

# Behavioural Experiments in Cognitive Therapy

Jon Wheatley & Sunjeev Kamboj  
CNWL & Royal Holloway University

## Session aims

- To consider the role of behavioural experiments in cognitive theory and therapy
- To give examples of different types of behavioural experiments
- To encourage you to use behavioural experiments in your clinical practice

## Conditional assumptions: recap

- Implicit understandings about self, others and the world that become 'rules for living'.
- Problematic only when too excessive, rigid or demanding.
- Inform choice of safety behaviour.
- Rules can be elicited, tested and revised in the light of new evidence.
- "Don't take my word for it. Test it out for yourself."

## Why Use Behavioural Experiments?

- A powerful means of testing assumptions.
- Can produce sudden shifts in meaning.
- Translate abstract rules into concrete experience.
- Empowering, putting the client back in control.

## Behavioural experiments: a definition

- Behavioural experiments are planned experiential activities, based on experimentation or observation, which are undertaken by patients in or between therapy sessions.
- Their purpose is to:
  - Test the validity of the patient's existing beliefs
  - Construct and/or test new, more adaptive beliefs

## The Behavioural Element in Cognitive Therapy

**Unhelpful behaviours** (e.g. withdrawal in depression)  
can be either:

**a PRODUCT of unhelpful cognitions**

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  graph LR
    C[Cognitions] --> UB[Unhelpful behaviour]
  
```

and/or

**a MAINTAINING FACTOR** (keep the cognition and emotions going)

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  graph LR
    UB[Unhelpful behaviour] --> NC[Negative cognition]
    UB --> LM((Low mood))
  
```

## The Behavioural Element in Cognitive Therapy

So we need to:

1. ASSESS how behaviours may be contributing to beliefs and feelings and/or
2. CHANGE behaviours with the purpose of changing beliefs and feelings

## Cognitive Therapy's behavioural heritage

- Principles
  - Focus on what is observable
  - Internal events are learned behaviours e.g. thought patterns
  - Emphasis on generalisation
- Methodology
  - Emphasis on problem definition, specific goals, measurement, observable change
  - Emphasis on maintenance, here-&-now focus
  - Emphasis on generalisation (homework, blueprints)

## What Cognitive Therapy adds to BT

- Advances in conceptualisation
  - e.g. anxiety disorders: meanings attached to internal events as key maintaining factors
- Making sense of problem persistence
  - e.g. safety seeking behaviours
- Increased efficiency (targeted experiments) and outcomes (effect sizes)
- Enhanced patient collaboration?
- Identify key cognitions & design BE's to test them

## Clinicians perspectives

- "For the behaviour therapist, the modification of behaviour is an end in itself; for the cognitive therapist it is a means to an end, namely, cognitive change." (Beck et al, 1979)
- These "behavioural strategies offer the most powerful means to cognitive change in cognitive therapy" (Wells, 1997)
- CBT should be a 'doing' therapy as much as a talking therapy (Waller, 2008)

## Enactive procedures

- "It is often asserted that therapeutic change is mediated cognitively, *but the most effective way to change cognition is to change behaviour*" (Teasdale, 1997, p.90)
- *Enactive procedures* - either in reality or imagination - hold the key to changing cognition (Teasdale, 1997)
  - Therefore, use BE's & imagery techniques

## BE's vs. exposure : similarities & differences

- In anxiety, BE's & exposure may look very similar (e.g. both may involve taking an agoraphobic client to a supermarket)
- BUT there are important differences:
  - Theoretical framework & goals: habituation vs. testing beliefs
  - Repeated prolonged exposure vs. targeted BE's
  - Importance of safety behaviours in BE's
  - BE's also useful in depression, LSE, etc

## Behavioural Rationale for Behavioural Methods

- Behaviour therapy emphasises acquired learning responses.
- Uses techniques to aid habituation.
- Installation of coping strategies, typified by anxiety management.

