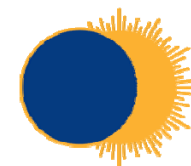


What can we learn from behaviour after brain injury?

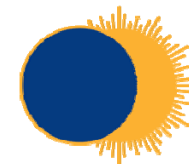
Dr Sarah Crawford, Consultant Clinical Neuropsychologist



Royal Hospital for
Neuro-disability

Thinking about the title of this open lecture

- What kind of psychologist?
- Is it just psychologists?
- Our patients
- ‘Learning’ and shaping behaviour – relevant psychological theories and methods



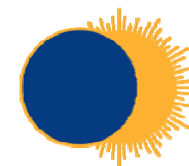
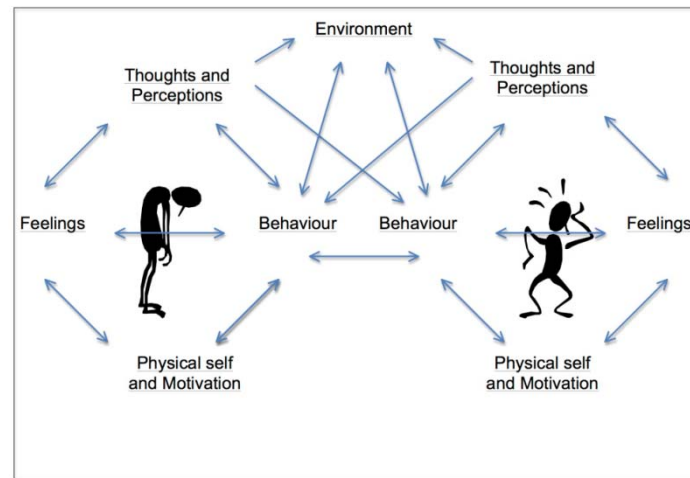
Psychology and psychological principles

Clinical psychologists

Applying evidence-based psychological principles in a clinical context

Looking at behaviour is not restricted to psychology

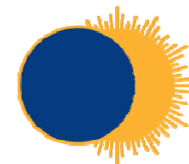
However, it may be beneficial to have a psychological formulation for complex challenges



Royal Hospital for
Neuro-disability

Our patients

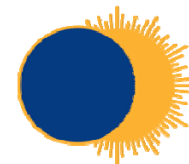
- Complex-neuro-disability
- Disorders of consciousness
- Severe cognitive and communication impairments - with or without some verbal communication
- Challenging behaviour in the context of ABI or progressive neurological conditions



Royal Hospital for
Neuro-disability

Why do we see changes in behaviour following brain injury?

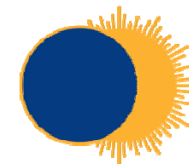
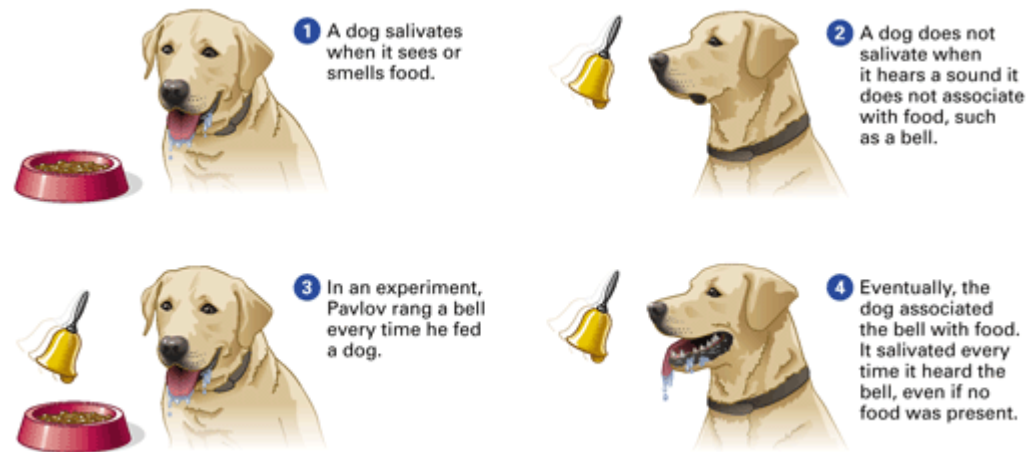
- Cognitive impairments
- Psychological factors, e.g. anxiety
- The environment



