

## **2321 Theory & Practice 2: Lecture 3**

### **Behaviour Therapy (2)**

#### **Model, Process Overview and Applications**

Dr Ian R. Ridgway

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## **INTRODUCTION**

Spiegler and Guevremont (2003)(S & G) state the fundamental assumption of behaviour therapy as '**we are what we do**' (p. 30, bolding mine). They say, 'each of us is defined by our behaviors' (p. 30). This statement points to their anthropology or view of the person. People are defined by their actions, by what they do, as opposed to what they think or what they feel.

They divide behaviours into two broad categories, namely, **OVERT**, and **COVERT**. Overt behaviour is behaviour one can directly observe (e. g., speaking); covert behaviour is behaviour that one cannot directly observe but may be able to infer from overt behaviour (e. g., forgetting may be able to be inferred from the fact that someone has missed an appointment).

Early Watsonian behaviourism focussed only on overt behaviours but, as often happens in human history, that initial stricture has been relaxed and behaviour therapy is not averse to considering covert behaviours particularly, when these can be correlated with overt behaviours. For example, if we see a person smiling and laughing (overt behaviours) we are likely to conclude that the person is *feeling* happy (covert behaviour).

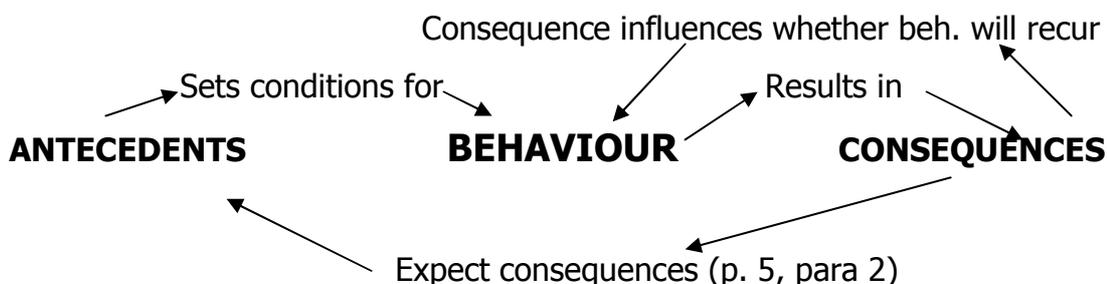
Behaviour therapy, according to S & G, includes the covert behaviours of cognitions, feelings/emotions, and physiological responses. Hence, 4 modes of behaviour can be said to be assessed and treated in behaviour therapy: overt behaviours, and the covert behaviours: cognitions, emotions, & physiological responses.

## (a) BEHAVIOURAL MODEL

We often ask the question of why do we act the way we do or why did someone else act in that particular way. You know some of the answers given to that question from the psychodynamic tradition and the personalist tradition. You also know answers as they have been formulated by the Christian tradition over the centuries from reflection on the Scriptures and on human nature.

'According to the behavioral model, *a person's behaviors are caused by present events that occur before and after the behaviors have been performed*' (p. 35). This formulation leads S & G to describe what they call an ABC<sup>1</sup> model of behaviour therapy.

In this behavioural model, B stands for behaviour, A stands for antecedents, and C stands for consequences. The A and the C are what are called maintaining conditions, in that they maintain the behaviour. Figure 1 below, depicts the model.



**Figure 1 Behavioural model showing maintaining conditions and behaviour**

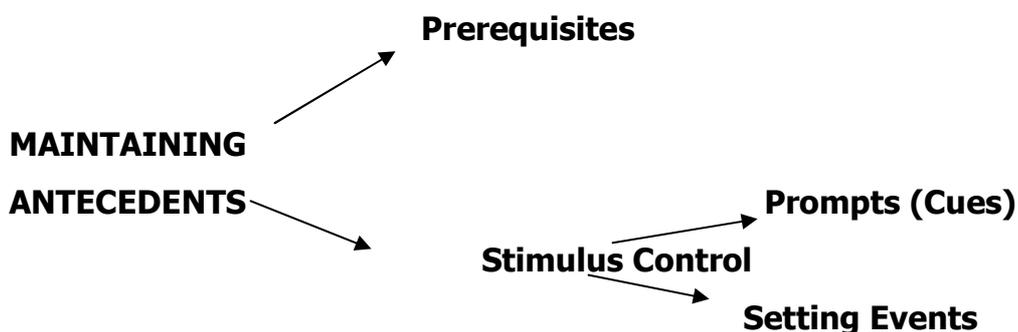
Two type of maintaining antecedents exist: prerequisites and stimulus control. (See Figure 2 below.) The first of these, **prerequisites**, is very important for engaging in many behaviours. For example, if one is unable to read in French one cannot read a French novel except in translation and that

