

Neurodiversity



Professor Amanda Kirby

Aims of the talk

- What is neurodiversity?
- Recognising challenges **AND** strengths
- Delivering a holistic ‘whole school/whole student approach’ benefits all students.

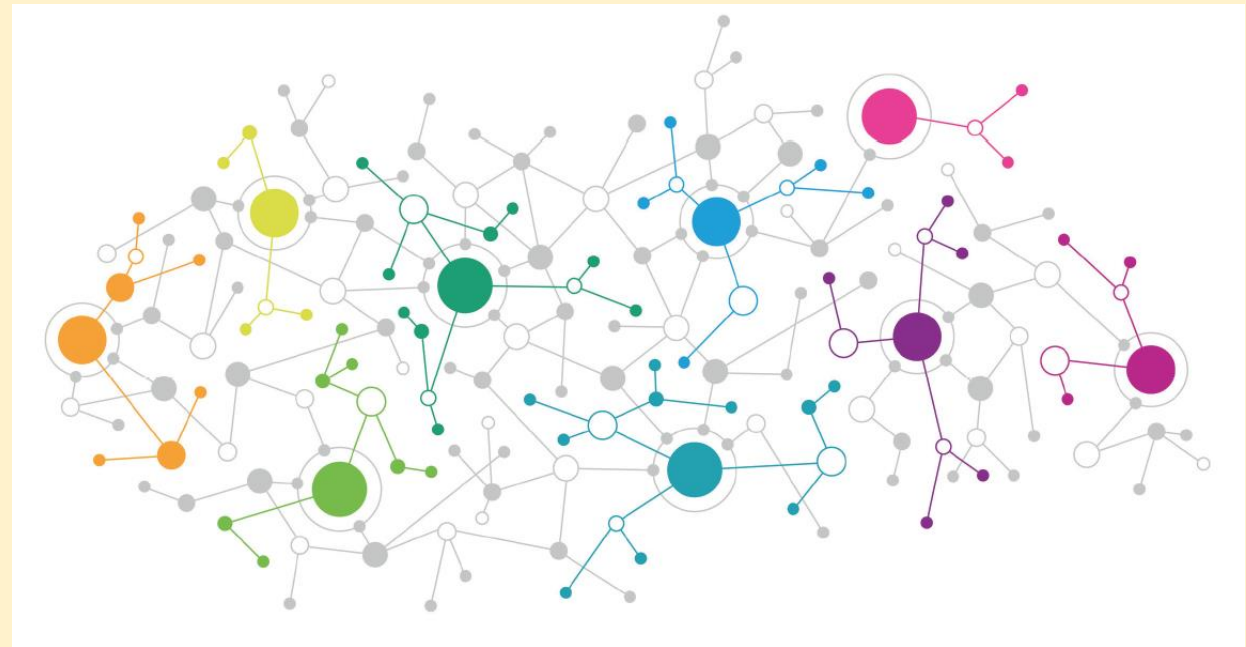


What does neurodiversity/divergence mean?

- Diversity
- Divergence

A term that may be used to encompass people with a range of cognitive skills and profiles.

Moves away from terms like '*disordered*'.



Neurodiversity or Neurotypical?

Other terms include:

- Developmental **Disorders**
- **Specific** Learning **Difficulties/Differences**
- Neurodevelopmental Disorders
- Hidden **Impairments**
- Differently abled
- Learning Difficulties



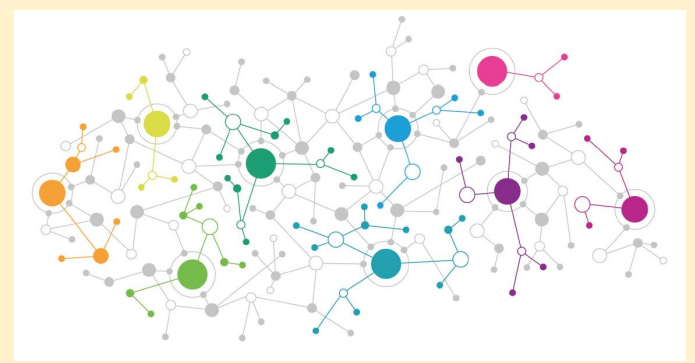
**The language we
use has different
meanings to
different people**

**Disorder
Difference
Disability
Condition
Spectrum
Syndrome**

And changes over time.....



Choosing the language



Shame



Sense of self

Different

Hidden

Not the 'norm'

