Section 5.1 - Measuring behavior

In most areas of psychology you can’t study something unless you can measure it. The same is true for behavior. Who would start a diet or exercise plan without any way to measure its successes (or failures)?

We need some way to measure behavior once we define it.

Many behaviors are easy to measure in terms of the frequency of occurrence. For example, if I want to start calling my parents more often, I might decide to call every Wednesday and Sunday.

This is easy to monitor – you either make the call or you don’t. This doesn’t account for calls made and no one was home. Technically that is calling. We know people who intentionally call their parents when their parents are at work solely to leave a message and avoid a conversation. Does this count as calling?

If we are serious about changing a behavior, we really have to be specific in defining the target behavior.

What if the target behavior is to have better conversations with my parents when we talk on the phone?

What does it mean to have better conversations? Are better conversations more meaningful? Are they more intellectual? Longer conversations? Do they involve less complaining about relatives, health, or the amount of homework your teachers give you?

How do you go about measuring the meaningfulness of the conversation? You could send mom a survey and ask “On a scale of 1 to 7 how meaningful was our conversation last week? But seriously, was this really what we had in mind when we initially thought of calling our parents more often?

The point is you have to get very specific about the behavior you are planning on changing and the behaviors you plan on reinforcing or punishing. Furthermore, when you go about defining the target behavior you might consider how you might go about measuring it.

Return to one of your New Year’s Resolutions and see if you can now be a bit more precise about the behavior you had wanted to change.
Functions of Behaviors (Revisited)
A variety of behaviors may be emitted which serve the same function. As you may recall, such variants of behaviors are referred to as behavioral classes.

For example, if you want to direct a bartender’s attention toward you, you may emit several different behaviors. Within this behavioral class you might emit a waving behavior, a verbal behavior (e.g., “hey, can I get a drink over here?”), or you may have someone who already has the attention of the bartender order your drink(s) for you.

Within this behavioral class, various behaviors exist, but the important point to remember is that all of the behaviors within this behavioral class are functionally related, they function to get the bartender’s attention.

In the example above, waving, verbal requests, and having someone else order are all behaviors which comprise a functional behavioral class, and therefore all these behaviors have the similar function of acquiring a drink from the bartender.

Generate some examples of behaviors within a behavioral class that serve a similar function in everyday life:

All Behaviors Have a Function. It is important to remember that almost all behaviors have a function. They do something. We will later discuss how to conduct a functional analysis of behavior. Suppose we are eating too much junk food. We might ask ourselves, what function does eating junk food have? Eating junk food may have a variety of functions: 1) Easy to get or prepare (convenience), 2) Some junk food is cheaper than real food, 3) our friends are eating junk food and we want to hang out with them, 4)
It is the only food available, or 5) It is comfort food to eat when stressed out.

You can see that knowing and understanding the function of the behavior will facilitate in modifying the behavior.

**List some behavioral classes and their functions.**
1. 

   
   
2. 

   
   
3. 

   

**What are some functions of driving fast?**
1. 

   
   
2. 

   
   
3. 

   


A variety of physical movements can be emitted in order to produce a certain behavior. For example, when you are opening a door that has no handle and opens inward, you may simply make your hand flat and push the door open with either hand. Or, you might use your shoulder, walking through the door backward, if you are holding objects with your hands at that particular moment.

The point is that while opening a door allows you to pass through the door to wherever it is you might be going, there exists a topography surrounding the door opening behavior, in which a variety of physical pressures/forces exerted upon the door will lead to the larger behavior of opening the door. Obviously, you need to exert enough force to get the door to move, but the manner in which you exert that force (e.g. using your foot, hand, shoulder) all comprise the topography of “door opening behavior.”

When you think of topography think of a topographical map that shows how the surface looks of the map area. Typically, the history of the organism will dictate which topographies of a particular behavior dominate and are thus used more often than others. This is mostly due to the history of reinforcement or punishment associated with that behavior.

Keeping with the door example, if you often use the open palm of your right hand to open an inward door and the door opens, according to behavioral contingencies, this will increase the probability that you will emit that same topography of the behavior used to open the door again.
**Context matters:** The context or situation you are in matters when considering topography of behavior. If you approach a door with a handle/knob, the topography of “door opening behavior” may be different from that of a no-handle open inward door. You may have to use your hand to turn the knob while simultaneously exerting force by pushing inward on the door to get it to open. Similarly, if your hands are full when you approach a no-handle open inward door, you can use your foot to kick it open or your shoulder to lead you through the doorway backward. What if the door handle/knob clearly has slime on it? How will this dictate the topography of “door opening behavior”? What if you are a burglar and don’t want to leave fingerprints – how might you open the door?

