MAMA AS CANDY AND OTHER CONSEQUENCES
An Introduction to Learning Theory and its Application to Children

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The human animal is one of the most adaptable and successful animals ever to exist. Man's unequaled success is due to his immense capacity to learn from experience. Most of man's behavior is learned, and the richness and variety of human behavior clearly supports the important role played by learning. Not only can new behavior be learned, but previously learned behavior can be modified and unwanted behavior can be "unlearned," i.e., extinguished.

There are two basic types of learning. First, there is S-R or respondent learning. S-R learning is not very important to the purpose of this paper, and one brief example will be sufficient. S-R learning is dependent on reflex responses such as jerking the hand away from a painful contact. If an organism is stuck with a pin (S or stimulus), a reflex action (R or response) will be elicited. Another stimulus such as a bell can be associated with the pin and the organism's response to being stuck, and soon the organism will associate the bell with the painful stimulus and the bell alone will elicit a response.

Second, there is R-S or operant learning. R-S learning depends on a response occurring first and then having some effect on the environment. If the effect is "good," the behavior will be used again. If the effect is "bad," the behavior will not be used again, or if it is used again and the result continues to be "bad," it will be used less and less frequently until finally it is discontinued. It should always be remembered that every action has an effect of some kind, and the effect will either increase or decrease the occurrence of the behavior.

R-S^r is more exact. R is the response or action. S^r is the reinforcing stimulus, or effect of the action. Thus, saying "ay" when presented with the visual stimulus "A" is a response. If a piece of candy is presented to the child when he says "ay," then the candy is the effect of saying "ay." Thus, R = saying "ay," and S^r =candy. More exact still is S^d-R-S^r. In the above description, the letter "A" precedes the response "ay" and is a sign that, if the proper response is made, the result will be candy. "A," the sign, is called a discriminative stimulus (S^d), saying "ay" is the response (R). The receipt of candy is the reinforcer (S^r). If the child likes candy, the chances of his saying "ay" when he sees "A" is increased. The child's behavior has been changed, and on this basis it can be said that learning has taken place.

If one thinks about it, it can be seen that learning like this takes place all the time through random effects in the environment as one interacts with it. However, this is a trial-and-error, hit-and-miss approach to learning and both desirable and undesirable things can be learned in this way. Once the process is understood, one no longer needs to rely on happenstance, but may select what is to be learned or "unlearned" and set about systematically to accomplish it.

S^r, or reinforcement, has three basic forms. First, there is positive reinforcement. Positive reinforcement always increases the occurrence of the response it is associated with. If it doesn't, then it isn't positive reinforcement. In the above case, candy is a positive reinforcement; however, if the child did not like and want candy it would not be positive reinforcement. Positive reinforcement is always something given for a response. Second, there is negative reinforcement. Negative reinforcement also always increases the occurrence of the response it is associated with. If it doesn't, then it isn't negative reinforcement. The main difference between the two is that negative reinforcement is not liked and not wanted and it is not given for a response but

taken away. In other words, by giving the proper response, the effect is to get rid of something not liked. Hence, the correct response is increased to get rid of the negative reinforcement. If, for example, the child does not like to sit and learn letters but discovers that by giving the correct response he can get up and do something else, he is being negatively reinforced. Thus, an unpleasant situation (sitting and learning letters) is ended by giving the correct response. Finally, there is punishment. Punishment is simply the giving of something not liked or taking away something that is liked. Punishment always decreases a response. If it does not decrease the response it is not punishment. If a child likes and wants candy and has some candy or expects to get some candy and you take it away, that is punishment. The most common form of giving something not liked (punishment) is physical pain. Hitting a child is giving something not liked. However, this is very ineffective because the giving of physical pain is related to S-R learning and results in a reflex response, such as escape behavior. Reflex responses caused by physical punishment also involve emotional behavior of an undesirable nature. Another drawback to physical punishment is that it often doesn't get rid of the inappropriate behavior except when the punishing agent (Mama) is around. Last, but not least, the punishing agent becomes associated with pain, which is to be avoided. The child is put into a conflict because Mama becomes someone to be both valued and feared at one and the same time. Mama becomes someone to be both approached and avoided.

In general, a better approach to punishment is to use a logical consequence. For example, if a child deliberately pours milk on the floor or scribbles on the wall, rather than spanking him, make him clean the mess up. He may not be, able to do a perfect job, but he should be made to do as well as he can. If this type of consequence is applied to a behavior, the child should not be allowed to do anything else until the job is done. If a consequence of the type described does not fit a particular situation, then punish him by taking something away, such as a favorite T.V. program, a dessert, etc. Reserve physical punishments for situations where there is a real danger either to the child or someone, else, e.g., running out into the street, or pushing a sibling down the stairs, etc.