Disorder

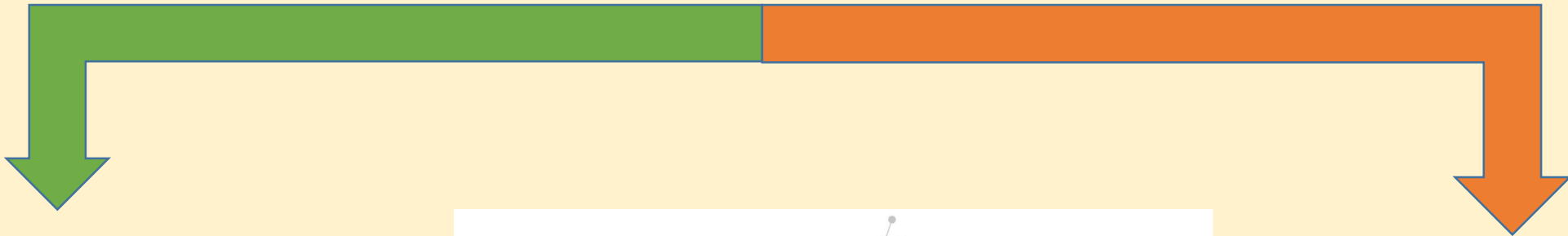
Impaired

Feeling of
Belonging

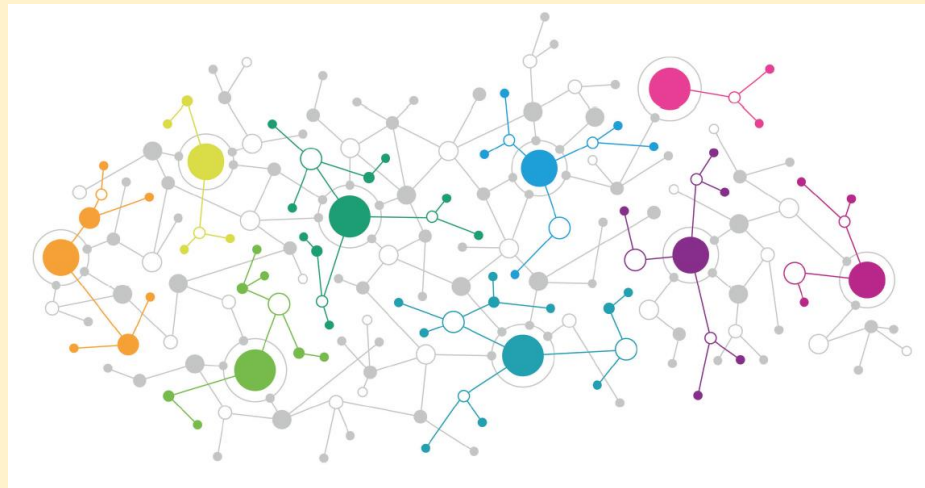
Defined by what
you can do

Neurodiversity

Seeing the person's strengths

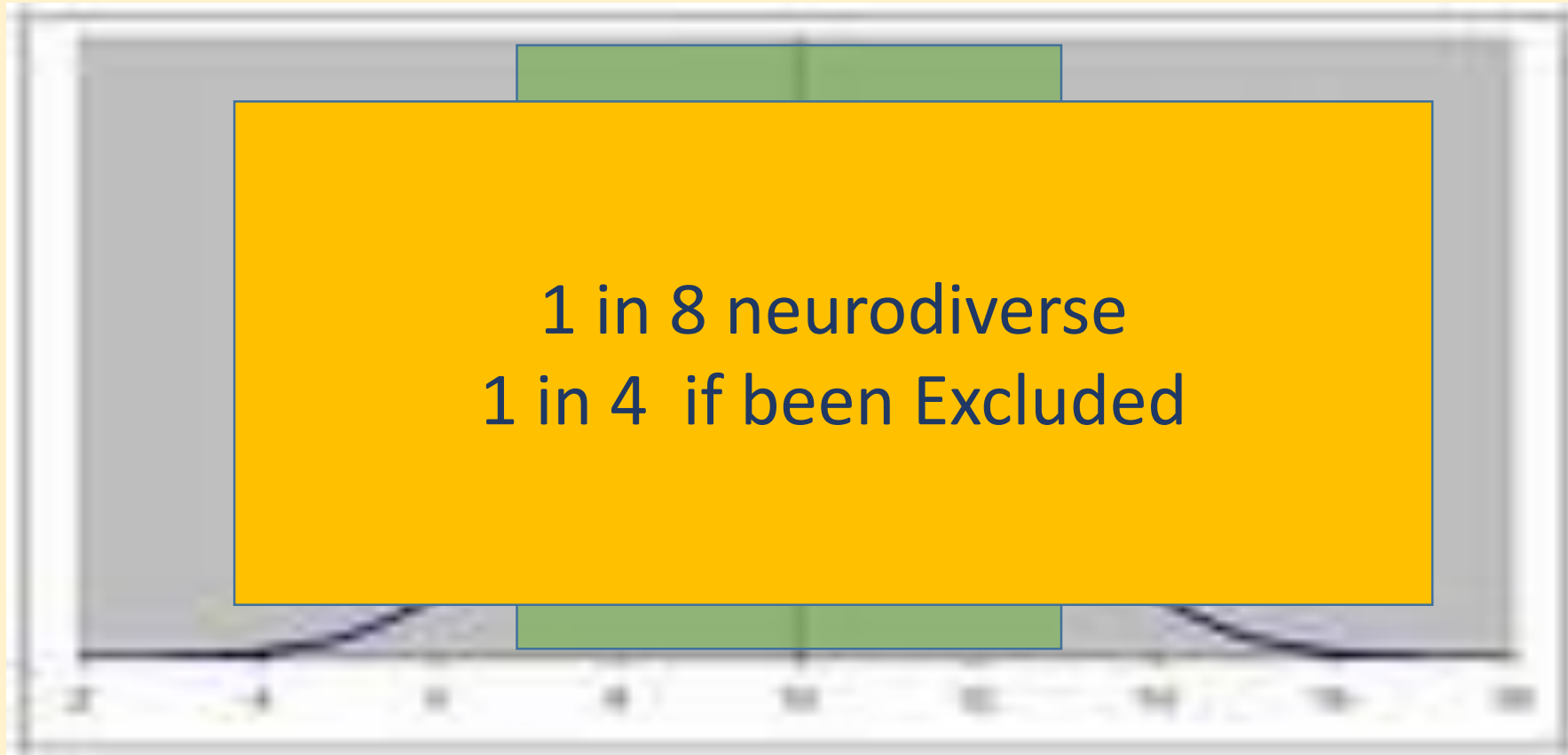


Creative
Sporty
Artistic
Scientific
Caring
Analytical
Funny
Resilient
Entrepreneurial



Shame
Lonely
Unemployed
Homeless
Depressed
In prison
Excluded
Low self esteem

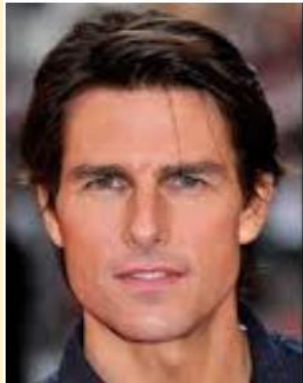
In the classroom- learners are on a continuum



**Good at sports, science, art, maths, cooking,
acting, writing...**



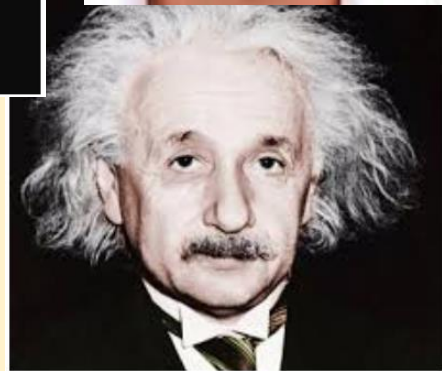
Successful Neurodiverse people

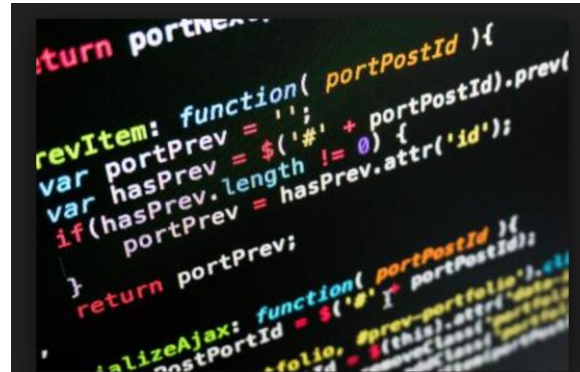
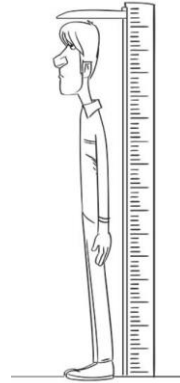


My childhood was extremely lonely. I was dyslexic and lots of kids make fun of me. That experience made me tough inside, because you learn to quietly accept ridicule.

— Tom Cruise —

AZ QUOTES





Who **here** has a spiky profile?

DCD

Learning differences

ASD

Dyspraxia

Neurodiversity

Specific Learning Difficulties

Learning difficulties

DLD

Asperger's

NVLD

SLI

Dyslexia

Dyscalculia

ALN

Developmental disorders

SCLN

Learning Disabilities

Autism

SEN

Neurodivergence

When we talk about
some
'labels'
do they conjure up
specific
thoughts/views?



Have you some
assumptions or
fixed
perceptions?



Amanda Kirby 2018

Could you have...