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<sup>1</sup> Do not confuse this model with Albert Ellis' **ABC-DEF** model which you will meet later this semester.

requires familiarity with the particular language and reading skills appropriate for reading novels.

The second of these, **stimulus control**, 'involves cues or conditions that "set the stage" for behaviors to occur' (S & G, p.35). Stimulus control can be further broken down into prompts and setting events. Prompts cue someone to perform a behaviour such as a parent telling a child to wash her hands before tea. Setting events are broader and more enveloping than cues. For example, studying for a test is more likely to happen in a quiet library than in a noisy café setting. We frequently alter setting events to change our own behaviours. If we have a weakness for buying unnecessary foodstuffs, we might ensure that we have just had a meal when we go shopping at the supermarket. Therapists use both prompts and setting events when assisting CTs to change unwanted behaviours.



**Figure 2 Maintaining Antecedents**

Having looked at the **A**, the **maintaining Antecedent** we now look at the **C**, the maintaining **Condition**. S & G put it succinctly, 'Whereas maintaining antecedents are responsible for a behavior's being performed in the first place, *maintaining consequences determine whether the behavior will occur again*' (italics in original, p. 37).

Pleasant consequences make it more likely that a behaviour will be repeated whereas unpleasant consequences make it less likely that a behaviour will be repeated. If we taste a particular food and we are sick afterwards or just do

not like the taste we are less likely to try that food again. The converse is also true.

Such experiences also create expectations about probable consequences. For example, if I find drinking a particular wine is a very pleasant experience, maybe even the company or occasion that I imbibed the wine with or on was enjoyable, I am more likely to want to repeat that experience because I now have an expectation that drinking that wine will lead to pleasurable consequences. ***Thus, today's consequences may become tomorrow's maintaining antecedents.***

S & G make an important point when they say that, 'contrary to popular misconception, BT does not *directly* change symptoms or behavior' (p. 37). What BT does is to change symptoms and problem behaviours by '*changing their maintaining conditions* [i.e., antecedents and consequences]' (italics in original, words in brackets added, p. 37). Although this sounds simple, it is simple in theory but more difficult in practice. The best we can say is that we can only seek to identify ***probable*** maintaining conditions.

Another critical distinction that the authors make is between 'present maintaining conditions' and 'past originating conditions' (p. 39). The behavioural model states that **present** conditions cause our behaviour; past events only *indirectly* influence our present behaviour. If we take the example of dressing ourselves: We can see a difference between how we came to learn how to dress ourselves, the conditions that surrounded our getting dressed when we were young as opposed to getting dressed today. Dressing ourselves today is maintained by different conditions from those associated with the original behaviour.

BT believes that heredity and biology play a part in some disorders but that learning and the environment do as well. Although the former set some boundaries (e.g., our activity level has a heritable component to it which can

be displayed from birth onwards) learning can influence many behaviours including autistic behaviour, depression and schizophrenia.

## **(b) COUNSELLING PROCESS OVERVIEW**

S & G detail 8 steps (p. 49):

### **1) Clarifying the client's problem**

As all therapists are aware CTs tend to come to counselling with often vague and general problems such as, 'I'm unhappy most of the time', or 'I'm not coping at work'. When CTs say they are unhappy we have to find out what the client means by unhappy and most of the time.

Furthermore, CTs will sometimes come with more than one problem.

Therapist's job is to narrow this number down to 1 or 2 initially. Treating one problem can sometimes lead to good changes in other problems. It also provides a focus for the CT which can lead to quick change which is motivating for the CT.

