orientated mindset, I gathered all possible data on all possible EEG systems. I visited manufacturers. I spent a year and a half selecting and integrating what I needed to make the best laboratory possible. What didn’t come through to me from the outset is that it wasn't going to be just my laboratory; it was going to be a resource for the department and I ought to have been spending no more than a few months putting together a laboratory that was

good enough and then getting on with it, making my progress visible, and cementing collaborations with the senior faculty who would be voting on my tenure. I also was drafted to be part of a team applying for a grant for a magnetic resonance scanner; I participated but made no attempt to hide the reality that my own priorities lay with other techniques of brain imaging. And although I of course made a point of being on campus when I had to teach, the senior faculty's summary of how I spent my one non-teaching term is telling: "Chair rightly assumed that, being a full-time faculty at Cornell, Matthew would reside in Ithaca. Matthew, however, did not interpret it that way, and believed that residence in Ithaca was not required." I was working all the time, but this work habit of mine was not visible. Had I been mandated regular hours on campus in very explicit and concrete terms, and been given an unequivocal schedule of research responsibilities, I would have conformed. Instead I must have come across to casually observing colleagues as someone who lacked enthusiasm for the team and who wasn't working at all hard.

Multitasking must be managed so as not to exceed one's limit of cognitive control; close advice, assistance and monitoring must be provided when circumstances preclude a focus on only one task at a time

Any new faculty member will be familiar with the impossible simultaneity of setting up a laboratory, writing up one's completed research, conducting new research, applying for grants for future research, and planning and delivering several courses for the first time. I threw myself into developing a state-of-the-art seminar on autism. The evaluations were bimodal: those who liked it gushed that they'd learnt how to read the primary research literature, had understood that scientists can argue ideologically over how to interpret their data, had had opportunity to evaluate science critically and had received detailed and personalised qualitative evaluations. Those who hated it complained that there was no textbook, that the articles that we read disagreed, that the daily essay assignments were too much writing, that qualitative feedback prioritised detail over timeliness and that they hadn't been given quantitative grades on formative assignments. Some students also observed that the agenda seemed preoccupied with methodological detail at the expense of thematic understanding, that feedback likewise criticised shortcomings of detail

without praising students' understanding in general, and that I gave short shrift to comments for which I wasn't prepared: "Belmonte needs to respect unexpected class comments and allow discussion to develop around them rather than spouting his ideas and condescendingly shooting down anything that surprises him"; when viewed in autism's frame of preoccupation with the detailed and the concrete, these criticisms hit home. The worst of it was that between the laboratory setup, my grant application and my seminar course, I left myself without enough time to plan the introductory neuroscience lectures that I'd been assigned for the next term. In that disaster of a course some days I'd walk into the lecture theatre without enough slides to fill the hour, or with someone else's slides from the previous year that I hadn't had time to review. I became a much worse teacher than I had been, and the students were shortchanged. Had I been advised to use my teaching reductions from the very beginning of my employment, so as to be planning no more than one new course at a time, and had I been given intermediate deadlines for having course materials prepared for review by a mentor, I and my students might have fared better.

Students (and colleagues) need warning not to misinterpret vocal and motor traits as aggression or as condescension

Some of my students' evaluations called me angry, rude and unapproachable, and it was only belatedly that I recognised that, just as had happened with that airport security guard, my loud, affectively dysmodulated voice and stance when I was excited about making a point had been mistaken for an angry voice and confrontational body-language. Several students also called me condescending, jolting me into a realisation that when I focus on delivering and discussing the content I cannot simultaneously focus on adjusting my vocal tone and pace to the speaker, and therefore risk being perceived as lecturing and pedantic. When I next taught a seminar, I included on the syllabus an explanation of these behaviours of mine and how they relate to autistic traits. (This context was all the more pertinent because the subject of the seminar was autism.) The allegations of anger disappeared, though some students still complained of perceived condescension.

People who lack social insight are liable to credit poor judges; they must be confronted with those who would be their most severe critics in the workplace, but also supported with knowledgeable impartial advice

The academic department that had employed me was, not unlike many others, riven with political undercurrents and cliques of different scholarly emphases and agendas. I stepped into the middle of this unspoken factionalism under the false assumption that because it was the department as a whole that had hired me, each member of the department would harbour the same expectations of me. In retrospect, those with other agendas withdrew from advising me whereas those with related agendas harboured a Pollyanna faith that a positive tenure decision for me was assured. Had I had a group of intramural mentors spanning all the factions, my eyes might have been opened. My main source of external advice at the time was a friend from the Dungeons & Dragons group who had dropped out of graduate school and, unbeknownst to me, fallen into alcoholism; she too had been cheated by the academic system's lack of advising and by the unspoken and ill-defined nature of its expectations, and she had left without finishing. From time to time she would telephone me and try to convince me that my life would be ruined unless I quit my job. Perhaps because she had been a senior graduate student at the time that I was beginning graduate school, and because my sense of being an impostor within academia had never disappeared, I began to listen to her, feeding an anxiety as to whether I was making the right life choice.