- Thought a student was lazy because they seemed to never start an assignment?
- Got annoyed at the student who kept getting out of their seat
- Become so frustrated with the student in the back of the class banging his pencil on his desk over and over and over again?
- Reminded a student to bring home their book at least five times and then they still forget it?
- Been in the middle of a lesson when a student blurts out some random information irrelevant to the lesson?
- A student that takes ages to answer questions and others jump in and answer for them?

What may **YOU** see?

Clumsy

Untidy

Distractible

Rude

Impulsive

Disinterested

Fidgety

Can't be bothered

Doodling

Dreamy

Lazy

Withdrawn

Not listening

Your students may behave because:

1. **Feels frustrated** because they have a different perception of the situation
2. **Lacks structure-** so don't know what is happening next
3. **Acts the role of being "bad"** as expected
4. **Doesn't know how to ask for help** - so act out
5. **Distracted by class** and so loses focus
6. **Has difficulties expressing themselves** and doesn't understand
7. **Feels overwhelmed** with tasks assigned as doesn't know where to start
8. **Tired/hungry**

**"JUST BECAUSE
I DON'T HAVE
A DIAGNOSIS
DOESN'T MEAN
I'M MAKING
IT UP."**

-- JESSICA JAMES

The
MIGHTY

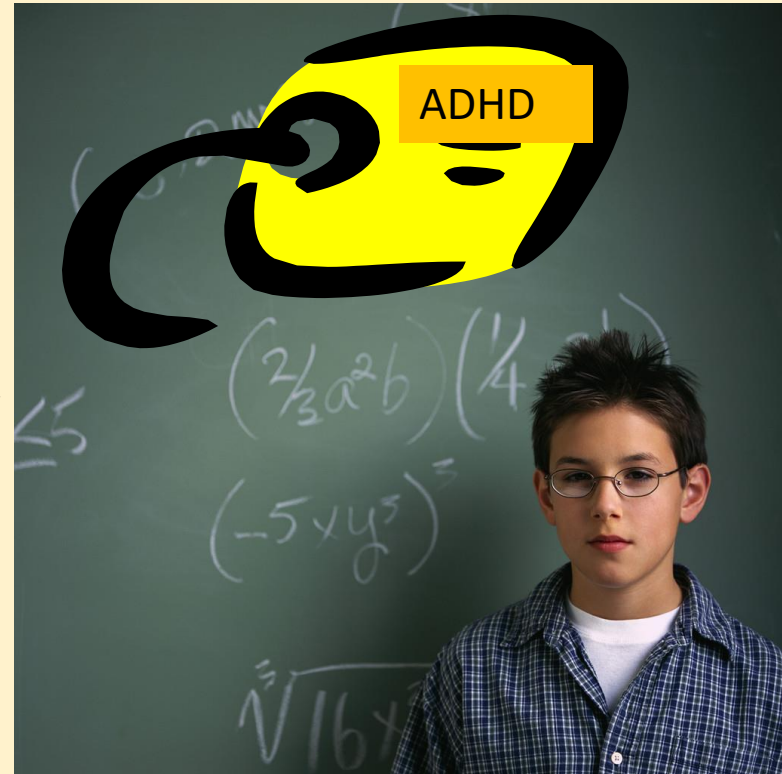
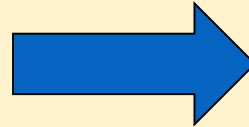
You see
overflow

when demands are greater
than you can cope with

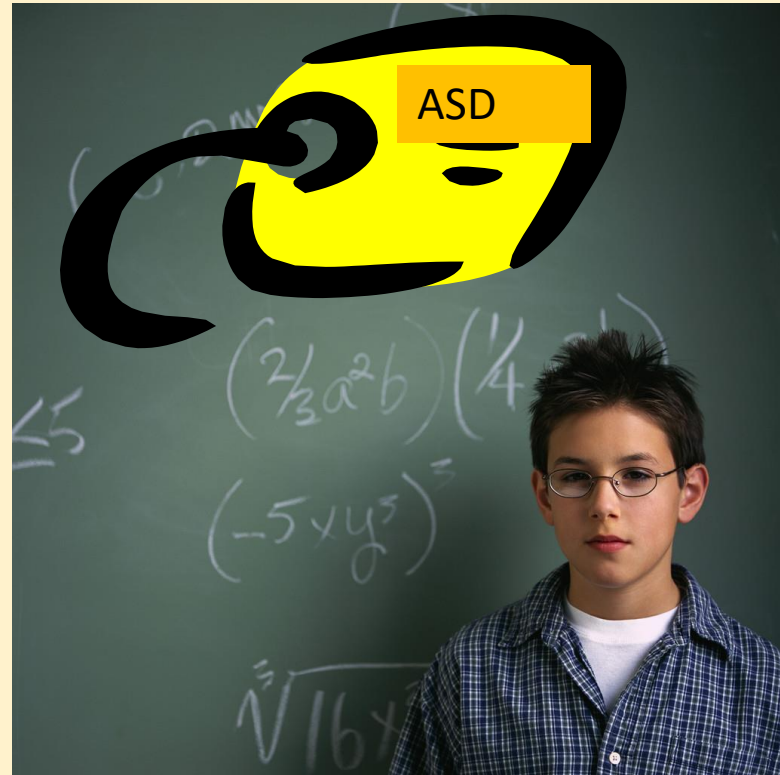
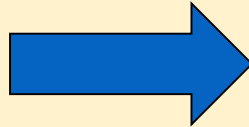




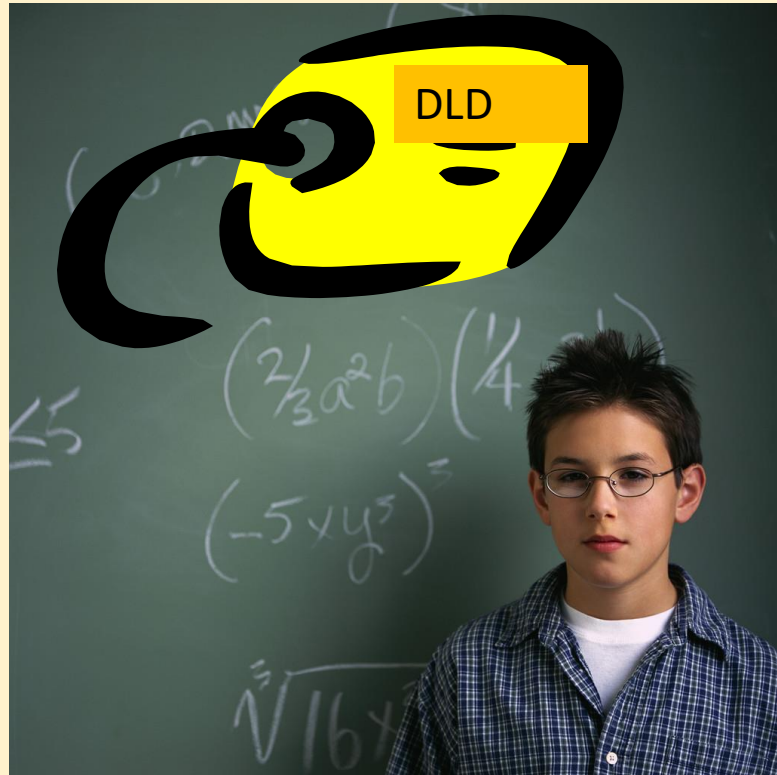
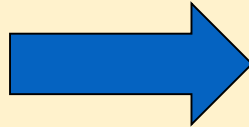
The child in your class...



