Doing Research in Behavior Modification

…going beyond the screening, baseline, treatment and follow-up phases of a typical behavior modification program to demonstrate convincingly that it was indeed the treatment which caused a particular change in behavior

The Reversal-Replication (ABAB) Research Design

- To test that it was the reinforcement that brought forth the change, withdraw the reinforcement until the behavior returns to the baseline rate.
- Allow the behavior to remain at the baseline rate until it seems stable and predictable. Then reinitiate the reinforcement.
- Does the change in the behavior reflect what you got the first time?

The Reversal-Replication (ABAB) Research Design

- Problems: it may be inappropriate to reverse to baseline conditions (e.g. is a self-abusive behavior is involved); or it may be impossible to reverse back to baseline conditions (e.g. a new behavior was established firmly, natural reinforcers have taken over, and it cannot be unlearned).

Multiple Baseline Designs:

- these are research designs that are suited for demonstrating that a particular treatment was indeed responsible for a specific behavioral change.

Multiple Baseline Across Behaviors

- To test the effectiveness of a reinforcement program on a particular behavior, baseline two or more behaviors concurrently.
- Then introduce the treatment (in this case reinforcement) sequentially across two or more behaviors.
- Do the behaviors show similar changes when the treatment is introduced?
- If so, you can attribute the improvement to the treatment.

Multiple Baseline Across Situations

- This studies the effects of a treatment on a single behavior that occurs in several situations.
- Take baselines of the behavior in several situations, and then sequentially introduce the treatment in the different situations.
- Does the behavior show similar changes in the different situations when the treatment is introduced? If so, you can attribute the improvement to the treatment.

Multiple Baseline Across Situations

- Problem: when the treatment is applied to the behavior in the first situation, through stimulus generalization, it might cause subsequent improvement in all situations. Although stimulus generalization in this case is desirable, it does not allow you to confidently attribute the improvement to the treatment.

Multiple Baseline Across People

- This demonstrates the effectiveness of a treatment by applying it sequentially to individuals.
- If the treatment brings about similar changes in each individual, you can attribute the change to your treatment

Alternating-Treatment Designs (Multi-Element Designs)

- These are research designs which are suited for comparing the effects of different treatments for a single behavior of a single individual.
- This design involves alternating two or more treatment conditions considerably more rapidly than would be done in a reversal replication design, e.g. alternating between using extinction and response cost and comparing the effects of the two treatments.

Alternating-Treatment Designs (Multi-Element Designs)

- Problems: differential effects of the two treatments observed might be due to the different stimulus control associated with the treatment; or the two conditions may interact

To analyze and interpret data and judge whether the treatment (independent variable) had an effect on the behavior (dependent variable) consider the following guidelines:

There is greater confidence:

- the greater number of times an effect has been replicated,
- the fewer the overlapping points between the baseline and treatment,

There is greater confidence:

- the sooner the effect is observed following the introduction of the treatment,
- the larger the effect in comparison to the baseline,
- the more precisely the treatment procedures are specified,

There is greater confidence:

- the more reliable the response measures,
- and the more consistent the findings with existing data and accepted behavioral theory.

Clinical effectiveness

- what is the practical impact

Social validity

- judgments about the clinical or applied importance of behavioral change
- For example, a scientific analysis may show that a treatment decreased self-abusive behavior in a statistically significant way, but if the behavior still persists, it has not been clinically effective.

Internal validity

- a finding is internally valid if the independent variable did cause observed changes in the dependent variable

External validity

- a finding is externally valid if it can be generalized to other behaviors, individuals, settings or treatments