Operant Conditioning

Operant conditioning (instrumental conditioning): The basic learning process that involves changing the probability that a response will be repeated by manipulating the consequences of that response (page 178).

These consequences are called reinforcements and punishments.

<table>
<thead>
<tr>
<th>Reinforcements</th>
<th>Punishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A consequence that follows a behavior that makes that behavior more likely to occur in the future. Behaviors that are reinforced are more likely to occur.</td>
<td>A consequence that follows a behavior that makes that behavior less likely to occur in the future. Behaviors that are punished are less likely to occur.</td>
</tr>
</tbody>
</table>
Reinforcements and punishments are defined by the effect they produce.

- Money is not a reinforcement if it doesn’t increase behavior.
- Spankings are not punishments if they don’t modify behavior (in some cases they are reinforcements because they increase the likelihood of behavior).
# Reinforcements and Punishments

<table>
<thead>
<tr>
<th>Consequence is “added”</th>
<th>Consequence is “subtracted”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behaviors are more likely to occur</strong></td>
<td><strong>Behaviors are less likely to occur</strong></td>
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</table>

**POSITIVE REINFORCEMENT**
Behavior is followed by a desirable event or state.

- $10 for an A makes it more likely a student will earn more As.

**NEGATIVE REINFORCEMENT**
Behavior ends an undesirable event or state.

- Taking aspirin relieves headaches and makes it more likely that aspirin will be taken in the future.

**TWO FORMS OF PUNISHMENT**
Behavior is followed by an undesirable event.

- A toddler burned by a hot stove will be less likely to touch the stove again.

Behavior ends a desirable event or state.

- A boy who loses his TV privileges for pulling his sister's hair will be less likely to pull her hair again.
### Descriptions of Reinforcement and Punishment

- Behaviors that are reinforced are more likely to be repeated.
- Behaviors that are punished are more likely to be reduced.

<table>
<thead>
<tr>
<th>BEHAVIOR that</th>
<th>the CONSEQUENCE</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Increases</td>
<td>Positive reinforcement occurs when a behavior is strengthened by the subsequent addition of a (pleasant) consequence.</td>
<td>Negative reinforcement: A behavior is strengthened by the subsequent removal (or avoidance) of a (unpleasant) consequence.</td>
</tr>
<tr>
<td></td>
<td>Examples:</td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td>• Yelling at a clerk gets them to give you a refund</td>
<td>• Smoking to relieve anxiety</td>
</tr>
<tr>
<td></td>
<td>• Giving dog biscuits for doing a trick</td>
<td>• Skipping class to avoid a bully</td>
</tr>
<tr>
<td>Decreases</td>
<td>Positive punishment (aversive punishment): A behavior is weakened by the subsequent addition of a (aversive) consequence.</td>
<td>Negative punishment (punishment by removal or response cost): A behavior is weakened by the subsequent removal of a (desired) consequence.</td>
</tr>
<tr>
<td></td>
<td>Examples:</td>
<td>Examples:</td>
</tr>
<tr>
<td></td>
<td>• Spanking a dog for getting into the garbage</td>
<td>• Time-out, or the loss of privileges (driver’s license, video game, sitting out a hockey game, etc.) for misbehaving</td>
</tr>
<tr>
<td></td>
<td>• Scolding a coworker for making a mistake</td>
<td></td>
</tr>
</tbody>
</table>
Examples of Negative Reinforcement

**Negative reinforcement:** A situation in which a response is followed by the *removal, avoidance, or escape* of a punishing stimulus, that increases the likelihood that the response will be *repeated* in similar situations.

1. Jane stops telling her husband how she feels to avoid getting yelled at by him.
2. Smoking to relieve anxiety.
3. Smoking helps a person avoid the withdrawal symptoms of nicotine.
4. Using caller ID or the answering machine to answer the phone and avoid telemarketers.
5. Giving into your dog that barks at the dinner table until fed.
6. Small doses of alcohol can initially make people feel good, relaxed and sociable. When alcohol is eliminated from the body, these feelings can be replaced with drowsiness. To avoid these withdrawal effects, people may be motivated to drink more to maintain this initial pleasant buzz.
7. Giving into an argument.
8. Saying "uncle" to stop being beaten.
9. Following prison rules to be released from confinement.
10. Feigning a stomachache to avoid school.
11. Skipping class because you don’t like it.
12. Putting on a seatbelt to stop an irritating buzz.
13. Turning down the volume of a very loud radio.
14. I never call home to talk to my parents because mother always seems to have something bad to say to me.
15. Avoiding spiders or snakes because you don’t like them.
Use Operant Conditioning to Explain Behavior
Use Operant Conditioning to Explain Behavior
Operant Conditioning

What is the behavior?
What is the consequence?