### **2) Formulating initial goals for therapy**

These may be general such as 'feeling better'. They are formulated by the CT. In training, we were taught to ask CTs the question, 'If you had a magic wand and had one wish, what would you wish for re this problem we've talked about?'. Therapist only intervenes if CTs goals are clearly unrealistic (e.g., never getting angry or sad again) or goals are likely to affect the CT or others adversely (e.g., trying to lose too much weight in too short a time).

When CT has formulated an initial goal, that goal is then translated into a specific, measurable, and unambiguous objective.

### **3) Designing a target behaviour (specific behaviour to be changed)**

Target behaviours are 'narrow, discrete aspects of the problem that can be defined clearly and measured easily' (p. 52). For example, Mary Cover Jones chose Peter's intense fear of rabbits as a target behaviour. She used

his observation of other children handling the rabbit and then gradually exposed him to the presence of the rabbit. Good target behaviours are narrow in scope, unambiguously defined, measurable, appropriate and adaptive.

Two types of target behaviours: acceleration (those to be increased such as standing up for one's rights) and deceleration (those to be decreased such as smoking or being late to classes).

#### **4) Identifying the maintaining conditions of the target behaviour**

Usually identified by careful questioning of the CT. S & G list some of the important questions to be asked as: 'In what situations do you engage in the target behavior most frequently and least frequently?; What are you thinking and how are you feeling right before the target behavior?; What happens right after you perform the target behavior?; and, What are the long-term effects of engaging in the target behavior?' (p. 59).

#### **5) Designing a treatment plan to change the maintaining conditions**

#### **6) Implementing the treatment plan**

BT *indirectly* changes target behaviours by *directly* changing maintaining conditions. These changes are carried through an individualised treatment plan. So fear of presenting a report in class may be treated by increasing the positive consequences of taking part in such activity (such as reinforcing oneself with a favourite food) and removing some of the negative (such as harsh self-criticism).

When setbacks and problems arise which frequently happens then plan can be changed or adjusted. The ability to be flexible in planning is a major feature of BT.

## **7) Evaluating the success of the treatment plan**

### **8) Conducting follow-up assessment**

Success is measured in terms of whether there has been an increase (or decrease) in levels of behaviour at the beginning of treatment (called baseline behaviour). If target behaviour level has not changed then treatment plan has to be assessed to see where weaknesses exist. If change is occurring then another aspect of the problem may need to be added as a target behaviour.

When goals have been reached therapy is ended. BT often seeks to gain follow-up data to assess progress after 3 months and then perhaps after 12 months.

## **(c) B. F. SKINNER (1904-1990)**

Brought up a strong Presbyterian but became an atheist. He wanted to be a writer but ended up concluding that the art of the 20<sup>th</sup> century was science (Hurding, 1985: 46). Died of leukaemia after a life-time of dedicated scientific work. He was still writing only days before his death.

### **1) Mentalism**

*Mentalism* is linked to Descartes' idea of the body/soul dualism. Although, Watson denied the importance of the mind or thinking *for psychological study* (Malone, 2001: n. p.) he did not deny that we had minds. Skinner believed that this formulation was wrong and reduced all human phenomena to behaviour and their antecedent and consequential surroundings.

Whereas *mentalism* is the belief that inner states, so-called *covert* (hidden) phenomena (e. g., willing, feelings, thoughts, beliefs, and convictions) can be used to explain human behaviour,<sup>2</sup> Skinner argued that such things were

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<sup>2</sup> Psychodynamic theories rest on this understanding as do most commonsense views.

just behaviours and hence, how could they *cause* other behaviours? These behaviours<sup>3</sup> themselves require explaining. Skinner denied the notion of causation strongly. He was sure that covert phenomena (such as thoughts) did not **CAUSE** overt behaviours.<sup>4</sup> In fact, for him, all behaviours can only be *explained* in terms of the antecedents and the consequences surrounding them. (In laying down this position, inevitably he later took strong issue with cognitive theorists and therapists who claimed that thoughts could cause behaviours.)

And, being a behaviourist, it is not hard to understand why Skinner took this view. For if humans consist of behaviours (covert and overt) that are conditioned by reinforcement then it follows that little sense can be made of the notion that covert behaviours cause overt ones. To use this notion is to become involved in a circular explanation, going from one behaviour to another (Graham, 2002: n. p.).