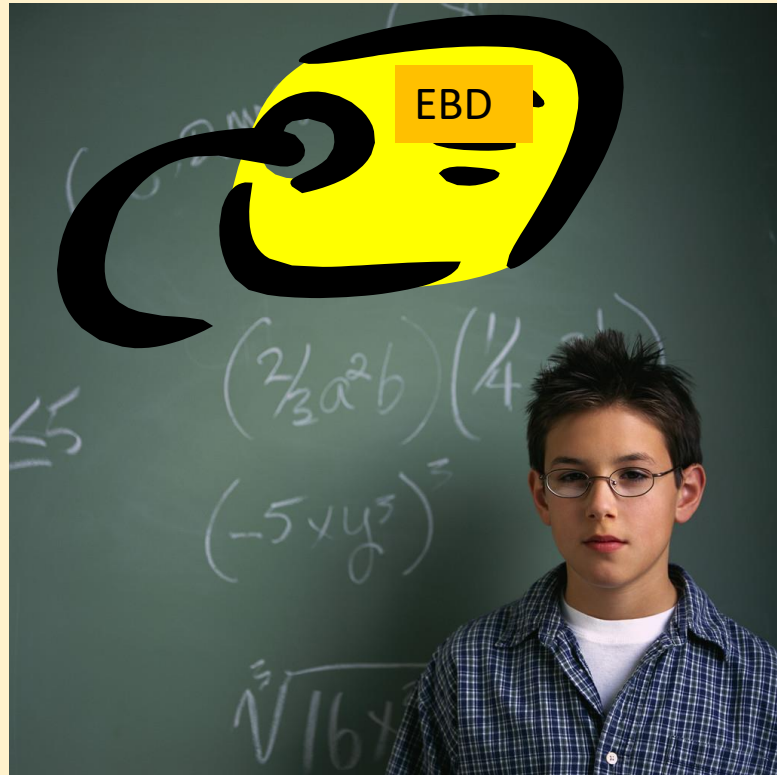
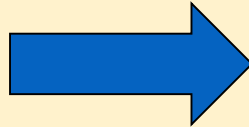
SPOT THE DIFFERENCE



SPOT THE DIFFERENCE



SPOT THE DIFFERENCE



SPOT THE DIFFERENCE

Why have **Categories**?

“systematically forms the objects of which they speak.”

Foucault (1972, p. 54)

We use categorisation to allocate resources ..

Hacking (1986) said categories can form “**looping effects**” where the categories available for classifying people in specific manners will be used as resources for understanding what we encounter.

Labels people have may be dependent on the door(s) they go or have gone through
- now OR in the past



Availability

Autism diagnoses 'could be reduced under NHS plan'

By Jane Dreaper
Health correspondent, BBC News

🕒 27 May 2017 | Health

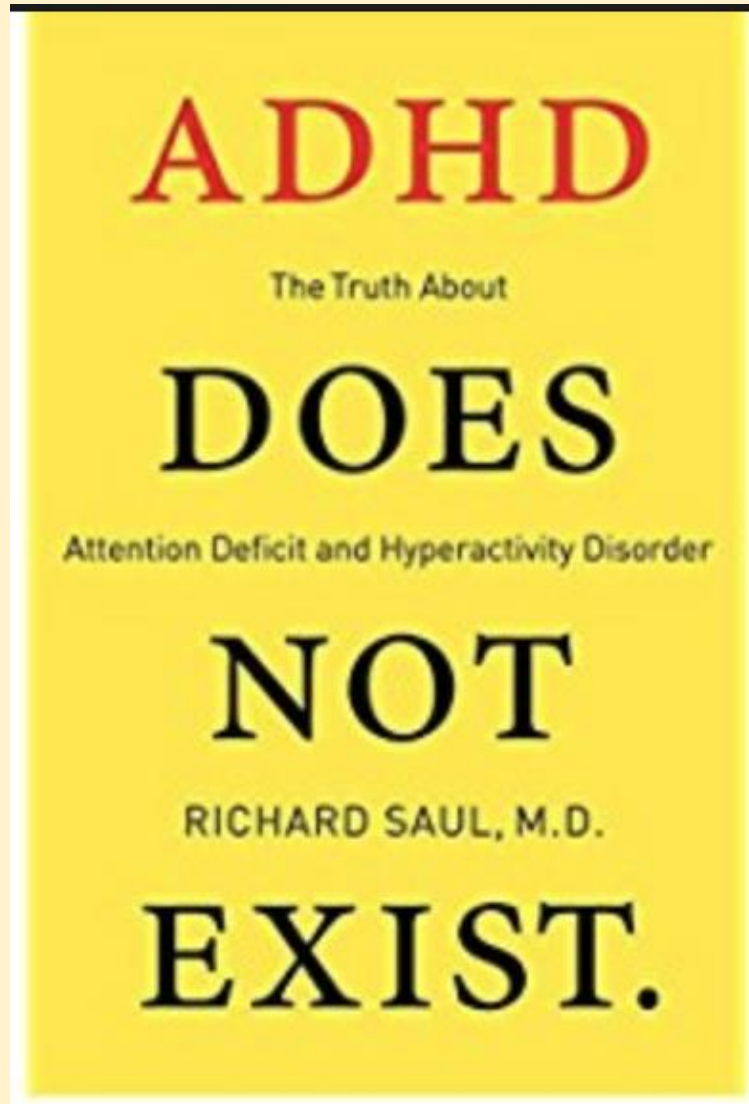


Share



Proposals to reduce the number of children being diagnosed with autism are being considered by NHS commissioners in south-west London.

Societies views



The great ADHD myth

By JENNY HOPE
Last updated at 22:34 09 March 2007

The psychiatrist who identified attention deficit disorder - the condition blamed for the bad behaviour of hundreds of thousands of children - has admitted that many may not really be ill.

