# Question for the Day

Why are some behaviors persistent and resistant to extinction?

# Description of the Schedules of Partial Reinforcement

Schedule of partial reinforcement: The delivery of a reinforcer according to a preset pattern based on the number of responses (a ratio) or the time interval (interval) between responses.

| | FIXED (predictable basis) | VARIABLE (unpredictable basis) |
|---|---|---|
| **RATIO (#)** | fixed ratio (FR):<br>Reinforcing a particular behavior after that behavior has occurred for a predetermined *number of times*.<br><br>Example:<br>A food dispenser drops one food pellet after a pigeon pecks at a bar 25 times. | variable ratio (VR):<br>Reinforcing a particular behavior after that behavior has occurred for an unpredictable *number of times*.<br><br>Example:<br>A pigeon has a 1/25 chance of receiving a food pellet for every peck on the bar. |
| **INTERVAL (time)** | fixed interval (FI):<br>Reinforcing the occurrence of a particular behavior after an predetermined *amount of time* since the last reinforcement.<br><br>Example:<br>A pigeon received a food pellet after the first press of the bar after a two minute interval. | variable interval (VI):<br>Reinforcing the occurrence of a particular behavior after an unpredictable and *varying amount of time* since the last reinforcement.<br><br>Example:<br>A pigeon has a 1/120 chance every second to receive a food pellet after every press of the bar. |

You might want to think of the word “variable” as “randomly presented by a preset (ratio/interval)”

# Examples of the Schedules of Partial Reinforcement

| | FIXED (predictable basis) | VARIABLE (unpredictable basis) |
|---|---|---|
| **RATIO (#)** | fixed ratio (FR):<br>Reinforcing a particular behavior after that behavior has occurred for a predetermined *number of times*.<br>  | variable ratio (VR):<br>Reinforcing a particular behavior after that behavior has occurred for an unpredictable *number of times*.<br>  |
| **INTERVAL (time)** | fixed interval (FI):<br>Reinforcing the occurrence of a particular behavior after an predetermined *amount of time* since the last reinforcement.<br>  | variable interval (VI):<br>Reinforcing the occurrence of a particular behavior after an unpredictable and *varying amount of time* since the last reinforcement.<br>  |

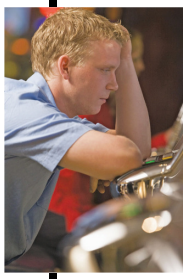
# Ratio Schedules of Reinforcement

| Fixed Ratio | Variable Ratio |
| --- | --- |
|  |  |
| Reinforcing a particular behavior after that behavior has occurred for a predetermined *number of times*. | Reinforcing a particular behavior after that behavior has occurred for an unpredictable *number of times*. |

# Interval Schedules of Reinforcement

| Fixed Interval | Variable Interval |
| --- | --- |
|  |  |
| Reinforcing the occurrence of a particular behavior after an predetermined *amount of time* since the last reinforcement. | Reinforcing the occurrence of a particular behavior after an unpredictable and *varying amount of time* since the last reinforcement. |

# Examples of Each Schedule of Partial Reinforcement



| | FIXED | VARIABLE |
|---|---|---|
| **RATIO (# of responses)** | • A food dispenser drops one food pellet after a pigeon pecks at a bar 25 times.<br>• You win for every 4th card flipped over from a 52 card deck.<br>♠♦♣♥ ♥♦♠♦ ♣♥♠♦ ♣♣♥♦<br>• Phil, a real estate broker gets a bonus for every ten houses sold.<br>• Buy 12 cookies, get 2 free.<br>• I give my dog a treat every 2 houses we pass on the way home. | • A pigeon gets a food pellet, on the average every 25 pecks on the bar.<br>• You win for every heart that is flipped over from a 52 card deck.<br>♠♦♣♥ ♥♦♠♦ ♣♥♠♦ ♣♣♠♦<br>• A baseball player with a batting average of .333 will get a hit about 1/3 of the time.<br>• Baseball cards packs have four "premium card" per box of 36.<br>• My dog has a 50% chance of getting a dog treat for every house we pass on the way home. |
| **INTERVAL (time)** | • A pigeon received a food pellet after the first press of the bar after a two-minute interval.<br>• Health inspections that occur in January and July.<br>• Scheduled drug testing<br>• Getting paid every two weeks of work.<br>• Receiving $40 for every day spent collecting signatures for a constitutional amendment.<br>• I give my dog a treat every 3 minutes on the way home (no matter the progress). | • A pigeon receives a food pellet after the first press of the bar at about 2 minutes.<br>• Random health inspections that occur twice a year.<br>• Random drug testing.<br>• My dog has a 33% chance every minute to get a dog treat on the way home (no matter the progress). |