What is the effect of the consequence on behavior?
True words are not beautiful;
Beautiful words are not true.

A good man does not argue;
He who argues is not a good man.

A wise man has no extensive knowledge.
He who has extensive knowledge is not a wise man.

The more he gives to others, the more he possess of his own.

The Way of the sage is to act, but not compete.
**Tao Te Ching (81)**

True words are not beautiful

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Consequence</th>
<th>Effect on Behavior</th>
<th>Effect on Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telling people things that are psychologically threatening them or are unpleasant to hear</td>
<td>A person could yell at them, ignore them, fire them, withhold promotions, affection, etc.</td>
<td>It makes it less likely a person is going to tell someone unpleasant news or information</td>
<td>Punishment</td>
</tr>
</tbody>
</table>

Beautiful words are not true

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<th>Consequence</th>
<th>Effect on Behavior</th>
<th>Effect on Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saying what people want to hear</td>
<td>People complement you</td>
<td>You are more likely to say what people want to hear</td>
<td>Positive reinforcement</td>
</tr>
</tbody>
</table>
Operant Conditioning

In the Spring of 2013, Lindsay Lohan was in a drug rehabilitation facility and complained to her friends that she did not like it because they would not allow her to take her Adderall.

They won’t let me have my Adderall

<table>
<thead>
<tr>
<th>Possible response A</th>
<th>Possible Response B</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are such a good person that you should have your Adderall. The rehabilitation facility is such a horrible place.</td>
<td>Lindsay, you have some problems with drugs and alcohol. Maybe you should spend some time without them.</td>
</tr>
<tr>
<td>Reinforcing consequence or punishing consequence?</td>
<td>Reinforcing consequence or punishing consequence?</td>
</tr>
<tr>
<td>Effect on behavior?</td>
<td>Effect on behavior?</td>
</tr>
</tbody>
</table>
Superstitious Behavior

What are other examples of superstitious behavior?
What were the reinforcers?
Errors in Attribution regarding Operant Conditioning

A pilot trainer praised a trainee for making an unusually excellent landing. The trainee’s subsequent landing was unexpectedly not excellent, but average.

The same pilot trainer scolded a trainee for making an uncharacteristic poor landing. The trainee’s subsequent landing was expectedly better than the poor landing.

Based on operant conditioning, what would the general conclusion be regarding praise (reinforcement) and scolding (punishment)?
Errors in Attribution regarding Operant Conditioning

A pilot trainer praised a trainee for making an unusually excellent landing. The trainee’s subsequent landing was unexpectedly not excellent, but average.

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Based on operant conditioning, what would the general conclusion be regarding praise (reinforcement) and scolding (punishment)?

Why would this conclusion be incorrect?
Problems with Punishment by Application

A common argumentation fallacy called *false dilemma* would be the belief that if you don’t spank a child, you let your children have their own way all the time. You can still set limits, have structure and discipline the family.

The well-known behaviorist B.F. Skinner was strongly opposed to the use of punishments because of several drawbacks.

- Punishments do not promote appropriate or desired behavior to take the place of inappropriate behavior.
- Punishments can make the person who has been punished feel anxious, fearful, resentful and angry.
- The effects of punishments on behavior tend to be temporary.

In addition to these problems, punishments have other problems and dangers associated with them. To effectively use punishments:

- they need to immediately follow the response and,
- they need to be applied consistently.
Examples of the Drawbacks of Punishments

1. Getting a ticket for speeding.
2. Getting yelled at for carrying a microscope with one hand.

Other examples:
- The IRS use punishments and penalties for filing your taxes late. I think that this helps foster a negative image of the IRS and they should reinforce people for paying their taxes early.
- Although it is debatable, U.S. economic sanctions rarely shapes the behavior of other nations. It creates negative feelings towards the U.S. and has unintended consequences of hurting the civilians and not the government of those nations.

Despite the problems with punishments, parents, employers, leaders, nations, etc. frequently use punishments.
- Why do you think so?
- What are specific issues where punishments are used, and the specific problems that are created?
- What are the alternatives?
What are examples where punishments are being used by parents, employers, leaders, nations, etc. to shape behavior and appear to be ineffective and/or has some of the drawbacks of the use of punishments?
What are examples where reinforcements could be used in substitution or in conjunction with punishments to shape behavior?