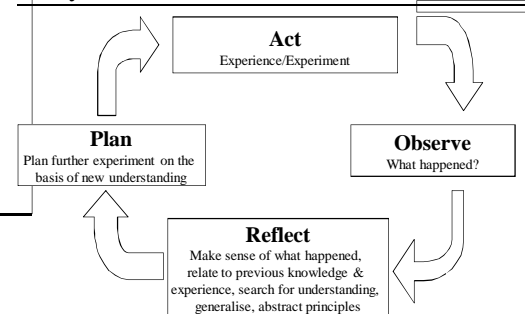
## Cognitive Rationale for Behavioural Methods

- Over-reliance on coping strategies creates dependence.
- Coping strategies are helpful but can become ritualistic.
- Behavioural methods aim to shift the interpretation, providing a theoretically integrated approach.

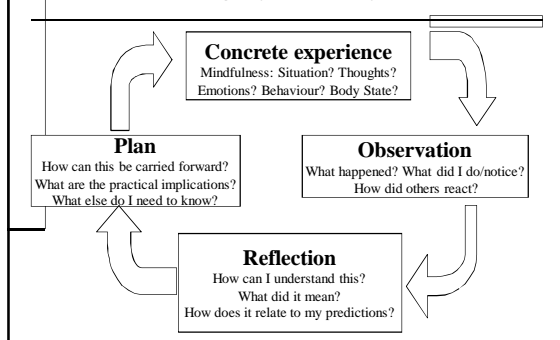
## Adult learning theory

- BE's are a particularly powerful form of learning because they incorporate all the most important elements of adult learning, especially:
  - - Experiential learning
  - - Reflection

## The Lewin/Kolb experiential learning cycle



## The learning cycle: Key Questions



## Missing links in the learning cycle

- No abstract conceptualisation
  - Interventions not linked to formulation
  - Hard to generalise to new situations/problems
- No active experimentation
  - Learning in session not carried into 'real life'
- No concrete experience
  - Learning remains theoretical (skiing by manual)
  - No direct observation/feedback (e.g. dropping SBs)
- No reflective observation
  - Experience wasted (ignored, discounted, distorted)

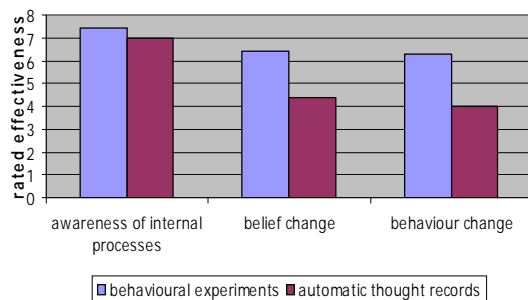
## Epstein's cognitive-experiential model

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>■ RATIONAL SYSTEM</li> <li>■ Analytical, logical</li> <li>■ Reason-oriented</li> <li>■ No direct links to emotion system</li> <li>■ Can be changed by argument</li> <li>■ Intellectual 'head level' change</li> </ul> | <ul style="list-style-type: none"> <li>■ EXPERIENTIAL SYSTEM</li> <li>■ Intuitive</li> <li>■ Automatic/narrative</li> <li>■ Direct input from emotion systems</li> <li>■ Experiencing is believing</li> <li>■ Harder to change</li> <li>■ Emotional 'heart level' change</li> </ul> |
|--|---|

## Implications of Epstein's model

- Behavioural experiments should impact on the experiential system to a greater extent than more verbally based strategies
- This will lead to changes at the 'deeper' level
  - Heart versus head
  - Emotional versus intellectual
  - 'Felt sense'

cognitive therapy trainees ratings  
(Bennett-Levy, 2003)



## Different experience of ATR's & BE's

- "Behavioural experiments give you virtually irrefutable evidence to discredit your maladaptive thoughts & beliefs. Although thought records involve producing 'evidence' against the thought, the evidence provided by the behavioural experiment is much more convincing...Everything else was great in terms of understanding, but behavioural experiments were actually the way that I made a couple of changes."
- From Bennett-Levy et al, (2003) study

## Key Principles

- Be clear about your goals.
- Be clear about the hypotheses you want to test.
- Pursue a question that interests the client, as well as you.
- Be willing to be creative.
- Be prepared to put yourself on the line...

