

Different Minds



~~Harnessing~~ *Unleashing* the Latent
Superpower Behind eResearch



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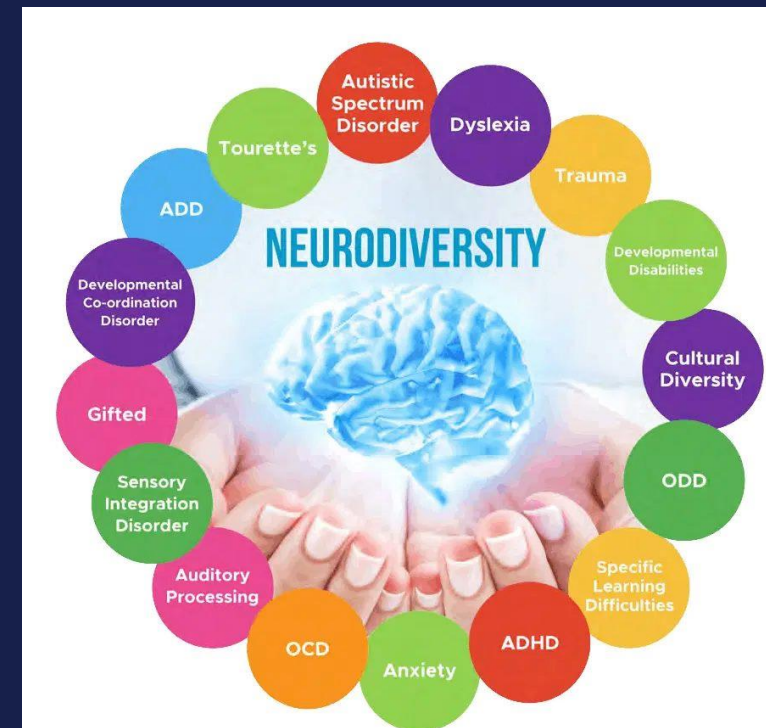
eResearch Australasia 2023, Brisbane 16-20 October

Neurodiversity

Approximately 1 in 8 people are intrinsically neurodivergent

- Developmental Disorders, e.g. Dyslexia, Dysgraphia, Dyscalculia, Dyspraxia
 - Attention Deficit-Hyperactivity Disorder (ADHD)
 - Tourette Syndrome
- (etc)
- **Autism Spectrum Disorder Condition Levels 1 2 3**
 (“Asperger Syndrome”)

* *APA DSM-5-TR 2022, ASfAR 2022, ABS 2018, AV*



Autistic Attributes

- Information processing: imagination, visualisation, abstraction, patterns, logic, detail, eidetic memory, “spongeing”, nuance, pedantry.....
- Hyperfocus
- Language, communication and social skills, self awareness
- Sensory sensitivities
- Emotional regulation
- Physical manifestations: motor skills, tics, vocalisations, fidgets *etc* (“*stimming*”)

- Attributes reflect difficulty in *filtering* inputs and outputs
- Attributes can be hidden by *masking* or *mirroring*



Autistic Attributes in Society

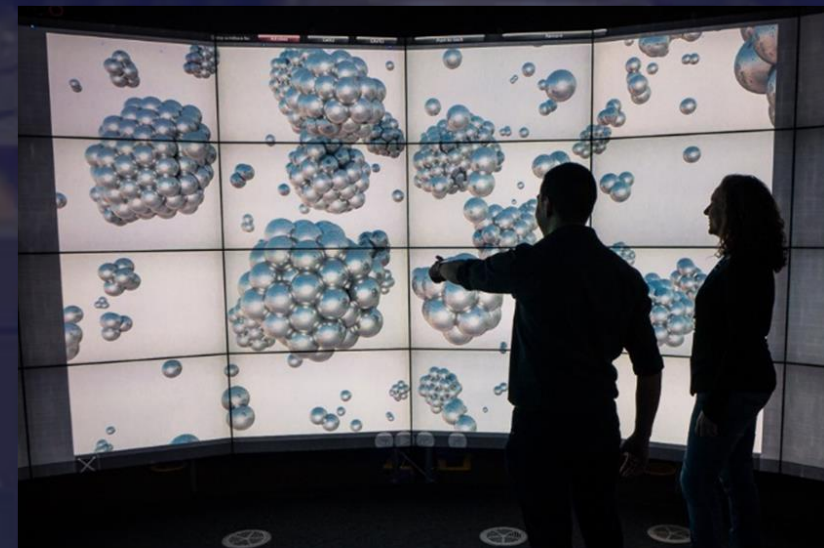


<https://autism-all-stars.org/famous-faces> , Wikimedia commons, * Australian Broadcasting Corporation



So Why eResearch?