MailOnline

UK children with ADHD 1
years for diagnosis, say e

Postcode lottery chaos and misconceptions of
condition lead to delayed treatment, harming chances of
education and future prospects

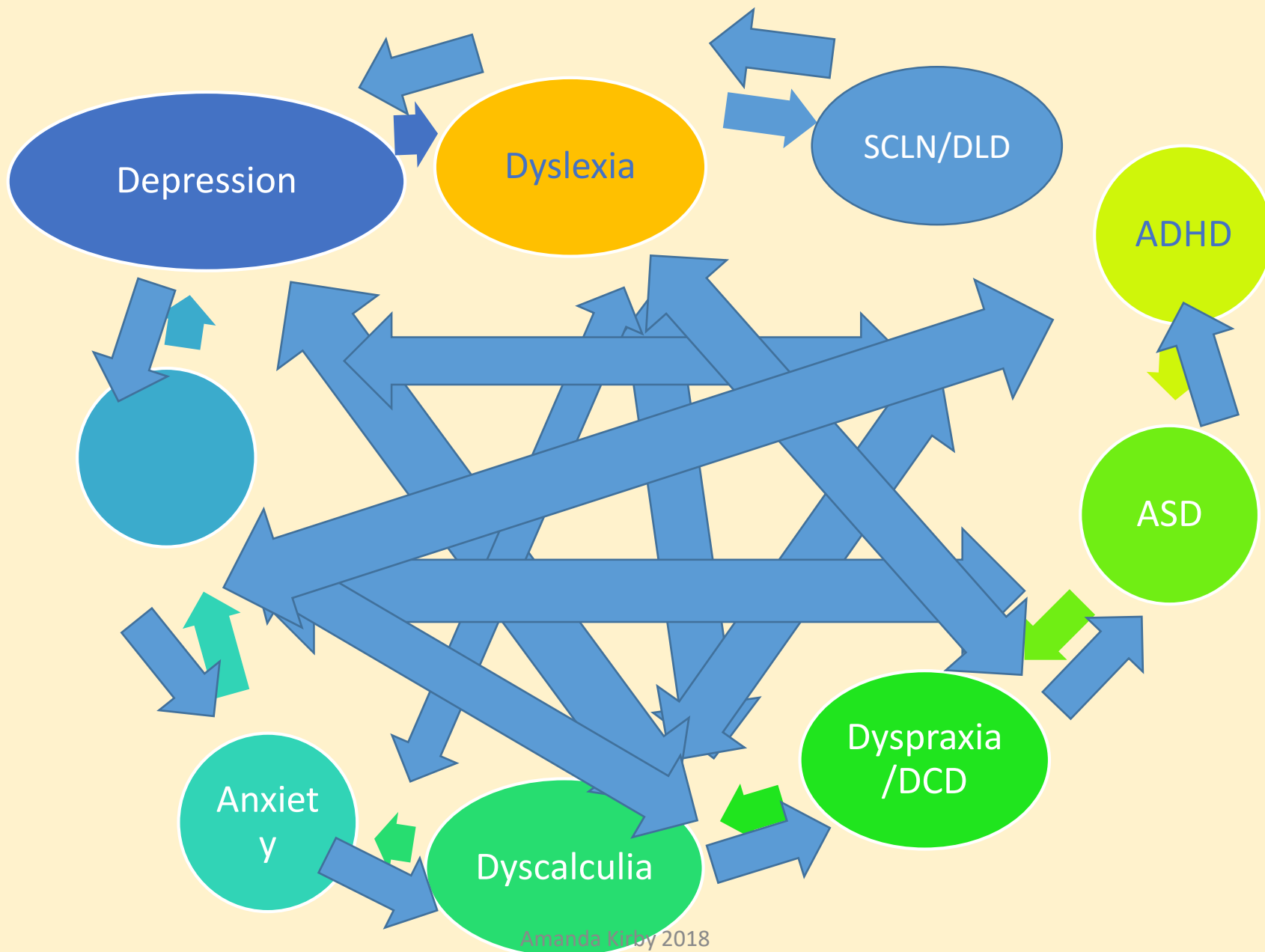
● 'When I started taking ADHD medication it was as if someone
flicked a switch'



‘Better’ labels or **‘worse’** labels

50 Famously Successful People Who Are Dyslexic

Brains are not in these neat boxes!



Dyslexia +

+ **ADHD+ DCD+ ASD**

Extensive evidence of overlap between all four disorders (Kaplan et al 1998)

+ **SCLI** on a continuum with greater risk of later dyslexia difficulties in adulthood (Pennington and Bishop , 2009)

+ **ASD** (Nation et al, 2006;Griffiths, 2007)

+ **ADHD** in about *35% -40%* of cases showed a shared genetic basis (Willcutt, Pennington, Olson et al (2007)

+ **Dyscalculia**

+ **DCD** (Ramus et al, 2003)

Motor/DCD/Dyspraxia +

+ **Maths** (Luo, Jose, Huntsinger, & Pigott, 2007; Pagani, Fitzpatrick, Archambault, & Janosz, 2010; Pieters, Desoete, Roeyers, Vanderswalmen, & Van Waelvelde, 2012)

+ **Dyslexia/Reading - 40%** (Cheng, Chen, Tsai, Chen, & Cherng, 2009; Fletcher-Flinn, Elmes, & Strugnell, 1997; Lingam et al., 2010, Ramus et al, 2003)

+ **ADHD - in 25-40%** (Kirby and Salmon, 2009; Rasmussen and Gillberg, 2000)

+ **ASD -70-80% of those with ASD traits showing motor deficits**
(Miller et al, Kopp et al, 2010)

+ **Language** (Hill, 2001)

ADHD +

ADHD + ASD from 14 - 78%

(Amr et al., 2012 and Gjevik et al., 2011 Holtmann et al., 2007, Lee and Ousley, 2006, Leyfer et al., 2006, Reiersen et al., 2007, Ruggieri, 2006, Simonoff et al., 2008, Sinzig et al., 2009 and Yoshida and Uchiyama, 2004, Lecavalier, 2006, Fombonne et al., 2001)

ADD + Dyslexia (Loo et al., 2004; Gayan et al., 2005; Trzesniewski et al., 2006)

ADHD + DCD 30-40% (Salmon and Kirby, 2006)

ADHD + Dyslexia + Dyscalculia (Maths) 30%

Specific problems in spelling, reading and mathematics, unaccounted for by low intelligence

(Szatmari *et al*, 1989).

		Proportion with secondary diagnosis of (%)					
		ASD	ADHD	DCD	DLD	Dyscalculia	Dyslexia
Primary diagnosis	ASD		3-78	25-53	21		14
	ADHD	6		18-53		7-18	18-45
	DCD/ Dyspraxia	6	19-53		25		
	DLD	4-8	26	30-71	25	62	48-87
	Dyscalculia		39	25			26-48
	Dyslexia		18-50	15-25		39-48	

Patterns are Interactional **AND** Cumulative

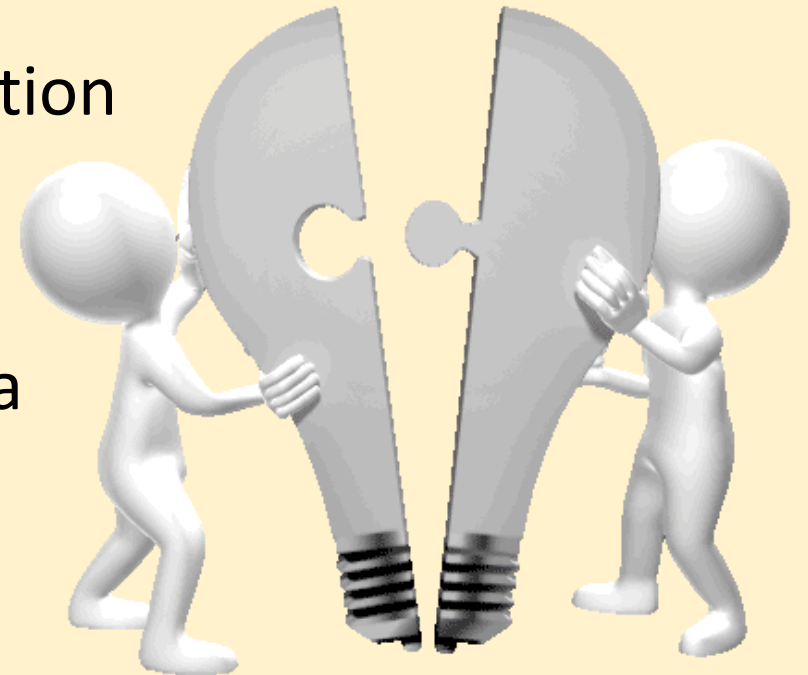
Adults with **ADHD** have been found to perform poorly in spelling, mathematics, and comprehension tests.