## Targets of experiments

- Negative automatic thoughts
  - May only need 1 or 2 well designed experiments
  - Make links explicit: "How do the results of this experiment fit with your belief that..."
- Underlying assumptions
  - Numerous experiments may be needed to sharpen your formulation and/or test alternatives

## Methods Used

- Broad range, depending on the hypothesis to be investigated:
  - Activity scheduling.
  - Attitude surveys.
  - In-session experiments & role plays
  - Experiments outside the session, conducted jointly.
  - Experiments outside the session, conducted by the client alone.

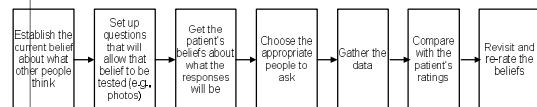
## Surveys as a data gathering experiment

- Useful to help the client:
  - Find out new information through sampling the attitudes of others.
  - Help the client consider alternative explanations of a situation.
- Can be a precursor to hypothesis testing experiments

## How to conduct surveys

- Surveys are a good alternative option for testing thoughts
- Can be done by pt or therapist (written or audio taped)
- Survey questions must be carefully constructed to provide information required to test thought
- Work these out collaboratively

## Going through the steps



- *If you have not taken all these steps, it is not likely to work...*

## BE's: What are you Interested in Discovering?

- Whether a catastrophic outcome actually occurs?
- Whether an outcome is as catastrophic as predicted?
- If and how a safety behaviour maintains distress?
- The implications of an alternative interpretation?

## Why target safety seeking behaviours? (Salkovskis 1991)

- In the short term they may help the person feel more secure (phew! I survived that time)
- BUT in the long term, they actually:
  - Maintain the problem because they prevent the person from checking accuracy of predictions (constant sense of 'near miss')
  - May unwittingly make the problem worse (e.g. deep breathing to control sense of suffocation intensifies effects of anxiety induced hyperventilation)
- SO treatment *must* involve dropping SB's otherwise change is impossible

## Panic Disorder & Agoraphobia

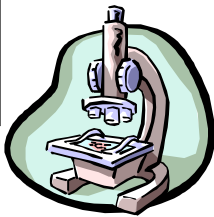
- Dropping / reversing safety behaviours, & other behavioural experiments, to disconfirm threat beliefs
  - Find doesn't happen
  - Or, if does, is not as terrible as they predicted
- *Verbal metaphors:*
  - Safety behaviours: keeping away elephants
  - Selective attention: buying a car
  - Power of thoughts: watching a scary movie

## Specific BE's in panic

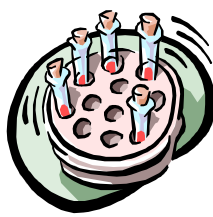
- *Inducing symptoms to demonstrate possible maintenance processes, eg:*
  - Effects of selective attention: 'body focus' experiments
  - The power of thoughts: paired associates
  - How triggering symptoms may be produced: hyperventilation, exercise.
- *Drop or reverse safety behaviours*
  - E.g. instead of tensing muscles, relax them as much as possible; instead of resting, run on the spot; instead of holding on to something, stand on one leg..
- *Test out what really happens*
  - E.g. what does happen if you collapse in a supermarket?

## Behavioural Experiments in Cognitive Therapy

Observational



Active Experiment



## Experiments Conducted in the Session

- Take advantage of naturally occurring moments.
- Opportunity to practise in safe context
- Therapist can model without personal risk e.g. hyperventilation exercise
- Intentional increasing of a particular sensation e.g. panic or health anxiety symptom, thought suppression
- Opportunity to develop confidence e.g. simulated exercises, being more assertive etc

## Experiments Conducted in 'Real World' Settings

- Go for a graded approach
- Identify a clear 'research question'
- Have a specific prediction (Theory 1) and an alternative (Theory 2)
- Brainstorm possible problems in advance
- Debrief afterwards. Which hypothesis was supported? What did the client conclude?

## Maximising Learning from Behavioural Experiments. I.

- Need to be formulation driven.
- Plan carefully. Know exactly what you want to test and why.
- Need clear predictions based on a question of significance to the client e.g. If I faint in a supermarket other people will....

## Maximising Learning from Behavioural Experiments. II.

- Construct experiments that involve dropping all safety behaviours (use a graded approach if necessary)
- Predictions must relate to danger not unpleasantness
- The client decides how far to go
- Continue testing the prediction until the client is satisfied.