Skinner's particular form of behaviourism is known as *radical behaviourism*. Skinner also did not accept that behaviour had to be observable by others to provide *inter-observer agreement* as with Watson and most other behaviourists. Skinner believed that thoughts, memories, emotions and feelings could be observed by one person, that is, the person having them!

## **2) Operant Conditioning**

Skinner believed that all conditioning is either *respondent* or *operant* conditioning. Respondent (or classical) conditioning depends on 'hard-wired' reflex actions such as salivation or eye blinks. If meat is presented to a hungry dog then he salivates. If a feather is wafted near a person's open

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<sup>3</sup> Hence, he extended greatly the meaning the earlier definition of behaviour (Malone, 2001: n. p.).

<sup>4</sup> *Contra* Skinner, Graham (2002) asks us to think about deciding which apple to take from a bowl of fruit. We categorise the fruit into ripe and appealing versus unripe and less appealing. Outwardly, we take an apple. What seems clear is that our inner state of categorising leads to choosing a ripe apple.

eye, an eye blink will be observed. In these cases, something from the environment must stimulate the organism.

In operant conditioning, no stimulus 'is detected at the time' (Hurding, 1985: 46). The 'operant' aspect identifies the fact that organisms (human and non-human) *operate on* the surrounding environment. When the organism behaves in some way, the environment will reinforce ('reward') the response in some way.

For example, Skinner observed a pigeon lifting up its head and began to give it food every time it did this. The behaviour increased. He called this 'special type of stimulus' which is delivered just after the operant occurs 'a **reinforcing stimulus**, or simply a reinforcer' (Boeree, 1998, 2006: n. p., bolding his).

For example, a rat in a 'Skinner box' will do all sorts of rat-like things until, by chance, he discovers that if he pushes a particular bar (an operant) a food pellet (a reinforcer) comes into the cage. The rat continues to push the bar so that more food will come his way.

Skinner's basic law is that the nature of [temporal] consequences will tend to modify the rate at which a particular behaviour is repeated in the future. This law may be formulated positively in the following principle: '*A behaviour followed by a reinforcing stimulus results in an increased probability of that behavior occurring in the future*' (Boeree, 1998, italics his.)

In the case above should the rat stop receiving reinforcement for pushing the bar then the rat would stop pushing the bar. This situation could be explained using the principle: '*A behaviour no longer followed by a reinforcing stimulus results in a decreased probability of that behavior occurring in the future*' (Boeree, 1998, 2006: n. p., italics Boeree's) (For a short but good article, see Brown (2001)).

### **3) Schedules of Reinforcement**

Boeree (1998) tells Skinner's story of how he began to discover these reinforcement schedules. He was running low on the rat pellets which he had to make by hand at that time. To reduce the tedium he used less pellets but found the rats 'kept up their operant behaviors, and at a stable rate' (Boeree, 1998)! These schedules became the major part of Skinner's discoveries and are four in number.

#### **a) Continuous**

Reinforcer is given every single time behaviour is emitted. Best way to get a behaviour established.

#### **b) Fixed ratio**

First one discovered by Skinner. Every third or fifth or 20<sup>th</sup> time the operant behaviour is emitted a reinforcer is given.

#### **c) Fixed interval**

If the interval chosen is 20 seconds, as long as the rat pushes the bar once during the interval, a reinforcer is given. If no bar-pushing occurs then no reinforcer is given. If it is pushed a hundred times during the 20 seconds then the rat still only gets a single reinforcer.

#### **d) Variable schedules (2 types)**

One can vary the interval or the ratio. Organism cannot establish a rhythm between behaviour and reinforcer. Hence, behaviour will be emitted repeatedly because 'I might get rewarded next time'. These schedules are the most robust and are resistant to extinction. [Variable schedules operate in gambling machines.]

Boeree (1998, 2006: n. p.) states that Skinner's 'entire system is based on **operant conditioning**' (bolding his). Likewise, Hurding (1985: 46) states that Skinner believed that 'all behaviour is essentially a product of operant conditioning'.