These seemingly insignificant aspects of our daily lives may not weigh heavily on our conscious awareness because a variety of behavioral topographies may be carried out through seemingly automatic processes. These seemingly automatic processes, however, may in fact be dictated by an organism’s history of behavioral contingencies. What worked in the past often dictates how people will behave in the future. This applies to even the most minutiae of topographical aspects of behaviors (e.g., how we open a door).

**Student Activity:**

Generate some examples of behavioral topography by listing a behavior and the topography (e.g., pressing door with hand, kicking door with foot) of that behavior (i.e., different physical approaches to emitting the target behavior):

**List a behavior and three topographies it might take on.**

1. ____________________________________________
   ____________________________________________

2. ____________________________________________
   ____________________________________________

3. ____________________________________________
   ____________________________________________
Measuring Behavior (Revisited)

The topography of behavior and the various behavioral classes often dictate how we will measure behavior. If we are interested in modifying a given behavior, then we need to decide whether or not we measure all behaviors which serve the same function (i.e., members of the given behavioral class) or just one specific behavior.

Let’s use the example of a person who is attempting to modify cigarette smoking behavior (i.e., decrease it). Is recording instances of chewing nicotine gum similar to instances in which the person uses a nicotine patch? Both behaviors are part of the same behavioral class (i.e., they serve the same function of providing you with nicotine to reduce cravings for cigarettes).

Are these behaviors emitted in similar contexts (antecedents)? It may be important for the person to keep a record of how often they chew the gum but also in which contexts they chew the gum relative to the frequency and contexts in which they use the patch.

Keeping with the smoking example, if a telemarketer who works on the phone is trying to quit, they may have to use the patch during the day to fight cravings (i.e. because they can’t chew gum while talking to potential customers). Therefore, they might use the gum before work, after work, or on the weekends.

If, however, the gum is more effective at fighting cravings than the patch, the person may feel that they are not getting any closer to attaining their goal, because at break time they head straight to their car for a
cigarette. They may give up on their goal, feeling as though their attempts to decrease the frequency of their smoking behavior is futile due to the failure of the patch to reduce cravings while at work.

It is important to specify which behaviors you want to increase or decrease and how you will increase or decrease those behaviors.

If, as in the example above, the patch and gum are both supposed to decrease cravings, but only the gum serves the function of decreasing cravings, then the patch is not really serving any function, and should be considered an ineffective method of reducing cravings for cigarettes. Notice how we used the term ‘serves the function’ in the previous sentence? The patch serves the function of reducing cravings. Food serves the function of reducing hunger. Junk food serves the function of not having to cook. Driving a car serves the function of getting to school. These all may server other functions as well.

Saving Money Example. Let’s look at another behavior, saving money. Laura saves her change – she says that she bought her Lexis SUV with change that she saved. It probably also helps that Laura is a waitress and gets a lot of tips in the form of change, but nevertheless...

Suppose we wanted to use a behavioral intervention to help save more money to buy something big; maybe a large-screen TV rather than a SUV.

From a behavioral perspective before we begin a behavioral intervention to increase saving money, we need to establish a baseline for the existing behavior. A baseline is a record of the amount of the behavior of interest that we are currently emitting. A baseline is a sort of a starting point. Or it might be considered as a snap shot for a ‘before’ and ‘after’ comparison to see if the intervention is working.

In order to record a baseline, we need to record the behavior. To do this, we need to ask ourselves what is the behavior of saving money? Behaviors need to be observable if they are going to be measured – so what will it look like when you save money?

- Put a penny in the piggy bank?
- Deposit money into savings account?
- Store your refundable beverage cans in the garage?
- Or does saving money mean to use coupons to cut grocery bills?
- Walking rather than spending money on gas driving?

All of these behaviors, though topographically different, are functionally similar. They serve the function of saving money. And how you go about saving money will dictate how you measure it. This is why you need to define the behavior or behaviors (it can be more than one type of saving).
What is the behavior you are going to modify?

What is the function of this behavior?

What are some of the topographies of this behavior?
Now that we have a better understand of how to measure or record a behavior we need to determine how we are going to keep track of when it occurs and under what circumstances it occurs.

The next question is how are document the behavior when it occurs? Many people feel that they can simply think back on the day and record their behaviors at night as though they were writing in a diary. This is a bad idea since memory is not perfect. We can forget and we can get memory interference which can alter
what we recall happened in the day. It is best to record the behavior as soon as possible. The best way is to carry a small note book with you (or something that serves the function of a small note book, text messages to self, small tape recorder etc.) and to keep it where the behavior occurs. For example if you are working on brushing your teeth at night, you can keep the note pad on the bathroom sink. Either way, whatever device or method you use, record the behavior ASAP.

Many behaviors occur under a variety of contexts. When you record the behavior, also record the context in which it occurred. If you failed to emit the behavior when you were supposed to, record the context surround the failure to emit the behavior. This information will come in handy quite often as you progress with your behavioral intervention.

Summary to be provided later.