(Barkley et al., 2008)

Inattentiveness might interfere with reading acquisition
.....causing problems with reading comprehension

(Rasmussen et al., 2001)

SLI on a continuum with greater risk of later dyslexia
difficulties in adulthood (Pennington and Bishop , 2009)



Neurodevelopmental disorder	Other commonly co-occurring condition(s)	
	Mental	Physical
ASD	Anxiety disorders, eating disorders, gender dysphoria, mood disorders, OCD, personality disorders, schizophrenia, substance use disorders, Tourette's syndrome, tic disorders. ¹	Allergies, ear infections, epilepsy or seizures, gastrointestinal disorders, hearing impairment, immune disorders, intellectual disability, metabolic disorders, neurotransmitter disorders, overweight and obesity, sleep disorders. ²
ADHD	Anxiety disorders, gender dysphoria, mood disorders, OCD, personality disorders, schizophrenia, substance use disorders, Tourette's syndrome, tic disorders. ³	Allergies, asthma, epilepsy or seizures, gastrointestinal disorders, headaches or migraine, hearing impairment, overweight and obesity, vision impairment, sleep disorders ⁴
DCD	Anxiety disorders, mood disorders, personality disorders, substance use disorders, tic disorders. ⁵	Epilepsy or seizures, joint hypermobility syndrome, overweight and obesity, sleep disorders ⁶
DLD	Anxiety disorders, mood disorders, OCD, personality disorders, schizophrenia. ⁷	Epilepsy or seizures. ⁸
Dyscalculia	Mood disorders, schizophrenia. ⁹	Epilepsy or seizures. ¹⁰
Dyslexia	Anxiety disorders, mood disorders, schizophrenia. ¹¹	Epilepsy or seizures. ¹²

Heterogeneity is the rule

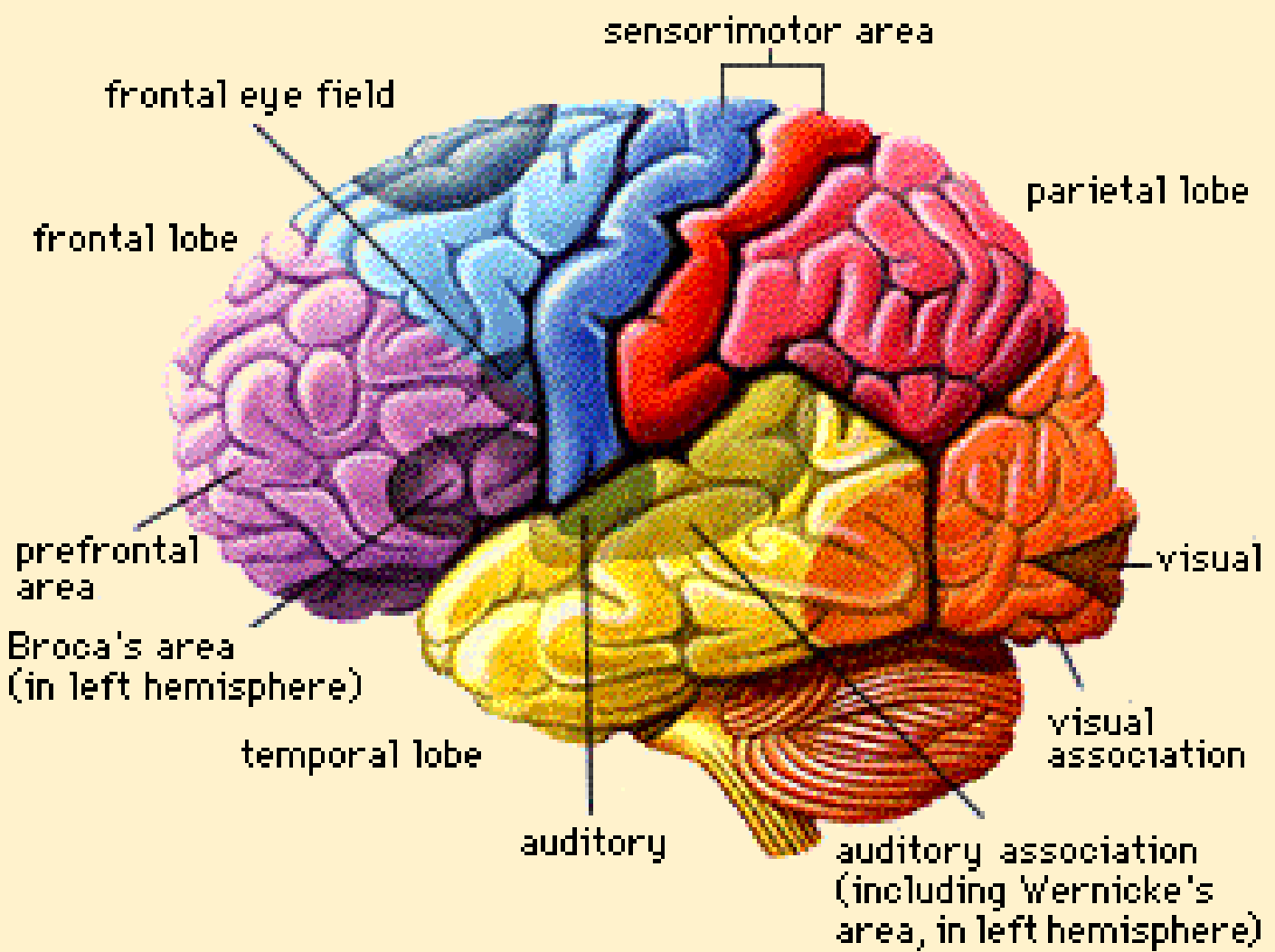
Dimensional
NOT
categorical



**But more like the
M25 !**



Brains don't function in compartments



A lack of
'zones of rarity'

(cf. Sneath, 1957)

Or... not much space between the boxes

Annual Research Review: Categories versus dimensions in the classification and conceptualisation of child and adolescent mental disorders: a review of recent research