# Schedules of Partial Reinforcement:
# The likely effect of a schedule of reinforcement on behavior

| | FIXED | VARIABLE |
|---|---|---|
| **RATIO** | Produces a high rate of responding that follows a burst-pause-burst pattern. Usually, a pause after each reinforcer is obtained occurs.<br><br>Example: If you get paid $20 for mowing 2 lawns, you tend to take a break after mowing 2 lawns. | Produces a high rate of response with hardly any pauses between trials or reinforcement. Learning is more permanent and difficult to extinguish or eliminate.<br><br>Example: Imagine having a 50% chance of getting paid $20 for mowing a lawn. There is no break in behavior. |
| **INTERVAL** | Produces a pattern of responses where very few responses are obtained until the fixed interval of time approaches. The rate of response increases before reinforcement and then decreases after the reinforcement.<br><br>Example: Employee performance increases when they know their annual review draws near and decreases just as soon as it is over. | Produces a pattern of moderate and steady responses. It is not a good schedule for initial learning, but produces a highly stable performance.<br><br>Example: Random and/or surprise inspections by the health department. |

# Effect of Reinforcement Schedules on Behavior

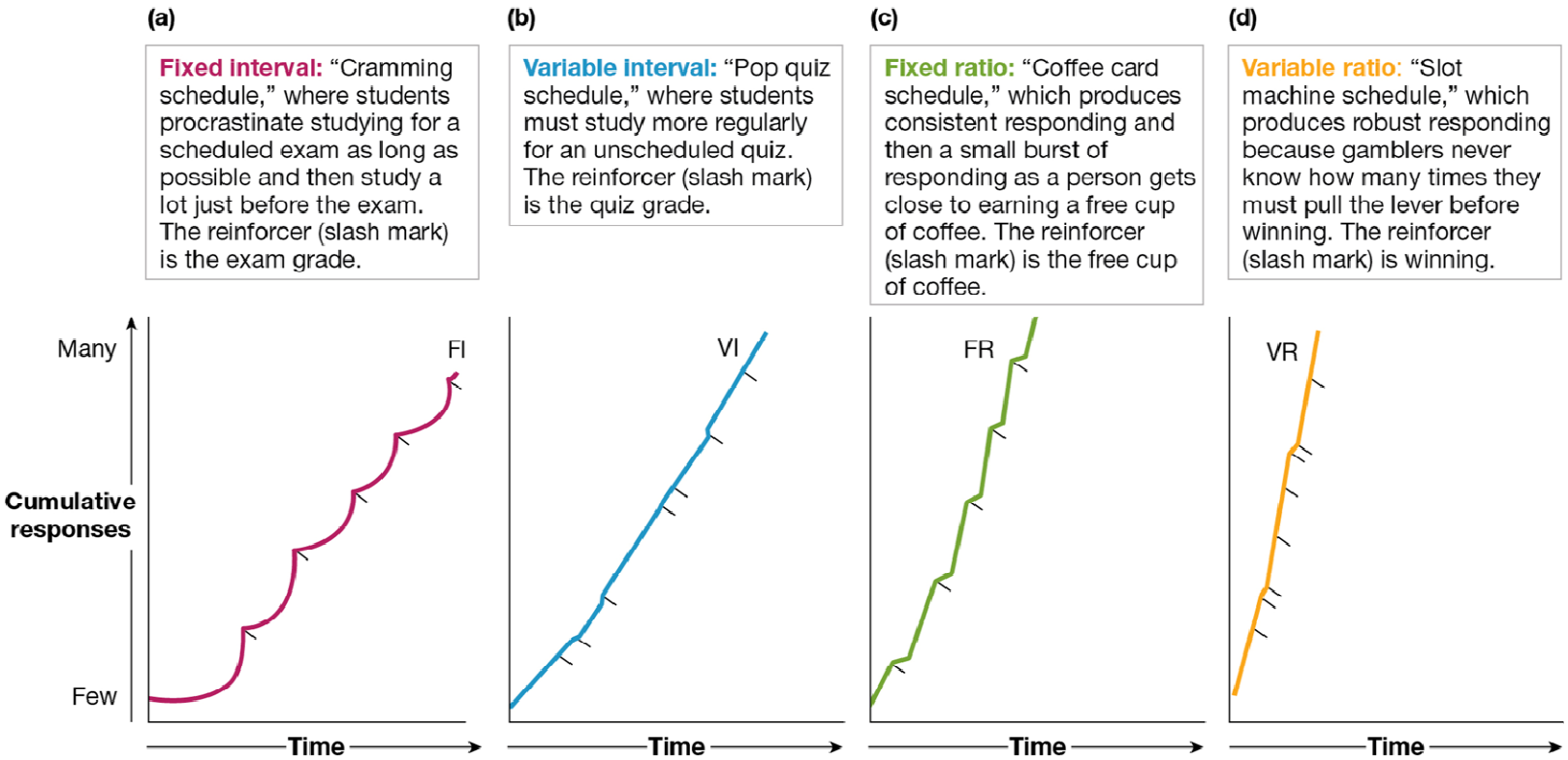



**FIGURE 6.19**