Differential Reinforcement

Differential reinforcement is a powerful consequent strategy that can be applied in a variety of ways. When you use differential reinforcement, you typically reinforce one behavior while putting another behavior on extinction.

In this guide we will discuss the following differential reinforcement strategies.

1. Differential reinforcement of other behavior (DRO)
2. Differential reinforcement of alternative behavior (DRA)
3. Differential reinforcement of incompatible behavior (DRI)
4. Differential reinforcement of lower rates of behavior (DRL)
5. Differential reinforcement of higher rates of behavior (DRH)
6. Other Differential Reinforcement (DR) Strategies

For a complete understanding of Differential Reinforcement download Differential Reinforcement: A Practical Guide to Using DR from Teachers Pay Teachers.

DRO

Differential reinforcement of other behavior (DRO) provides reinforcement in the absence of target behavior. This time-based system offers reinforcement on a fixed or variable interval schedule when the specified behavior does not occur.

For example, you want to eliminate a child's spitting. In baseline, the behavior occurred about every 2 1/2 minutes. You decide to use DRO on a FI2 schedule to reinforce the absence of spitting. You set a timer for 2 minutes and for every 2 minutes during which spitting does not occur, the child earns a reinforcer. If the child spits during the 2 minute interval, the timer is reset to 0 and the interval begins again. The child earns reinforcement only after 2 consecutive minutes of no spitting.

DRA

Differential reinforcement of alternative behavior (DRA) offers reinforcement for appropriate alternative behavior to the target behavior. For this intervention, choose an alternative behavior you wish to reinforce. This alternative behavior should serve the same function (access, escape, automatic) as the challenging behavior. For more on understanding the function of behavior check out *ABA Fundamentals for Parents* available for download from our sister site.

This intervention provides reinforcement on a fixed or variable ratio schedule.

You could use DRA to reduce a variety of challenging behavior while teaching an appropriate alternative behavior. For example, if your client jumps up and down repeatedly, making loud noises upon impact which is disruptive to others, reinforce jumping on a small trampoline instead. It's not enough to just direct him to engage in the alternative behavior, you must also provide reinforcement for it!

DRI

Differential reinforcement of incompatible behavior (DRI) provides reinforcement for a behavior that is incompatible with the target behavior. Similar to DRA, for DRI, choose what incompatible behavior you wish to reinforce. This behavior again should be functionally equivalent to the challenging behavior. DRI also provides reinforcement on a fixed or variable ratio schedule.

When choosing an incompatible behavior, consider one that produces the same result for the child while also ensuring that the child can't perform both the target behavior and the incompatible behavior at the same time.

Let's look at an example. You're working with a child who constantly taps his pencil on the desk when completing worksheets. You decide to use DRI to reduce this behavior. To do so, you decide to reinforce writing since he cannot write and tap his pencil at the same time.

DRL

Differential reinforcement of lower rates of behavior (DRL) reduces a behavior without eliminating that behavior. This intervention is ideal for behaviors that are simply occurring too frequently. For this intervention, you choose your interval (time period) and the maximum number of occurrences of the behavior that will earn reinforcement.

Here's an example: your client raises her hand to respond every time the teacher asks a question. She becomes upset when she's not called on, but she's not allowing the other children in the class to respond to the teacher's questions. You want to reduce her rate of hand raising without eliminating the behavior. You decide that a more reasonable rate of responding would be for her to raise her hand no more than 5 times during a 10 minute period. If she raises her hand 5 or fewer times during that 10 minute period she earns reinforcement. If she responds more than 5 times then reinforcement is withheld for that period and the next interval will begin.

When using DRL, you can shape lower rates of responding by gradually changing the reinforcement criteria. If in the example above, your client currently raises her hand 25 times in a 10 minute period, you might begin your criteria at 20 times in a 10 minute period and gradually change the criteria as she becomes successful.

DRH

Differential reinforcement of higher rates of behavior (DRH) reinforces a higher rate of responding. Use this intervention when your client is demonstrating a skill but not at a high enough rate.

For example, your client completes simple math problems at a rate of 1 per minute. While you're pleased that he completes his work, with 100 problems on the paper, he will not complete the worksheet within the designated math time. DRH provides reinforcement for completing work at a faster rate. You decide to shape faster responding by providing reinforcement if he completes at least 2 problems in a minute. Over time, you gradually increase the criteria required to achieve reinforcement.

DR Strategies

In some instances, you may differentially reinforce a more desired behavior with a more potent reinforcer and a slightly less desirable behavior with a slightly less desired reinforcer as part of a plan to shape behavior. For example, when trying to teach a child to echo the word "mama," you might choose to give the child one car when he says "ma" and 10 cars when he says "mama," assuming that more cars are more reinforcing for the child.

This strategy works well for toilet training as well. You can differentially reinforce sitting on the toilet with a lower preference item and producing (urinating or deficating) on the toilet with a high preference item.