## BE: Health anxiety example 1

- *Target cognition:* I need to be hypervigilant about physical signs of cancer
- *Alternative perspective:* Focusing attention on a symptom can blow things out of proportion
- *Prediction:* If I don't pay attention then I'll miss something important & worry more
- *Experiment:* Diary of how often thoughts about cancer come into your head. On alternate days check for lumps & worry as much as you want, on others just tally thoughts
- *Result:* More intrusions on the 'think about it & check' days than the 'resist the urge' days
- *Reflection:* Checking & focusing increases anxiety & my degree of belief that there is something seriously wrong

## BE: Health anxiety example 2

- *Target cognition:* If I don't monitor my knee it might get worse
- *Alternative:* Paying attention to a part of my body might make sensations seem like symptoms
- *Prediction:* If I don't monitor my knee my symptoms will get worse
- *Experiment:* Pt & therapist focus attention on one part of body for 2 mins, describe sensations
- *Result:* when focusing = notice sensations such as tingling, coolness etc
- *Reflection:* focusing attention on a body part can produce sensations that might be misinterpreted

## Health anxiety example 3: BE's to consider alternative explanations of symptoms

- Pt & therapist hold their arms at right angles to the body for two minutes = Start to notice pain. This demonstrates that pain can result simply from using muscles in an unusual way. 'I have MS' v.s. 'I am unfit'
- Pt & therapist get up & down from chairs very fast, turning heads to induce dizziness. = Slight feelings of dizziness are normally ignored unless we are anxious about them

## Obsessive compulsive disorder BE's


- Exposure and response prevention (but with a cognitive rationale)
  - E.g. not do ritual & see if bad happens
- Demonstration of effects of thought suppression
- Alternating suppression/recording of thoughts
- Alternating doing something till it feels right/doing it once and walking away
- Thought action fusion experiments
  - Likelihood (e.g. something bad going to happen to therapist) Or push it e.g. ruminations send mad – do so for an hour
  - Moral TAF having this thought is evil v.s. survey/research = common
- N.B. Did they really drop SB's? e.g. trousers

## Weekly Activity Schedule as a BE

One of the most useful strategies in CT for depression. Are used in two ways:

Phase 1: At first, to assess the impact of behaviours (OBSERVING their impact)


Phase 2: Then, to change their impact (ACTIVELY PLANNING to EXPERIMENT with doing things differently)

Weekly Activity Schedule: Phase 1:  
ASSESSMENT = Observational 

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**TASK: -**

1. Complete as much of WAS as possible
2. Get ratings of Achievement (A) and Pleasure (P) for each activity
  - Rate as soon after event as possible
  - Achievement rating = an achievement, given how you felt at the time

Weekly Activity Schedule: Phase 1:  
ASSESSMENT (Observational) 

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OUR PURPOSE IN ASSESSMENT IS TO DETERMINE:

**1. LEVEL AND TYPE OF ACTIVITY**

**LEVEL:** How is P spending time? High/low activity? What?

**PATTERN:** How does pattern of activities compare with before P became depressed? What has been dropped? Is P's life all work and no play? How much time is devoted to activities that might be expected to provide at least some sense of enjoyment?


**RANGE:** How wide a range of activities is reported? For example, does the day include a mix of obligations (e.g. work, childcare), social activities and relaxation?

Weekly Activity Schedule: Phase 1:  
ASSESSMENT = Observational 

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**2. EMOTIONAL EXPERIENCE OF THE ACTIVITY**

- ✗ What is the level of Achievement? What is the level of Pleasure? (as little as P suggests?)
- ✗ What activities are associated with an increase or decrease in mood?
- ✗ Are there discrepancies between what might be expected and what P records (e.g. "enjoyable activities" given low ratings?) - how come?
- ✗ At what points in the day does P feel better or worse?

Weekly Activity Schedule: Phase 1:  
ASSESSMENT = Observational 

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**3. COGNITIONS ACCOMPANYING ACTIVITY or INACTIVITY**

What thoughts may be blocking progress?  
What can be picked up about patient's thinking? Take into account:

- pattern of activity (e.g. no time for self)
- ratings (use only extremes of scales)
- daily reviews (e.g. I didn't do enough)
- reactions to the task (e.g. apologising for untidy writing)

What reasons does P give for loss of enjoyment/ pleasure?  
What reasons does P give for dropping previously pleasurable activities?