Reinforcement is of two types, natural and acquired. Candy is a natural reinforcer. Praise or attention is an acquired reinforcer; that is, acquired reinforcers are learned. Mama saying "good boy" can be reinforcing, but the child must learn that this is desirable. Since the child values and needs Mama, he wants to act in a way that pleases Mama. If he comes to associate Mama being pleased with her saying "good," then he comes to be reinforced by her saying "good." Any behavior or action of the child's which is rewarded by Mama saying "good" will then increase. If Mama is inconsistent in her responses to behavior, the child will be confused about what is pleasing and what is not pleasing to Mama, and his behavior will be erratic or unpredictable. Always be consistent; don't confuse the child! The child must know what to expect and what he has come to expect must happen consistently. Don't say one thing and do something else Don't do one thing one time and then do something different the next time. Mama must be consistent and predictable or the child will be confused.

This does not mean that one should be rigid and inflexible. We all make mistakes, and mistakes need to be corrected. The emphasis should be on keeping mistakes to a minimum by careful planning and attention to what one is trying to accomplish. The determination that a mistake has been made in handling a situation should be arrived at on the basis of the effect our action has

had in relation to what we set out to accomplish. In most cases, a mistake cannot be recognized until some time has passed, and one has observed the effect of an action or procedure. In short, when you make changes in the way you relate to a child and react to his behavior, it is much sounder to do so on the basis of observation than on impulse.

Any given act or substance may be either reinforcing or not reinforcing, depending on the circumstances. Don't assume something is reinforcing. Try it and see. Test it. If a child likes books, then books will be reinforcing; if he doesn't like books, then books will not be reinforcing. The way you find out is see if the child will "work" for the book or whatever. If he does, it is reinforcing; if he doesn't, it isn't reinforcing. Try something else. Assumptions are easy to make but often are wrong. A common example is that of the Mama who gets angry when the child misbehaves. Mama assumes this show of displeasure will decrease the misbehavior. However, the child needs and values Mama's attention and if he isn't getting enough of her attention, then he will do whatever is necessary to get Mama's attention. If misbehaving gets Mama's attention, then that is what he does. Any attention, even anger, is better than nothing. So Mama gets angry when the, child misbehaves, assuming this will decrease the behavior, when in fact it reinforces the behavior and increases it. The more she gets angry, the more the child misbehaves. Making assumptions can lead to a lot of problems. Don't make assumptions! Observe, test and observe - get the facts.

There are several schedules of reinforcement. A schedule is the arrangement between a response and its reinforcement. There are five basic types: CRF (continuous reinforcement), FR (fixed ratio), FI (fixed interval), VR (variable ratio) and VI (variable interval).

1. CRF = one S^r for each R. This a good schedule to use when trying to establish a R (response). Once the B Is established, move to one of the other schedules to maintain it.

2. Fixed-ratio, e.g., FR*3* = one S^r for every three R's.

3. Fixed-interval, e.g., FI5 = one S for the next correct R after five minutes have elapsed.

4. Variable-ratio, e.g., VR8 = one S^r f or every eight R's on the <u>average</u>. This is the strongest schedule.

5. Variable-interval, e.g., VI2 = one S^r for the next correct R after two minutes on the <u>average</u>.

Using schedules (the numerical value assigned is up to you and can be made larger and larger as you develop the schedule) is very important because the response is strengthened by making it necessary to do more for the same reinforcement. Obviously, one must do this in gradual steps, but a lot of R can be obtained for little S^r. Ultimately, you want to reach a point where you can stop the contrived S and the behavior will be maintained because it has become rewarding in itself. For example, in teaching reading one may have to use contrived S's to develop it and get it going, but once the response is well established, reading in itself should be rewarding enough to maintain the behavior.

Teaching behavior does not have to begin with the final form of behavior desired. Shaping is a

term applied to a building-up process. Behavior is best learned in small steps. If there is a big gap between what is and what is desired, then don't go for the end objective but work up to it in small steps. Shape the behavior toward 'the desired end. For example, if you want a child to hang up his clothes instead of throwing them on the floor, use successive approximation. That is, reward any behavior which approximates the desired behavior. Watch the child and, if he throws the clothes across his bed (an approximation which is closer to hanging them up than throwing them on the floor), reinforce this behavior. Do this a few times but let him know more is expected and stop or reduce the reinforcement if he doesn't do better. If next he hangs the clothes neatly on a chair in his room (another approximation but closer to the desired behavior), reinforce this behavior and so on until the desired end behavior (hanging the clothes in the closet) is achieved.

One other thing about the systematic teaching of desired behaviors is that you should only work on one or two things at a time. Don't wear yourself out trying to do too much at once. Systematic teaching takes planning and persistence, in other words time. Don't spread your time too thin by trying to do a lot of things at once.