Shaping behaviour: Key psychological principles 1

Classical conditioning

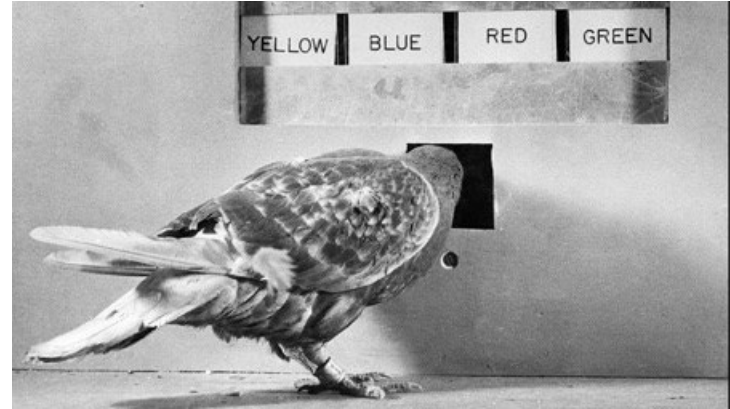
Relevant to automatic/reflexive behaviours



Shaping behaviour: Key psychological principles 2

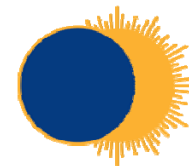
Operant conditioning

Intentional behaviour



Still often thinking about fairly simple behaviours.

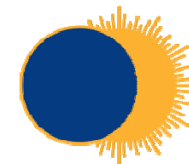
Often related to basic drives



Royal Hospital for
Neuro-disability

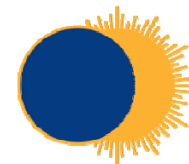
Operant conditioning

	ADD	SUBTRACT
increase behaviour	R+ positive reinforcement	R- negative reinforcement
decrease behaviour	P+ positive punishment	P- negative punishment



Important factors in positive reinforcement

- The reward must be meaningful for the person
- The reward must be stronger than the reward associated with any behaviour that you are trying to reduce
- It must be presented as soon as possible



Shaping behaviour: Key psychological principles 3

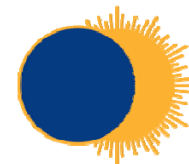
Cognitively mediated learning

In relation to more complex behaviours.

Making use of our cognitive skills

e.g. Memory and problem-solving

- When I have encountered a situation with similarities to this one?
- What did I do then?
- Is that likely to work here?
- What else could I do that might be better?



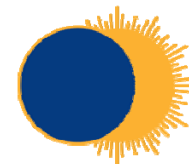
Royal Hospital for
Neuro-disability

Is it just common sense?

No...

Assumptions about behaviour

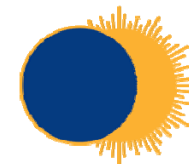
- Cognitive: goal-directed
- Personality
- It means what it's always meant
- The same behaviour means the same thing for different patients



