Autistic Sensory Perception

Dr Luke Beardon

Oak LP Outreach

Reasons for Investigation and Understanding

Hypothesis: 'It is likely that many individuals have differences in sensory integration'

- child has difficulties specific to autism – leads to:
  - ✓ Poor concept of self
  - ✓ Difficulties in linking cause and effect
  - ✓ Lack of awareness of 'other's reality'
  - ✓ Lack of effective communication

- as an older individual ability to communicate appropriately increases, leading to better understanding of original difficulties

Anecdotal evidence from individuals support the hypothesis:

- definitive anecdotes give 'real' evidence
- many autobiographical accounts mention sensory difference

My safe retreat in the world was a brown armchair… I would stare into the upholstery… I became absorbed in the brown material, in its threads, in the minute holes between the threads. Then the scratch on my soul would heal a little

‘A Real Person - Life on the outside’ Gunilla Gerland

Senses – PNT vs Autism

- Ethos – difference in perception rather than an inherent difficulty
- Problems can arise – environmental change tends to be preferable to attempting to change the individual
- Reasonable adjustments are crucial

Senses – are they real?

- There is a difference between reality and perception
- What we think we 'see' is not always interpreted accurately

Primary Senses and Sensory Systems

1. Touch
2. Auditory
3. Olfactory
4. Taste
5. Visual

1. Vestibular
2. Proprioception
3. Interoception

Sensory Systems

- Vestibular
  - ✓collection of structures within inner ear
  - ✓detects movement
  - ✓sensation of movement
  - ✓coordinates movement of eyes, head, body
  - ✓coordinates two sides of the body
  - ✓helps with balance

Vestibular Dysfunction

- Hypersensitive to vestibular stimulation:
  - ✓ Fear 'ordinary' movement activities, e.g. slides, ramps)
- Hyposensitive to vestibular stimulation:
  - ✓ Enjoys intense stimulation, e.g. spinning, jumping, rocking

Vestibular Dysfunction

- Activities which might influence vestibular control:
  - ✓ swinging
  - ✓ rocking
  - ✓ rolling / unrolling
  - ✓ roundabouts
  - ✓ trampoline

Allochiria

- ✓Also known as Allesthesia
- ✓Neurological disorder
- ✓Stimuli presented to one side are responded to as if presented to the other
- ✓Somatosensory – physical
- ✓Auditory
- ✓Visual

Sensory Systems

- Proprioceptive:
  - ✓ presents feedback from muscles and joints
  - ✓ position of body parts in relation to self and space
  - ✓ provides information to joints to assist in application of appropriate pressure
  - ✓ plans movement efficiently

Proprioceptive Dysfunction

- ✓clumsiness
- ✓tendency to fall
- ✓lack of awareness of body space
- ✓odd body posture
- ✓difficulty with fine motor co-ordination

Sensory Systems

- Interoception:
  - ✓Presents information from internal signals
  - ✓Heartbeat
  - ✓Respiration
  - ✓Satiety
  - ✓Emotional regulation – alexithymia

Sensory Agnosia

'Meaning blind' – e.g.:

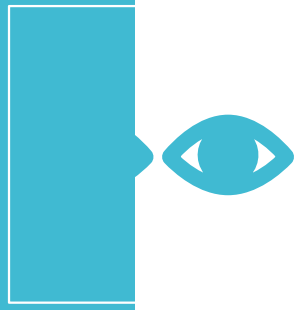
- seeing the picture without interpreting sense
- hearing the words but lack of meaning
- smelling something with no attached understanding

Topographical Agnosia

Problems with finding ways around familiar areas

Inability / difficulty with recognising landmarks

Synaethesia



Two-sensory synaethesia:

'The stimulation of one modality triggers perception in another with no direct stimulation of the latter'

Two-sensory Synaethesia

- Chromaesthesia: sound triggers colour
- Coloured-olfaction: smell triggers colour
- Coloured-gustation: taste triggers colour
- Tactile-gustation: taste triggers shapes
- Audiomotor: sound triggers body position

Synaethesia

Multiple sensory synaesthesia:

'The stimulation of one modality triggers another, and vice versa – e.g. sees colours when hearing sounds, and then hears sounds when seeing colours'