David

¹Division of Medical Sciences
of Impulse and Attention

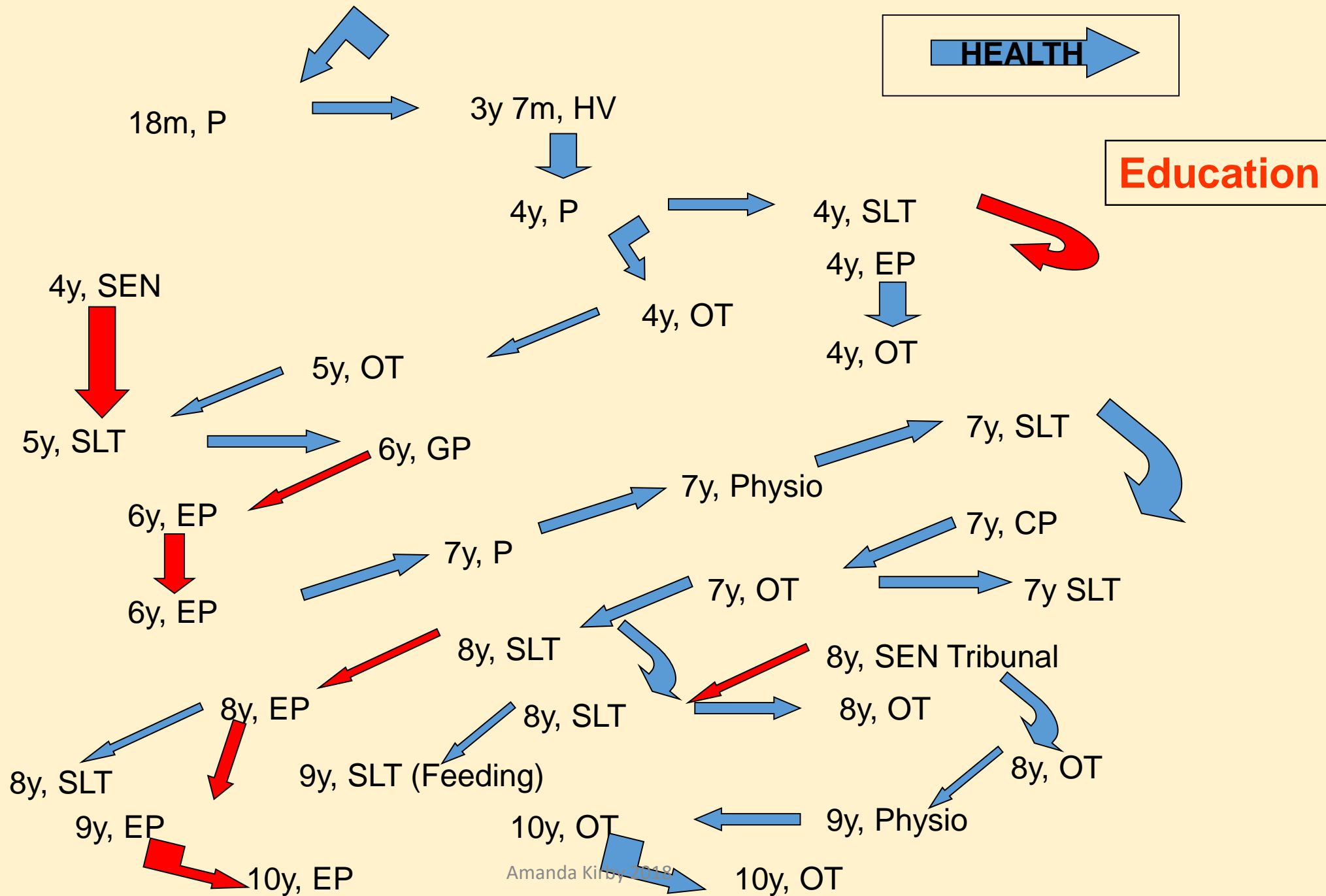
Clinical and Experimental

“The strict application of categorical diagnostic rules can also result in individuals with significant symptoms and impairments, but who fall just short of the diagnostic criteria, being denied support and treatment.”

Are services boxed?



John



Some learners are:

- **Missed**
- **Misidentified**
- **Misdiagnosed**



Why is this?

- **Awareness** and training by professionals and parents
- **Time pressures**
- **SES**
- **Gender**
- **Access and levels of services** e.g. for one condition or another
- **Attitude** e.g. ADHD **v** better to have Dyslexia = 'gifted'

Teachers well placed to identify kids with neurodiversity

- See every day
- Can make comparisons

“all teachers are recognised as being teachers of children with special educational needs (SEN)”

(Broomhead, 2013)

Rottgers et al, (2014) discovered that during ITT, students are likely to be provided with a 'one off' lecture in relation to ASD.

Insufficient to create belief and confidence that they will be able to support students with ASD in their classrooms, once qualified.

(Dillenburger et al, 2016)

Teachers in England and Wales and asked whether dyslexia was sufficiently covered during their Initial Teacher training (ITT) course. **72%** felt that it was "not covered well at all". *(Knight,2018)*

Awareness by professionals and parents

In the United Kingdom, less than half of children with ADHD have used specialist health services or been clinically diagnosed

Most parents of children will have discussed their concerns with teachers

Sayal ,Goodman,Ford. Barriers to the identification of children with attention deficit/hyperactivity disorder. J Child Psychol Psychiatry 2006;47 (7) 744- 750

TWOWT
SIDESIDIS
TOT
EVERYREVE
STORYROT2

Lack of staff knowledge of
ASD/ADHD/DCD

means conversations can be missed.

Glennon, 2016

Gillespie-Lynch et al, 2015

55% of parents with dyslexic children reported that the school teacher did not notice that their child was experiencing literacy difficulties.

(Dyslexia Action, 2012)

Teacher knowledge of 'specific learning difficulties' has been linked to confidence in teaching.

(Alkahtani, 2013)

Time pressure

Time pressures and a lack of knowledge has been cited by teachers as factors which negatively influence their ability to support pupils with ADHD.

(Richardson et al, 2015)

Low Socio-Economic-Status (SES)

Children living in **low income families are less likely to have their symptoms recognised** as being a learning difficulty and are more likely to be labelled as having an **Emotional and Behavioural Disorder (EBD)**.

McCoy, Bankd & Shevlin (2012)

- Parental resources
- Locality of the school and quality of teaching
- Disconnect between home and school

Socioeconomic Disadvantage, School Attendance, and Early Cognitive Development: The Differential Effects of School Exposure .
Ready, Douglas D. *Sociology of Education*, 2010, Vol.83(4), p.271-286

Early life experiences + SES

SES links to longer term outcomes
and increased risks as children
progress

(Lee and Burkam, 2002
Downey et al, 2004)

Gender

Girls less likely to be recognised

e.g. dreamy = ADD?

Access to services

Looked After Children

5-17 years LAC in England:

14% had speech or language problems;
significant co-occurrence between S and L and ADHD in these children

Sample of all LAC aged 7-15 years (n=193) in a single Local Authority:
67% and 68% obtained lower reading and spelling scores, than predicted by their cognitive ability;
18% had literacy scores at a level that would typically warrant intervention, more than 3x the rate in the 'norm' sample.