**Problems in practice: depressive cognitions**

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Typical cognitions about self & activities when depressed:

- "It won't work"
- "I won't enjoy it"
- "It's too much effort"
- "There are more important things to do"
- "I'm just a totally lazy and disorganised person - its just how I am"
- "I don't have the energy, I'm too exhausted"

Can lead to predictions about WAS & Tx:  
"It's a waste of time"

Weekly Activity Schedule: Phase 1:  
ASSESSMENT = Observational

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**HOW?**

1. Provide rationale for doing W.A.S
  - e.g. 1. "Individual footprint" - Padesky
  - 2. Opportunity to assess and test these thoughts
  - 3. Sometimes distorted thinking etc.
2. Spend 10 minutes in the session PRACTISING THE W.A.S. using the previous morning's or evening's activities, so P knows what to do.

## Using Activity Schedules for Active Behavioural Experiments (Phase 2)



After assessment, we can now use W.A.S to:

1. Do further testing of unhelpful beliefs (e.g. Nothing will work)
2. Deliberately plan pleasurable activities, or activities which will give sense of achievement, and see if they do so
  - Identify activities that are related to better mood. What is their mood moving in relation to?
  - Look for simple activities that the client could include into a daily routine.

## Using Activity Schedules for Active Behavioural Experiments (Phase 2)



TASK:

1. PLAN activities for the next week which are aimed to:
  - (i) increase pleasure, and
  - (ii) give a sense of achievement

HOW?

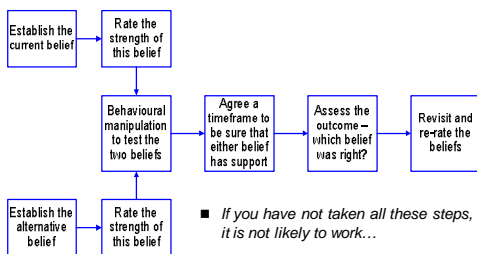
- Start small - where P is at, not where P thinks that should be
- Make it collaborative - P's ideas
- Be specific and concrete - where, who, when, how long?
- Plan ahead for any obstacles

## Preparing the Client for Behavioural Experiments

- Ensure the client can:
  - Identify automatic thoughts.
  - Find evidence for and against.
  - Generate alternative interpretations based on a review of the evidence.
  - Recognise alternative interpretations as feasible.

The critical steps, in the critical order

## Going through the steps



## Problems in practice: anxiety

- *Too frightened to try behavioural experiments or drop safety behaviours*
  - Modelling of 'dangerous' actions by therapist or family / friends
  - Build up through hierarchy to ultimate fears
  - More verbal work to weaken threat beliefs
    - Guided discovery: let's see, not to prove you wrong
  - Be ready to use chance events (eg panic in session)
- **While doing experiment**
  - Did they really drop safety behaviours?
  - What do they think stopped it (prediction) happening?

## When not to use BE's

- When rationale not understood
  - Is this a observational BE or an experimental BE?
- When not willing to at least consider 'theory B'
- When particular factors get in way of processing new information
  - "Too much" emotion
  - Too little emotion
  - Some specific beliefs and emotions (e.g. shame, guilt etc.)

## Testing therapist beliefs

- About specific CBT techniques
    - Setting agendas
    - Planning homework
    - Doing behavioural experiments
  - What are the safety behaviours?
    - Not doing it properly – half hearted
    - Not following up on homework etc.
- Can test out these predictions...

## Your mission (should you choose to accept it...)

- Identify something you would normally avoid doing, or only do with precautions in place, perhaps because of anxiety or personal assumptions.
  - If you can't think of anything personally relevant then think of something that might be beneficial to your patients, but which you might feel anxious about (e.g. "fainting" in public).
- Identify a specific behavioural experiment which you will be able to carry out during the experiential group (with help from your 'therapist').
  - N.B. Keep it real, keep it safe & keep it legal!
  - Consult with us before you go & do it

## Key references: books

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