Multiple Sensory Synaethesia

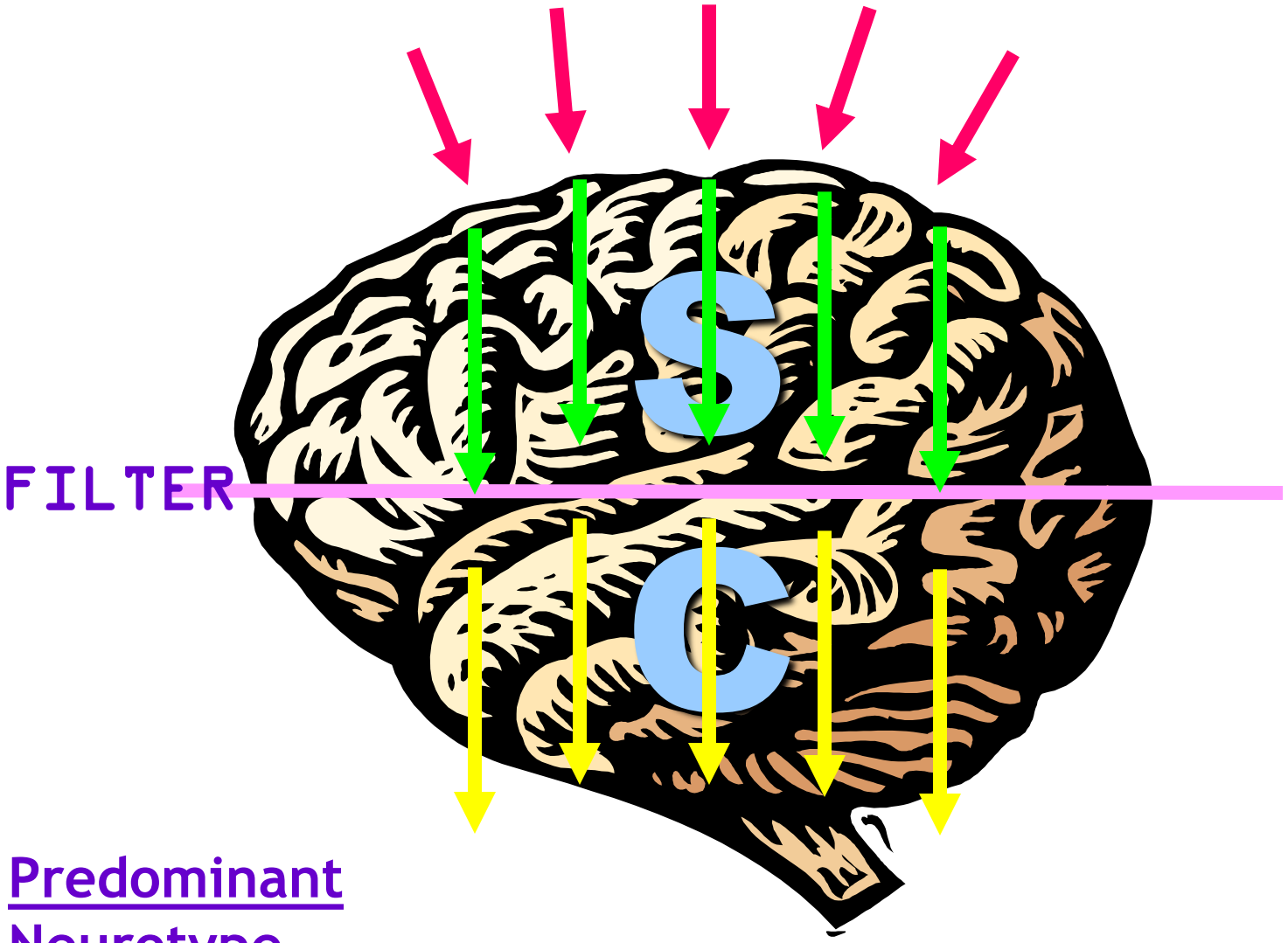
Examples:

- ✓Coloured-numbers: numbers experienced as colours
- ✓Coloured-letters: letters experienced as colours
- ✓Coloured-graphemes: words experienced as colours
- ✓Shaped-numbers: numbers experienced as shapes