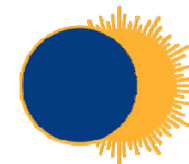
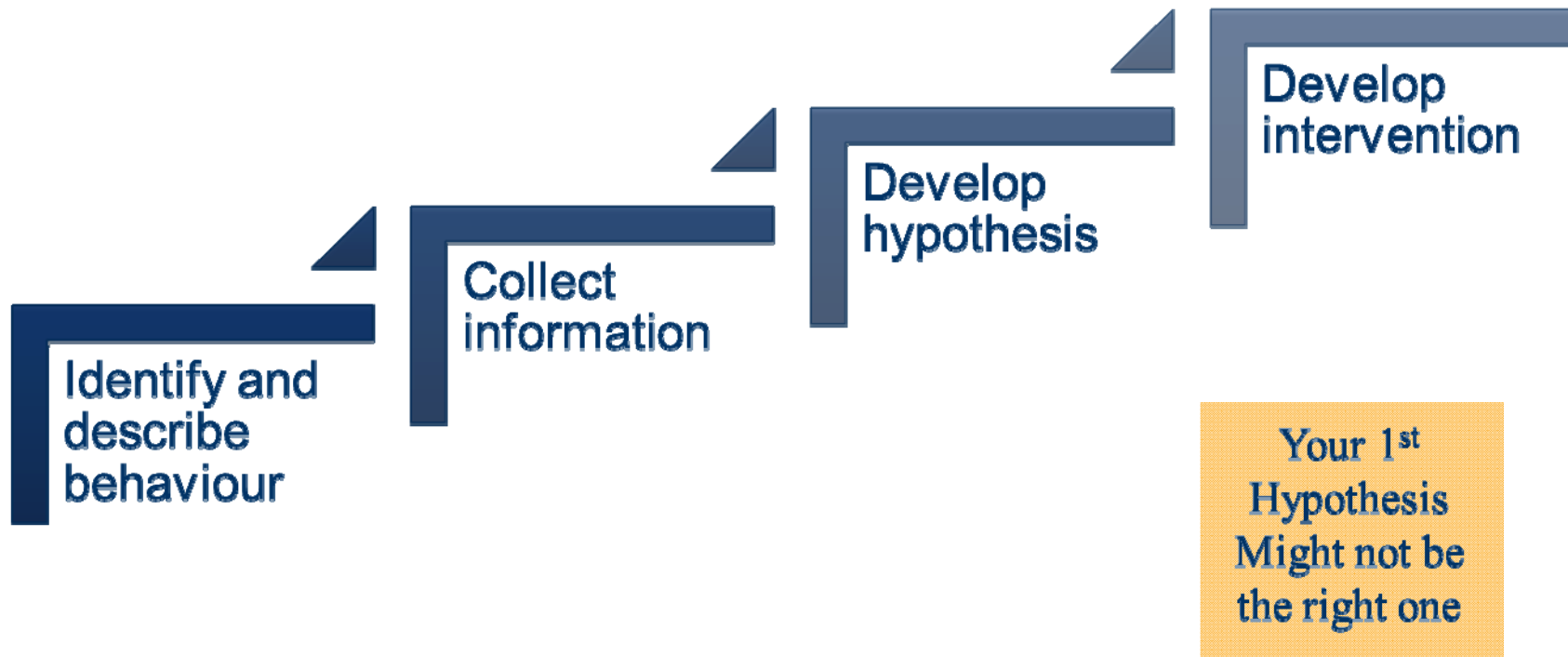
Royal Hospital for
Neuro-disability

How do we assess behaviour?

- Direct assessments with patients who can communicate
- Discussions with staff and families
- Behavioural observations (Toolkit examples)
- Functional analysis
- ABCs
- Hypothesis-testing



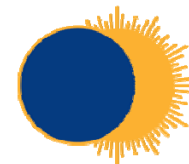
Functional Analysis



DOC: Reflexive, spontaneous and purposeful behaviours

Disorders of consciousness

- How do we look at behaviour?
- Observations
- Standardised tools
- What questions are we asking and why?
- Is it ever objective?
- How do we weigh up what we see?
- Distinguishing between spontaneous and purposeful/goal-driven

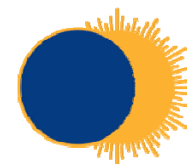


Case example: Spontaneous versus goal-driven behaviours

Behaviour: Smearing faeces, masturbating in front of other patients, grabbing at patients, pulling at PEG tube

- Diagnosis being assessed
- The role of the psychologist
- Assess cognition and communication. Unable to demonstrate learning. No consistent communication. Existing in the moment.
- Behaviour is spontaneous but no indication of it being goal-driven
- We can manage the environment but can't teach skills.

Put safer objects in reach, monitor who is with him, manage risks, safe discharge environment



Royal Hospital for
Neuro-disability

DOC versus depression

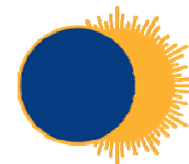
Passive behaviours

“He looks sad – he must be depressed”

“If I was in hospital then I would be depressed”

Observations

Intervention: Possible ABA medication trial



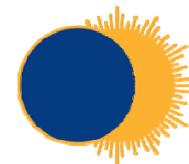
Royal Hospital for
Neuro-disability

Severe brain injury

When we know there is purposeful behaviour...