Extinction is a term applied to the "unlearning" of or stopping of a response. This is accomplished by stopping the reinforcement, maintaining the response and/or reinforcing a more desirable response in some cases. For example, your child wants a cookie and you say "no." The child may have found in the past that if he raises enough fuss he will get the cookie. If you give in and give him the cookie, the cookie is reinforcement for raising a fuss and this behavior will increase, so that finally any time you say "no," a lot of fuss is raised until you give in. You and the child control one another's behavior. The proper thing to do is not give in. Now, the child will still raise a fuss (it always worked before and he won't give up easily). In fact, the behavior may at first actually increase, that is, be more pronounced and last longer. This must just go on (regardless of how unpleasant) until he learns that this behavior doesn't result in getting cookies (or anything else). Remember, if you give in, you will reinforce the behavior, strengthen it as a rewarded behavior, and it will be even more difficult to extinguish (stop).

Preferably, you should offer an alternative; that is, state what conditions cookies may be received under. For example, he may not have cookies until after supper. Once you have told the child and he understands what you have said, don't repeat yourself. Just wait until the conditions have been met and then give him the cookie (reinforcer). If the conditions aren't met, don't give him the cookie and don't try to coax him and don't remind him, just wait. Another example is the child who cries to be held. Being held by Mama is rewarding. It meets an emotional need (affection) or a physical need (security). If the child 'cries all the time to be held, then he has learned that to get what he wants he must cry. When he cries and you pick him up and hold him, you reinforce crying and increase its occurrence.

If he must cry to get your attention, then perhaps he isn't getting enough of your attention under other conditions. Don't reward the crying by picking him up and holding him. At the same time, give him more attention under other conditions which are more desirable. In other words, reinforce some more desirable ways of getting your attention. Sometimes you are faced with unreasonable demands. The child doesn't really need what he is crying for but has just become dependent on you to provide it when in fact he could provide it himself, for example, walking. If

there is no reason why the child can't walk (injury, fatigue, you're moving too fast, etc.) then he is just taking advantage of you. He is being dependent on you for something he can do for himself. You can extinguish this dependent behavior. Stop giving in to his demands and thus reinforcing them. This is best for the child because he must not be allowed to become unnecessarily dependent on you and others, and because there is no point in you being unnecessarily abused. When you stop giving in to (rewarding) his unreasonable demands, expect some fuss to be raised. But don't give in. If you give in, you do more harm than good, and you would have been better off not to have even tried. You must always be consistent! The child must learn what to expect from you with no ifs ands or buts. Once he has had time to test you and discover he can't get what he wants by behaving in a particular way, he will stop. He'll then try something else. Watch out that you don't get outflanked by a change in tactics. Don't reward any behavior you don't consider desirable and appropriate.

There are two other techniques related to extinction. First, reinforce an incompatible response, that is, a response which precludes the undesired behavior. For example, if the child plays with his spoon at meals and you try to correct him, you may be rewarding playing with the spoon by your attention to it. It is better to pay attention (reinforce) to the proper use of the spoon and increase that behavior. One can't play with a spoon and properly use it at the same time. Second, reward low rates of behavior. For example, if your child makes a lot of noise, but you don't deem it desirable to try to eliminate all noise (probably impossible, anyway), reward a low level of noise-making but not a high level.

The effect or consequence of a response has rules which govern its delivery or presentation. Before going into this, it must be emphasized that you have to know specifically what you intend to consequate. Clearly and plainly state what behavior it is you wish to influence. Don't just take off at random with a muddled idea of what you are doing. For example, if you want to influence misbehavior at the dinner table, misbehavior at the dinner table is not clear, nor plainly stated. More clearly stated, misbehavior at the dinner table would be: a) throwing utensils on floor, b) eating with hands, c) spitting food on to the plate or table, d) dipping hands into milk glass. In short, know exactly what it is you are preparing to work with. You must think about what you do, plan it and analyze it if you are to get good results consistently.

Here are the rules of consequation:

1. Use readily available reinforcers whenever possible.

2. Don't reward so much that the child will no longer be affected by the reward.

3. Deliver reward when it is due; don't put it off.

4. If you use tokens (for example, point system) make sure they are really worth something and can be used.

5. Don't assume you know what is rewarding for the child.

6. Don't promise something you can't deliver.

If you feel you must use physical punishment:

1. Be consistent. Punish every time the response occurs without exception.

2. Don't allow escape except under your control.

3. Provide an alternative (means of escape) but only one you choose.

4. The punishment should be as intense as possible. Don't start low and build up.

5. Don't draw it out. Make it short and intense.

6. Don't give both punishment and reward together; don't spank the child and then pick it up and fondle it. If you do this, the punishment will come to be a signal that reward is going to follow.

Many people have the idea that letting a child earn a payoff for his or her behavior is equivalent to a bribe. In general usage, bribe means a payment of some kind given with the intent of perverting judgment or corrupting conduct. The use of reinforcement as an aid in systematically teaching a child either academic or social skills which are needed in order to live and prosper can hardly be considered an attempt to pervert judgment or corrupt conduct. Finally, be fair, firm, consistent and patient.

Suggested Readings:

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