Access to services

Excluded

In UK **1 in 5 children** with ASD are excluded from school (Dillenburger et al, 2015) =

20x the national average

Children in a **EBD school** in one English LA: 65% had ADHD; many of these had co-occurring disorders; very few had an ADHD diagnosis before entering this school

ALSPAC cohort (longitudinal cohort of live births): of those excluded by age 8 years, **19.1% had ADHD.**
22.5% had language development in bottom 10% at age 3 years.

Awareness leads to better support

Greater awareness of ADHD (along with other neurodevelopmental disorders) within teaching supports the development of classroom strategies for ADHD

(Moore et al, 2017)



Each student has a unique pattern of strengths and challenges

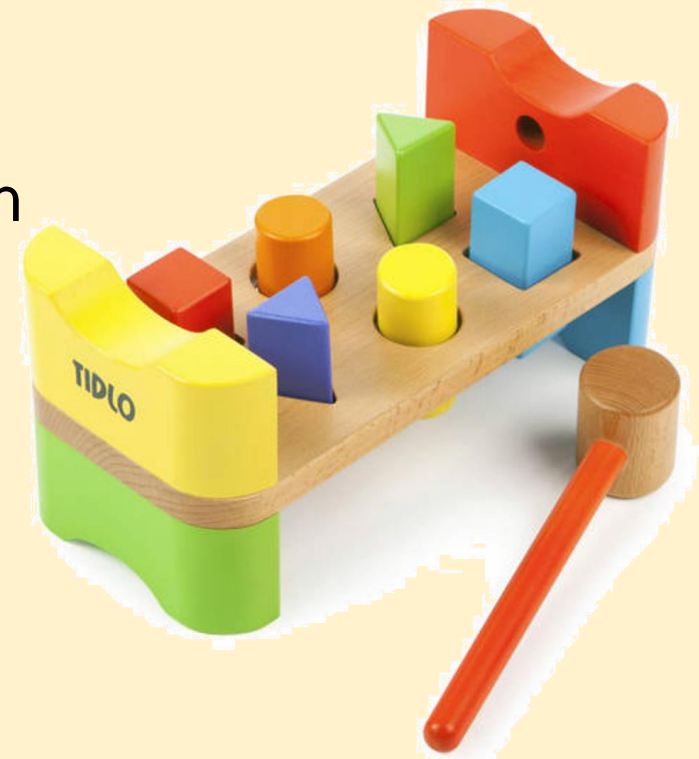
But the picture of a child changes over time

Children diagnosed with language impairments are heterogeneous and may change across the age range, and in the course of development

Known to be at increased risk of a range of social, emotional and behavioural difficulties (SEBDs) ([Yew & O'Kearney, 2013](#)), and

Strongly associated with social communication problems in children with ASD ([Hus, Bishop, Gotham, Huerta, & Lord, 2013](#)).

Several studies in UK and Sweden show that some children with language delay at 2 - 4 years go onto have a diagnosis of ASD at 9-11 years

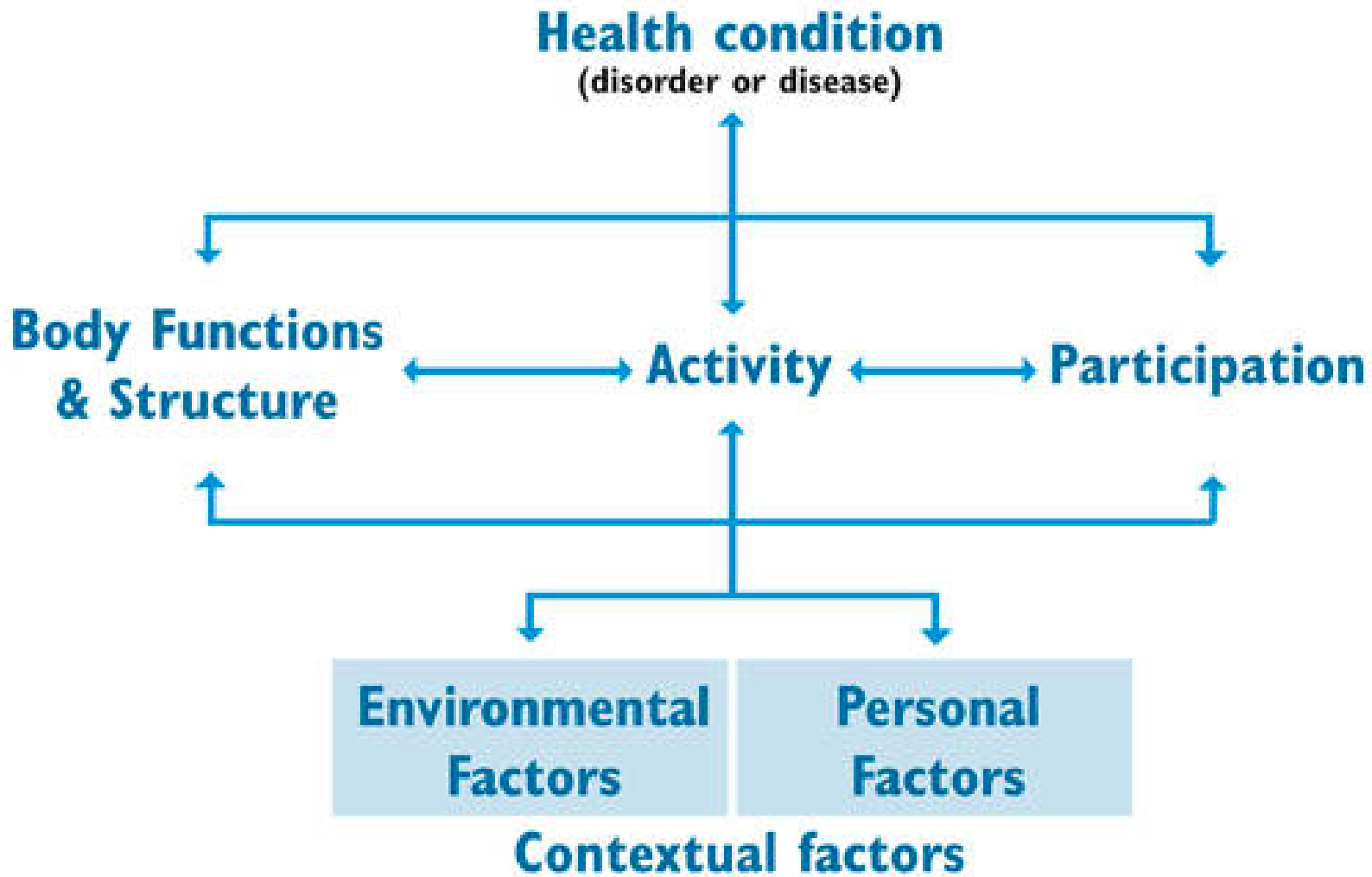




A Person Centred Approach? (PCA)

Different for different people and dependent on the needs, circumstances and preferences, skills and challenges of the individual

at a particular time and in a particular context



Starting with a framework

...More in the workshop.. What to do
practically!



**Professor Amanda
Kirby**