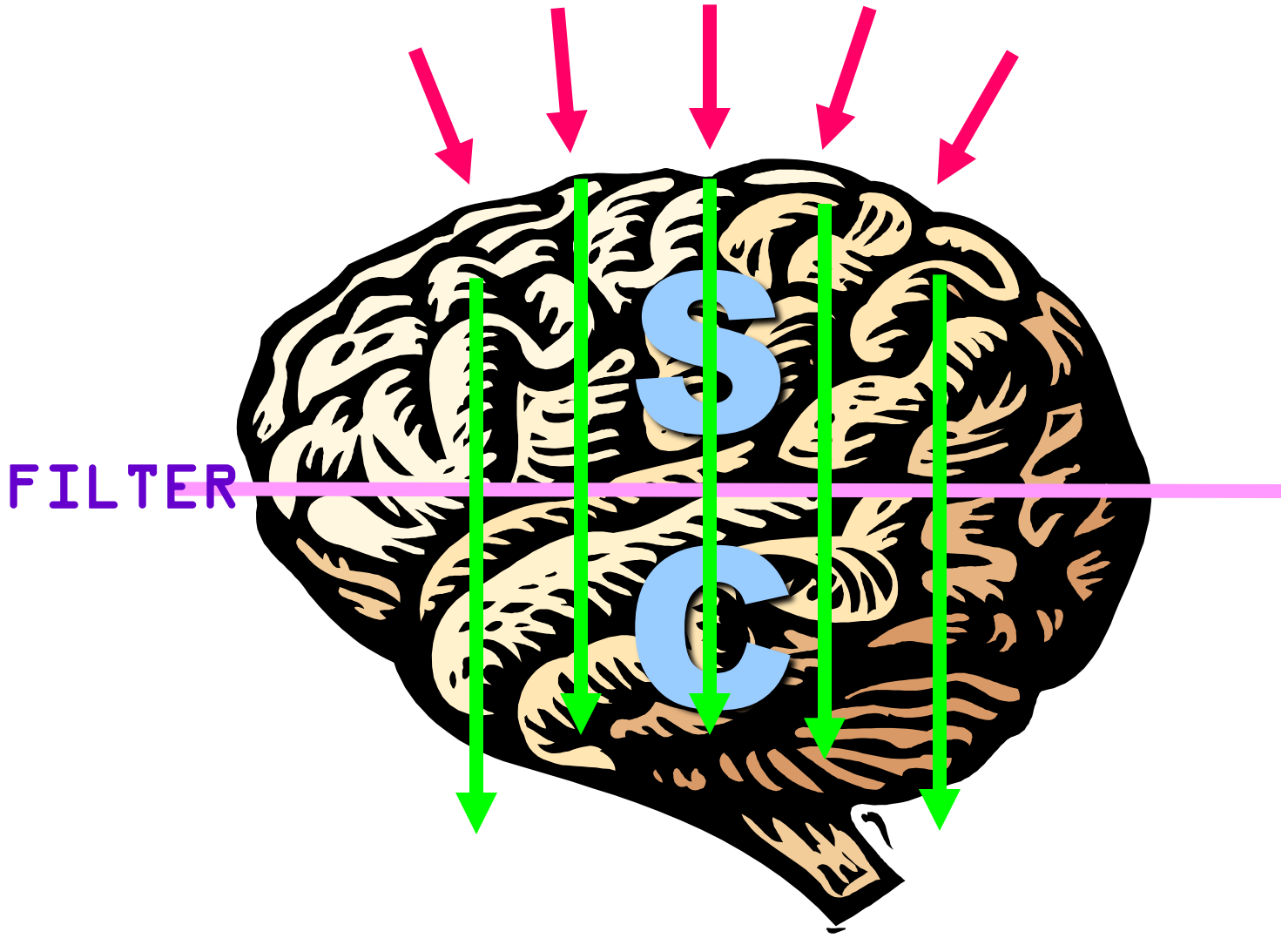
The Filter Process

- Reality is reality – therefore is the 'same' irrespective of the individual
- Perceptions clearly differ from one person to the next

Hypothesis: the 'filter process' distorts sensory processing which leads to different perceptual experiences