Risks:

- * over-estimating cognitive functioning
- * making false assumptions



Royal Hospital for
Neuro-disability

Case example

Two-fingered gesture

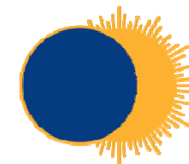
“He’s swearing at us”

“He’s being rude”

“He has no respect for us”

Observations of the patient, discussions with wider team

What’s really going on?



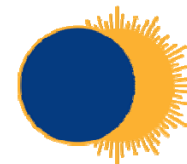
Royal Hospital for
Neuro-disability



- The physios are laughing...

POSITIVE REINFORCEMENT!

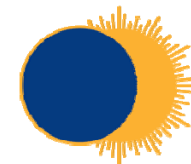
- Why is he doing it to the nurses?
 - Cognitive impairment
 - PLUS**
 - Intermittent reinforcement



Royal Hospital for
Neuro-disability

Intervention

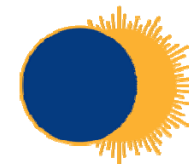
- Education
- Stop the laughing – BUT replace the reward with something else



Royal Hospital for
Neuro-disability

Operant conditioning

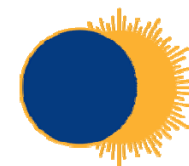
	ADD	SUBTRACT
increase behaviour	R+ positive reinforcement	R- negative reinforcement
decrease behaviour	P+ positive punishment	P- negative punishment



Passive behaviours in severe brain injury

Common statements:

- He's not engaging with therapy
- He's withdrawn

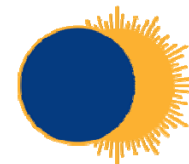


Royal Hospital for
Neuro-disability

Why not?

- Common assumptions:
 - Depressed
 - Not motivated
 - Bored

“He doesn’t want to”

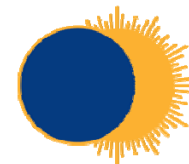


Royal Hospital for
Neuro-disability

Other possibilities

- Cognitive impairment:
 - Global
 - Attention and memory
 - Perseveration
 - Initiation

“He can’t”



Royal Hospital for
Neuro-disability

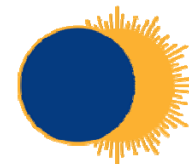
Case example

- Mr X doesn't want his food but then gets angry and shouts at staff when they take it away

Assumptions:

- “He’s fussy”
- “He doesn’t like the food”
- “He’s being difficult”
- “He can’t make his mind up”

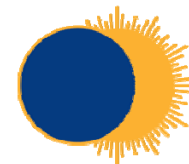
Observations, staff discussions, assessment of the patient



Royal Hospital for
Neuro-disability

What's going on?

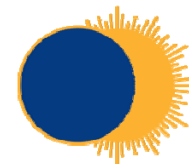
- He says he likes the food!
- Conclusion after assessment
 - If the food is put in front of him he will not eat it
 - If he is encouraged to pick up the spoon and eat, then he will sometimes do so
 - When he doesn't, if you ask if you can help him, and you put the spoon in his hand and guide it to his mouth, he will eat and carry on eating
 - Initiation – can't not won't



The risks of ignoring behaviour

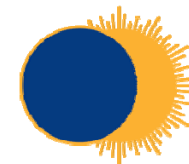
- Attaching too much weight to history or ‘communication’:
 - “He’s never liked banana flavour”
 - “He said ‘no’ so that means he doesn’t want it”

Hypothesis-testing approach – leave the assumptions behind!



Royal Hospital for
Neuro-disability

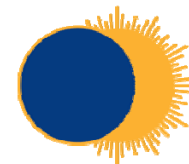
Challenges of MDT working



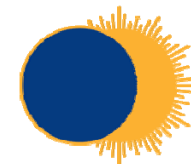
Royal Hospital for
Neuro-disability

Challenges of MDT working

- Time-consuming
- “It’s not my job”
- Changes may happen in small increments or not at all
- Assumptions are strongly held



Thank you for listening...



Royal Hospital for
Neuro-disability