According to Hurding, Skinner explained (away?) human freedom and dignity as 'products of reinforcement' (p. 47). For Skinner freedom does not exist. The quest for freedom is a 'response to *negative reinforcement*' (Hurding, 1985: 47). For example, people flee from oppressive regimes to escape 'aversive environmental features'.

Likewise, he explained human dignity as related to *positive* reinforcement. We are more likely to feel a sense of dignity if we are thanked and praised for our efforts rather than criticised. Skinner understood freedom and dignity to exist within an evolutionary process. Hence, freedom and dignity serve to advance the survival of the species.

### **(d) BEHAVIOURAL MEDICINE**

Pain is a common problem and most commonly faces GPs in surgery. A distinction can be made between acute and chronic pain. *Acute pain* 'is the result of bodily trauma and disappears when the injury heals' (p. 389). *Chronic pain* 'occurs after an injury has healed or when no trauma exists. Pain is considered chronic if it lasts for at least 6 months' (p. 389).

Medication is the most common treatment for pain but has a number of drawbacks:

1. may not fully ease pain;
2. many drugs lose their effectiveness over time;
3. long-term use of pain killers lessen patients' tolerance for milder pain;
4. undesirable side-effects (drowsiness, incoordination, memory deficits);
5. danger of physical and psychological dependence.

Behavioural treatment of chronic pain aims to: first, reduce patient's discomfort (with headaches for example) or, two, to increase patient's tolerance for pain.

## **1) Pain as a behaviour**

BT regards pain as a behaviour. It's useful<sup>5</sup> to do this because behaviours can be changed. Pain behaviours are overt behaviours that can be assessed and altered. Grimacing and saying 'Ouch' are examples. *Well* behaviours are also overt behaviours: smiling and saying 'I feel well today' are relevant instances.

Because pain behaviours are behaviours they are maintained by their antecedents and consequences. For example, a boy may not show any sign of distress after being strongly tackled on the football field for fear of being labelled a weakling but on getting home to a sympathetic mother, he may be more willing to show his bruises and receive some care for them. The antecedents and consequences in the two situations are different and result in different pain behaviour.

He may feel pain in both situations through his pain receptors and this cannot be changed via behaviour therapy. But, situational factors and a person's ability to cope with discomfort can be changed through BT which is carried out first in a hospital setting for some weeks and then continued at home.

### **a) Attention:**

One straightforward approach is to change the consequences of pain behaviours. Patients are not given attention if they exhibit pain behaviour but are reinforced with attention and praise if they exhibit well behaviour.

### **b) Rest:**

Another consequence of pain is rest. Hence, rest is made contingent on meeting a criterion which is set below the patient's assessed threshold.

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<sup>5</sup> It may be deemed 'useful' to understand pain as a behaviour but the question is is it true? Pain has behavioural aspects to it but can pain be so easily described as simply behaviour.

Patients are asked to do this amount of activity and then they can rest before they proceed to next activity.

### **c) Medication:**

Typically, medication is given on an as-needed basis. In a behavioural programme it is given on a time basis and gradually reduced over the course of the treatment.

When the patient comes home from hospital, family and friends are instructed to withhold reinforcement for pain behaviour but to reinforce well behaviour. For example, a person in chronic pain may be allowed to go shopping (if that is a reinforcer) if she has done a requisite amount of walking exercise. If having friends to visit is a reinforcer then patient may be allowed to have visitors if he does some work around the house.

## **2) Treatment packages**

Pain is a multidimensional behaviour and is best handled using a package of treatments rather than a single treatment. Hence, the use of maintaining conditions needs to be supported by cognitive-behaviour skills therapy, relaxation training, and biofeedback. These can be combined with the non-behavioural treatments of medication, physical therapy, and exercise.

## **3) Efficacy**

Most research has focussed on lower back pain and headaches (including migraines). BT programs seem to be well-supported. However, in most cases, patients report a reduction in severity of pain rather than its disappearance. The specific use of changing maintaining conditions has been narrowly applied mainly to lower back pain and headaches for which it has been shown to be effective. One limitation is that the cognitive and emotional aspects of pain do not seem to be addressed.

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