- **Explicit combination of information management & technology skills applied to research / innovation / academic sectors**
- **Spans STEM and HASS fields**
- **Sector attractions: meritocracy, altruism, common good (not-for-profit)**
- **Sector challenges: contradictions, competition, self promotion**
- **eResearch still an unstructured career path.....**



Social Inclusion (belonging)

Peer mentor groups

Teens, young adults,
adults, parents, Rainbow,
partners

Interest Groups

D&D
Minecraft

Knowhow community
events

Employment Inclusion

Work Experience
Program

Job Coaching (lived
experience coaches)

Workplace
Training & coaching

HR Support

About AV

- Vision: **CHANGE** in Social & employment inclusion that appreciates & amplifies autistic strengths
- started by peers in 1991: place to **belong**
- niche for independently capable autistics
- all have lived experience: 80% autistic team, over 55 **volunteers**
- codesign all programs: NOT therapy based

Advocacy to create Change



Fostering Neurodiversity

- Equitable and inclusive environment!
- Tolerance & empathy – challenges not always apparent
- Effective, flexible & adaptive communication
- Flexible, fit for purpose work-time and work-space
- Minimise resource waste: e.g. discrimination, pointless bureaucracy / regulations
- Minimise adversarial or polarised attitudes (“binary thinking”)
- Awareness of sensitivities / distractions / triggers – noise, interruptions, conflicts, *etc*
- Headspace: “skunk works”, corporate citizenship, training
- Networking & mentoring – structured vs unstructured
- Recruiting: assessing past vs potential performance
- Entry pipeline, e.g. work experience programs



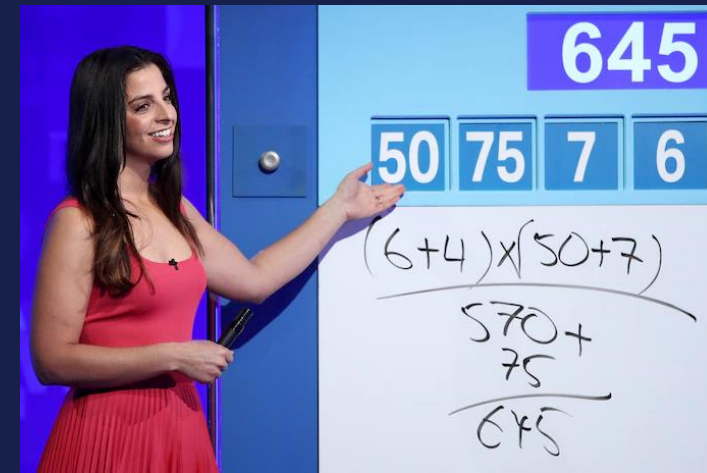
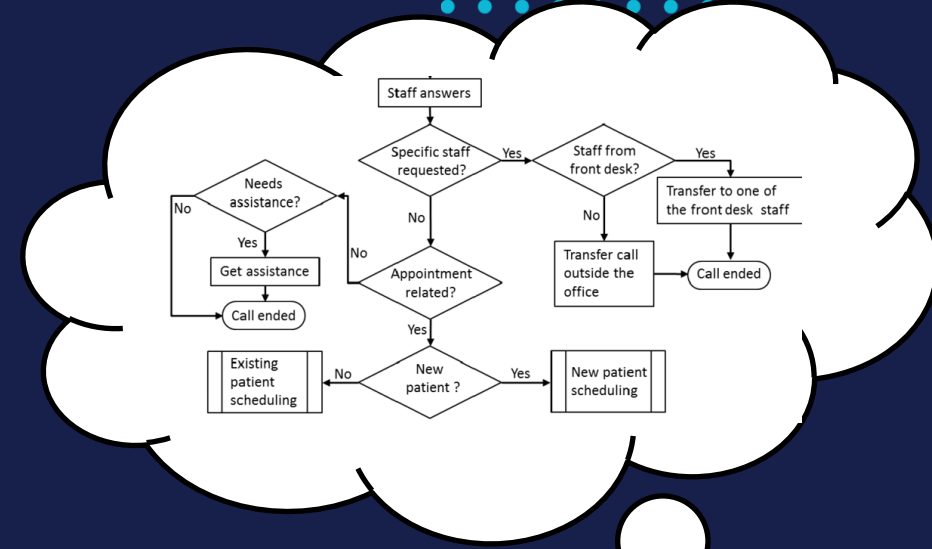
Management by Algorithm