Predominant
Neurotype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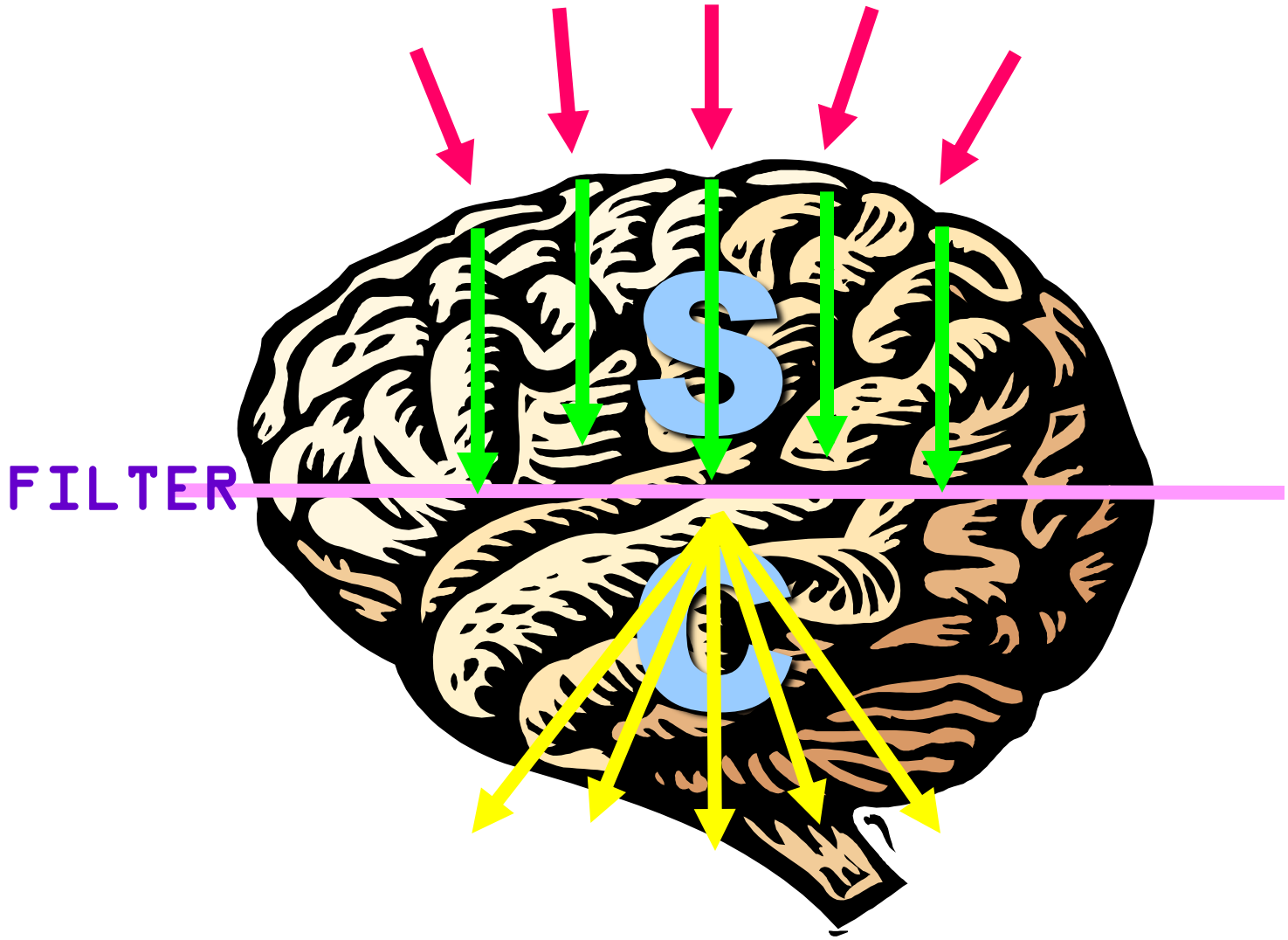
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Outcomes of Filtering Process

- Hypersensitivity – over sensitive to sensory stimulation
- Hyposensitivity – under sensitive to sensory stimulation

Perceptual Inconsistency

- Dependent on:
- Time
- Environment
- Physical state
- Emotional state
- Stress levels

Fragmented Perception

The individual may receive stimulation which affects one aspect of their physicality – for example an item of clothing may 'hurt' but only on one place

TOUCH - Clothing

- ✓material
- ✓sleeves
- ✓tight / loose clothing
- ✓belts
- ✓buttons
- ✓shoes

- ✓colour
- ✓hats
- ✓trousers / shorts
- ✓lack of ability to dress appropriate to the weather

TOUCH - People

- ✓hugs
- ✓soft touches vs firm
- ✓skin on skin contact
- ✓brushing past people
- ✓proximity

TOUCH - food

- ✓texture
- ✓dry / brittle
- ✓shape

TOUCH - objects

- ✓texture of surfaces
- ✓shape of object
- ✓feeling the object with other parts of the body
- ✓curvature

TOUCH - pain

- ✓discrepancies between perceptions compared to NT
- ✓extreme hypersensitivity
- ✓hair
- ✓nails
- ✓teeth

AUDITORY - Hypercausis

Intense hypersensitivity to a specific noise, e.g.:

- ✓dogs barking
- ✓paper tearing
- ✓vacuum cleaners

AUDITORY – Super sensitivity

Examples:

- ✓karaoke
- ✓paper
- ✓hand drier
- ✓planes
- ✓sneezing

AUDITORY – Separation of Sounds

Inability to separate sounds:

- ✓background noise
- ✓extraneous auditory information
- ✓voices

AUDITORY – The Feeling of Words and Misphonia

Words 'felt' as they are being spoken:

- ✓Positive
- ✓Negative
- ✓Associated problems

Misphonia – certain sounds trigger psychological distress, e.g. chewing

OLFACTORY

- smell to recognise
- Hyperosmia - extreme hypersensitivity
- overpowering smells

TASTE

- ✓sensitivity of using taste to recognise
- ✓texture
- ✓colour
- ✓can lead to restricted diet / appearance of eating disorder

VISUAL - Monotropic

Seeing in (detailed) isolation, fragmentation, distortion, e.g.

- ✓toy cars
- ✓Spiderman
- ✓hair
- ✓dust

Contact

Dr Luke Beardon

The Autism Centre

Sheffield Hallam University

L.Beardon@shu.ac.uk