Overview

- I will provide a brief overview of my lab sites.
- I will (very briefly) describe the known “operant functions” of behavior disorders.
- I will contrast “antecedent” and “consequence” based interventions.
- I will present the logic of “noncontingent reinforcement” as an example of antecedent-based treatment.
- I will conclude with some suggestions for application.

Major areas of research

- Assessment of behavior disorders
- Treatment of behavior disorders maintained by social reinforcement contingencies
- Treatment of behavior disorders maintained by automatic reinforcement
- Parent, teacher, and care provider training

My career

- University of Florida
- Louisiana State University
- University of Pennsylvania (Children’s Seashore House)
- University of Florida

Our autism/intellectual disabilities lab

- School-based research
- Our new behavior analysis research clinic
Our autism/intellectual disabilities lab
- School-based research
- Our new behavior analysis research clinic
- Consultation

Behavior Disorders in Autism and Intellectual Disabilities
- Self-injurious Behavior (SIB)
- Aggression
- Property Destruction
- Tantrums
- Severe stereotypic behavior
- Among others

Operant Functions of Behavior Disorders
- Socially mediated positive reinforcement
- Socially mediated negative reinforcement
- Automatic positive or negative reinforcement

Functional Analysis Results:
Social Positive Reinforcement-Tangible
Volmar et al. (1999)

Functional Analysis Results:
Social Negative Reinforcement-Escape
Volmar et al. (1995)
Functional Analysis Results: Automatic Reinforcement

Antecedent vs. Consequence-based interventions
- Antecedent-based interventions aim to reduce the “motivation” to engage in problematic behavior.
- Consequence-based interventions aim to eliminate reinforcement for the problematic behavior and teach replacement behavior via differential reinforcement.

Differential Reinforcement
- Problematic behavior is sometimes what behavior analysts call “choice” (defined shortly).
- Differential reinforcement involves essentially “stacking the deck” in favor of appropriate behavior.
- This approach can be easily remembered by the simple rule of thumb: Maximize/Minimize (to be discussed).

Differential Reinforcement of Alternative Behavior (DRA)
- DRA is essentially a concurrent schedule.
- Baseline circumstances (reinforcement schedules) usually favor problematic behavior.
- Treatment circumstances represent schedules that favor appropriate behavior.
- Ideally, Extinction vs. Reinforcement.
- However, there are circumstances when extinction is not possible or practical.

Examples of factors influencing the application of extinction schedule
- Treatment integrity failures.
- Legal or ethical requirement to block attention-maintained self-injury or aggression.
- Automatic reinforcement.
- Large and/or fast individuals may produce escape even if we attempt escape extinction.

Differential Attention Baseline example

<table>
<thead>
<tr>
<th></th>
<th>Aggressive Behavior</th>
<th>Appropriate Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of Attention</td>
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<td>0.2</td>
</tr>
<tr>
<td>Delay to Attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of Attention</td>
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<td>on average &gt; 20 sec</td>
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#### Solution

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Noncontingent Reinforcement

What is NCR?
- Reinforcer is delivered on a fixed time schedule
- The subject’s behavior does not influence the schedule of reinforcer delivery
- The schedule is thinned from a rich schedule to a relatively lean, more manageable schedule

Why evaluate NCR as treatment?
- Basic research has shown that response-independent schedules (FT or VT) functional similar to extinction.
- Applied acquisition research has shown that acquired behavior decreases when reinforcers are delivered noncontingently.
- Advances in assessment have allowed us to identify specific sources of reinforcement maintaining aberrant behavior.
- Potential limitations of differential reinforcement may justify the evaluation of alternative procedures.
Some limitations of DRO

• Several reviews have concluded that DRO is a relatively ineffective procedure.
• Sometimes produces extinction-induced behavior.
• Can be cumbersome to implement.
• If DRO interval is too long, it can produce extremely low rates of reinforcement.

Vollmer et al., 1992

NCR Treatment

Vollmer et al., 1995

Treatment-NCE

Marcus & Vollmer (1996)
Suggestions

- Use NCR in crisis situations, by completely eliminating the establishing operation for the target behavior.
- Combine NCR with differential reinforcement in order to teach or strengthen alternative behavior.
- Very gradually thin the schedule of reinforcement.

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