Once a career decision has been made, stick with it for a fixed term! Don't anxiously second-guess

With her advice weighing on me, when I was confronted with an unsolicited offer of a non-faculty job I dithered. After seven months my faculty post seemed a train-wreck of poor multitasking, denied grant applications, stagnant research and failed teaching. If I left my tenure-track faculty job I would never get another, and I would have to work on someone else's research agenda not

directly related to my own interest, autism; but I would be in a city whose geography / community I knew, and facing a stress level that would be manageable. If I stayed, I felt like I was going to explode. At the end of a dark day with clouds closing in, a few seconds before the midnight deadline for my reply, I emailed my acceptance of the job, and began arranging a leave of absence from my faculty post. The next morning dawned bright and sunny and springlike and I found myself already regretting what I had done, yet feeling bound to follow through. In the event, I couldn't devote full attention to the new job because I couldn't stop thinking about autism, spending my spare time on grant applications and manuscripts. In retrospect, I ought to have treated my faculty post as a commitment to a fixed term, no more, no less; that is, I ought to have stuck with it, but without any expectation of what would come next, and therefore without any anxiety about the looming tenure decision. Such commitments need to be made in advance because camouflagers' executive function makes us liable to get stuck on underdetermined choices, unable to put them aside once decided. Overwhelmed by a world of what-ifs, of hypotheticals and counterfactuals, we become unable to live the real life in front of us.

Single-mindedness combined with literal interpretation can be perceived as aggression; all parties can benefit from training in mediation and conflict resolution

Even amid so many missteps and miscommunications, I might yet have attained re-appointment halfway to tenure had I not taken leave to try out the other job, and were it not for a chance occurrence at that other workplace: One night I was observed via CCTV and mistaken for a thief, perhaps because I was leaving at 2am and casually attired, neither of which is unusual for me; I have a long history of being approached and sometimes detained by authorities because my behaviour differs from that of most other people. I asked an administrator who it was who had been monitoring the camera because I wanted to discuss the incident with that person. She replied "I do not have a specific name to provide you with", though I deduced from circumstances that she must indeed have had the monitor's name. I kept emailing her; she kept reiterating "I have no further information for you in this matter" and eventually stopped responding to my repeated queries. When she left for a different institution in the same city, I called at her new

office to try to get a definitive answer, but instead got a *persona non grata* notice and a police visit to my own department's chairperson. A friend later suggested that most people aren't calibrated socially for my level of obsessionality, and that "I have no further information for you in this matter" might actually have been code for "I don't want to tell you." Perhaps, then, the administrator had thought that she had actually answered my question, and was wondering why I kept asking it at the same time that I was wondering why she wouldn't answer. Institutions and individuals can head off such misunderstandings by being open to face-to-face meetings when miscommunications seem to be persisting via email, and asking themselves to reframe each party's perspective from the other's point of view. I have found formal mediation training (MIT, 1996) of great value in framing rules and procedures for conflict resolution.

If you're a stranger, go to a strange land

Approaches to the foreign[1] are a useful model for approach to people with autistic traits

Some years ago, Gillberg et al. (1987) found that within the Swedish population, children born to immigrant mothers had a greater chance of being autistic. Speculation arose about some mysterious protective effect of Scandinavian population genetics, but the most parsimonious explanation is that autistic nonconformism with mainstream culture presents no barrier in the eyes of partners who come from outside that culture, and therefore children of immigrant mothers are more likely also to be children of autism-prone fathers (Gillberg & Gillberg, 1996). The same seems true of migrants to any social context, including the workplace: After the stress of my tenure failure it was a relief to accept a post in India where, having spent my life till that point feeling like an alien, I entered a sociocultural context within which I actually was an alien, where my behavioural oddities were ascribed to incomplete acculturation and where each context's demands were explained to me. What if institutions could treat any newcomer the same as they treat foreigners; what if people whose cognition and behaviour render them foreigners within their

[1] Editor's note: The author uses the expression "the foreign" as a general reference to foreign cultures and individuals.

‘own’ cultures were afforded the chance to learn these cultures as explicitly as we learn foreign ones?

It was a bitter irony to be awarded a large and prestigious career development grant just a few days before the senior faculty voted to deny me re-appointment halfway to tenure, a loss not only for autism research but also for me and the institution equally. The lessons for all concerned are these: although the world is, by definition, a 'neurotypical' one and as such individuals must not shirk the responsibility to adapt reasonably, institutions can facilitate this process by learning to accommodate reasonably. Work with, rather than against, each individual's cognitive strengths. Scaffold social skills with activities that appeal to these strengths. Support transitions, to overcome unproductive and limiting attachment to places and routines. Encourage themed living/learning groups, at all years and levels. Be prepared for sudden breakdowns of coping mechanisms at one's limit of stress and anxiety. Give explicit instructions about how to get, to do, and to keep a job. Advise, assist, and monitor to manage multitasking. Educate students, peers and authorities about vocal, motor and executive traits liable to misinterpretation as aggression or condescension. Integrate knowledgeable, impartial and unbiased advising, and avoid occasions for second-guessing decisions based on such advice. And offer every newcomer the same tolerance and patient explanation that would be offered to a foreigner, because many of us are, in a sense, visitors from another world, here and moving amongst you.

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