For example,

- There was a police program that reinforced people for wearing seatbelts instead of not wearing them.
- There was a program in Eugene that rewarding clerks/stores for carding people, rather than punishing them for selling to minors and not carding.
Identify the following examples as being:
(a) positively reinforced
(b) negatively reinforced
(c) positive punished (aversive punishment)
(d) negative punished (punishment by removal)

To identify what type of reinforcement or punishment it is, you should break it down into sub-problems.

Ask yourself four questions:

1. What is the behavior to be modified?

2. What is the consequence?

3. Will the consequence increase or decrease the behavior?

4. Does the consequence "adding" something "good"?

   +

4. Does the consequence "removing" something "bad"?

   -

Increase = reinforcement

Decrease = punishment

4. Does the consequence "adding" something "bad"?

   +

4. Does the consequence "removing" something "good"?

   -
To identify what type of reinforcement or punishment it is, you should break it down into sub-problems.

**Examples:**
- A teacher praises the student for turning their homework on time.
- A teacher stops criticizing the student for their late work when the student turns in their homework on time.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Consequence</th>
<th>Future Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student turns in their homework on time.</td>
<td>The teacher praises the student</td>
<td>The student increasingly turns in homework on time</td>
</tr>
<tr>
<td>Student turns in their homework on time.</td>
<td>The teacher stops criticizing the student</td>
<td>The student increasingly turns in homework on time</td>
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- The teacher verbally reprimands a student for interrupting the teacher.
- The teacher takes away recess privileges for interrupting the teacher.

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<tr>
<th>Behavior</th>
<th>Consequence</th>
<th>Future Behavior</th>
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<tbody>
<tr>
<td>The student interrupts the teacher</td>
<td>The teacher verbally reprimands the student</td>
<td>The student stops interrupting the teacher</td>
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<tr>
<td>The student interrupts the teacher</td>
<td>The teacher takes away recess privileges</td>
<td>The student stops interrupting the teacher.</td>
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Differences Between Classical and Operant Conditioning (see Table 5.1, page 178)

<table>
<thead>
<tr>
<th>Classical Conditioning</th>
<th>Operant Conditioning</th>
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<tr>
<td>In classical conditioning, the organism learns an <em>association between two stimuli</em>—the CS and UCS (eg. food and tone)—that occurs before the behavior (eg. salivation).</td>
<td>In operant conditioning, the organism learns an association between <em>behavior and its consequences</em>. Behavior changes because of events that occur <em>after</em> it.</td>
</tr>
<tr>
<td>Classical conditioning usually deals with reflexive or involuntary responses such as physiological or emotional responses.</td>
<td>Operant conditioning usually deals with voluntary behaviors such as active behaviors that operate on the environment.</td>
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</table>
Although classical and operant conditioning are different processes, many learning situations involve both.
Alternative Strategies to Positive Punishment

1. Reinforce an incompatible behavior.
   • Reinforce an alternative behavior that is both constructive and incompatible with the problem behavior. For example, reinforce people for coming to class instead of skipping. Reinforce sharing, not selfishness. Reinforce wearing a seatbelt, not when a driver isn’t wearing the seatbelt.
   • The procedure works best when it is used very consistently and when potent positive reinforcers are used.

2. Stop reinforcing the problem behavior to begin the process of extinguishing the problem behavior.
   • It is important that when the extinction process is initiated, the problem often temporarily increases. Expect this.
   • Once you begin, it is critical to be consistent in not reinforcing the problem behavior.

3. Reinforce the nonoccurrence of the problem behavior.
   • This strategy requires close monitoring of the individual to ensure that a positive reinforcer is delivered only after the behavior has not occurred. For example, reinforce sales clerks for checking identification when people buy alcohol and cigarettes, instead of punishing them when they don’t.
4. Remove the opportunity to obtain positive reinforcement (eg. negative punishments).
   The reinforcers might be difficult to identify and eliminate.
Enhancing the Effectiveness of Positive Reinforcements

- Remember: positively reinforce the behaviors you want to increase.
- Make sure that the reinforcer is strongly reinforcing the individual whose behavior you are trying to modify.
- The positive reinforcement should be delivered immediately after the preferred behavior occurs.
- The positive reinforcer should initially be given every time the preferred behavior occurs. Once the behavior is well established, gradually reduce the frequency of reinforcement.
- Use a variety of positive reinforcements.
- Capitalize on the Premack principle—desired activities are allowed provided the less desired behavior is completed (you must eat your spinach before you can have dessert, or you must take a bath before you can play your game).
- Encourage the individual to engage in self-reinforcement in the form of pride, sense of accomplishment and feelings of self-control. Remember, reinforcements affect behaviors, not attitudes. When behavior is engaged in for a specific reason (a reinforcer or punishment), attribution for the behavior is external, not internal. (See the overjustification effect).