Should AI think more like humans, or vice versa?!

- Logic
- Numeracy
- Statistical concepts & principles, e.g. for qualitative mental models

Managing with uncertainty in information

- *Objectivity*: ability to avoid cognitive biases
- *Measurable vs Hidden* costs & benefits (“scope neglect” / “precision bias”)
- Risk management
- Transitions and change management
- Investments
- Transfer of responsibilities – a.k.a. Leadership

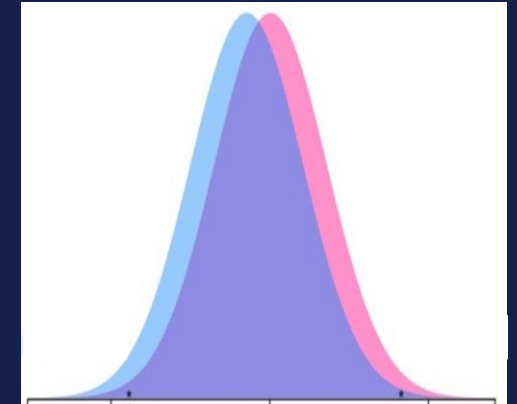


Managing Diversity

- Distinction between *Advocacy* (subjective) and *Policy* (objective)
- Personal attributes by probability distribution function
- Sampling from populations and sub-populations (monoculture vs stereotypes)
- Norms and outliers (“exceptional” attributes)
- Correlations, cross-correlations, intersectionality

Recruiting:

- essential / desirable criteria
- hard vs soft skills
- scoring by weighted summation
- team balance?



Thank You



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Supplementary Notes



A random sample of autism statistics

- An estimated 3-5% of the Australian population have an autism condition.
- Males are currently approx. 3.5 times more likely than females to be diagnosed. This ratio is decreasing over time.
- 1 in 4 Australians have a family member with autism.
- People with autism are 3 x more likely to be unemployed than other people with disabilities, and 8 x more likely than the general population.
- 50-70% of people with autism experience mental health conditions, with a suicide rate 9 times greater than the general population.
- Australians with autism have a life expectancy gap of 20-36 years relative to the general population.



Autism policy, research, advocacy and support in Australia

<https://australianautismalliance.org.au/who-we-are/>

<https://www.dss.gov.au/disability-and-carers/national-autism-strategy>

NDIS diagnosis is currently based on the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition Text Revision 2022 ("DSM-5-TR")
Autism Spectrum Disorder Diagnostic Criteria 299.00 (F84.0)



Diversity and Disclosure

Which of these questions is currently considered inappropriate in a public or work environment, and why?

- What is your age
- What is your gender
- What is your religion
- Do you have a Culturally & Linguistically Diverse (CALD) background
- Do you have a disability
- **Do you have autism**
- Do you have a medical condition
- Do you have a mental health condition



What Has Become of (Scientific) Research?

- L.Mannix, *The Age*, 14 March 2023

<https://www.theage.com.au/national/science-is-slowng-down-here-s-what-we-can-do-about-it-20230314-p5crwh.html>

- D.Jones, "A Science Futures Market", *Nature* 387, p.763, 1997 (!)

<https://www.nature.com/articles/42826>

<https://rdcu.be/dmxXS>

*"Science is no longer a collective endeavour to understand the physical world;
it is a competitive struggle to acquire grant money."*



The AU Principles of Organisational Management by Statistical Thermodynamics*

EVOLUTION
MOMENTUM
BALANCE
OBJECTIVITY
SCALABILITY
SUSTAINABILITY

* *...with a dash of evolutionary biology*

