

Motivation

Discovering Psychology Series

Motivation

1st edition

Lee W. Daffin Jr., Ph.D.

Washington State University

Version 1.00

August 2018

Motivation

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LEE WILLIAM DAFFIN JR.

WASHINGTON STATE UNIVERSITY
PULLMAN, WA



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Preface

Motivation is all about what moves or propels us into action. This force could arise from within and so pushes us, or come from outside and so pulls us. Given enough motivation, or given enough push, pull, or a combination of the two as is often the case, we get something done.

So how does motivation affect us daily? Have you ever been hungry? Curious? Thirsty? In need of closure? Needs may be either biological or psychological in nature. If you are hungry and go to the refrigerator for something to eat, this is an example of a behavior motivated by a deficit which causes an uncomfortable feeling we wish to rid ourselves of. Who likes feeling hungry? Or what if we are driven by power? A need to achieve success? Being with others? These are needs too but are psychological in nature and like their biological counterparts, cause us to act in certain ways to fulfill them. These needs represent the push of motivation. We will discuss psychological needs in **Module 8**.

Personality, similar to needs and so also exemplifying the push of motivation, causes us to behave in a certain way. Whether this behavior is our innate predisposition to *respond* to events in our world in almost predictable ways or involves the *choices* we make concerning what activities to partake in, personality reigns supreme. We will discuss the moderating effect of personality in **Module 7**.

One way to focus our energies is to set goals that we strive to obtain. Our goals or objectives in life can be arranged hierarchically with some goals being higher and more important than others, meaning we work on attaining them first, or some goals being more difficult than others to achieve. It's the really hard things in life that present us with a greater chance for failure but also pride if we finish them. Success in obtaining the goal may be linked to how specific it is such that the more specific, the better our planning can be. Also important are subgoals which can help take complex tasks and break them down into more manageable objectives to achieve. We might even employ incentives to reinforce the motivated behavior (a form of pull motivation). Still, we achieve some goals and fail at others no matter how good our planning. That's life and we all experience it. More on this in **Module 3**.

Whatever propels us to act will cost us in some way - whether it be in time, responses, energy, or lost opportunities. When we set a goal we determine if we have sufficient resources to cover the costs. If we do not, then we may need to find new strategies to meet the goal or demand. For most people, there is a

desire to achieve an end but with the least amount of resource expenditure as possible. For instance, we want to go to the store. When we get to the parking lot we look for a space closest to the front door. Are people happy when they land a space right in front? But what if they have to drive around a bit until a space near the front opens up? In reality, we could invest more time trying to find a way to cut corners than if we had simply just parked and walked. People are driven by least effort! More on this in **Module 5**.

Emotion is a motivator. Consider that when we are faced with a demand in our world we first assess its emotional importance or decide if it is something to worry about. If it is, we develop a plan of action to deal with it. When all else fails we experience stress which is the emotional response to the event. Stress takes a toll on the body (**Module 4**). But how do we display that stress or emotional response for the world to see. Can we measure the response physiologically? Through our facial expressions? Before we even go there, what are emotions? How do mood and affective traits play in here? And finally, it seems all people understand emotion in much the same way. Happiness is happiness in all cultures. Anger is anger. Though we universally interpret emotion similarly we do not *display* emotion in the same way. Culture comes in to play and exerts social influence on us defining when it is okay to make a specific emotional response, and when it is not. More on this in **Module 2**. We might even discover that what is causing us stress is ourselves and so we engage in motivated behavior to change this problem behavior or to establish some new, desirable behavior. This will be the focus of **Module 6**.

With this basis covered, we dive into an investigation of motivation from the perspective of psychology's subfields. Our journey will have us look at some ways motivation appears in religion (**Module 9**), development (**Module 10**), health and wellness (**Module 11**), social psychology (**Module 12**), cognitive psychology (**Module 13**), and physiological psychology (**Module 14**). We will end our discussion of motivation by taking a quick look at some ways we are motivated to engage in behavior with positive outcomes, but also negative outcomes. Look for this in **Module 15**. The book is organized around 5 parts and 15 total modules.

It is my hope that you enjoy this book but know that motivation is a very diverse topic and another author covering exactly the same content could present it in a completely different way. This really depends on the bias of the author and I will approach motivation from a more social and developmental perspective. Also, I like to describe the course for which this book is written as Intro on Drugs. Think back to the introduction to psychology course you took, likely a few years back. Intro can be intimidating for first or second year students because like other introductory courses, it covers a very diverse range of topics just not in a great deal of detail. This course is at minimum equally diverse, and covers the topics in more detail, typical of a 300-400 level course. So be prepared for that.

Lee Daffin

Record of Changes

Edition	As of Date	Changes Made
1.0	August 2018	Initial writing; feedback pending

I
PART I: SETTING THE STAGE

Part I. Setting the Stage



Module 1: Introducing Motivation

Module Overview

Welcome to your course on motivation. As with any textbook, our starting point in Module 1 will be to define terms and establish a foundation for what motivation is. To this end, we will define motivation but also what it means to be unmotivated. Though the latter may seem trivial and unneeded right now, you will soon see just how important it is as it dispels a common misconception. We will discuss internal and external sources of motivated behavior and then examine how time motivates us. No book would be complete without at least some discussion of the history of the subfield and for our purposes, a presentation of some of the organizing theories in the study of motivation. Evolution is a crucial topic in the field of psychology and will be discussed briefly in this module, and then much more throughout the book. Finally, we have to discuss research methods in the subfield of motivation. If you had this in your introductory psychology class, you will be good. There is nothing new to add but it is critical to make sure you remember key research designs and how we employ the scientific method. These will come up numerous times throughout the next 15 modules. I hope you enjoy this book and the first module. If you have questions, please let your instructor know.

Module Outline

- 1.1. What Does It Mean to be Motivated?
- 1.2. Sources of Motivated Behavior
- 1.3. Motivation as a Function of Time
- 1.4. Theories/History of Motivation
- 1.5. Understanding Motivation through Evolution
- 1.6. Researching Motivation

Module Learning Outcomes

- Define motivation and clarify what it means to be unmotivated.
- Differentiate what is meant by the push and pull of motivated behavior.
- Clarify how behavior is motivated by the past, present, and future.

- Discuss the historical context of the exploration of motivation.
 - Identify and describe key theories about motivated behavior.
 - Clarify evolutionary roots of motivated behavior.
 - List and describe key research designs used in psychology and clarify how we employ the scientific method.
-

1.1. WHAT DOES IT MEAN TO BE MOTIVATED?

Section Learning Objectives

- Define motivation.
- List the dimensions of behavior.
- Define instrumental behavior and clarify the role of motives and incentives.
- Clarify how the term, unmotivated, is misused in our society.
- List and define the two types of energy needed for motivated behavior.
- Describe through exemplification, the role played by knowledge and competence in successfully completing motivated behavior.

As you begin to read this book and understand how psychologists study motivation, I would bet you already are pretty familiar with the concept. The fact that you are a student taking a college class, registered at a college or university, and pursuing a Bachelor's degree (major not important) shows that you are a motivated individual. Congratulations. You have a goal in mind, are driven to achieve it, are committed to the cause, have what is necessary to accomplish this endeavor or are willing to learn those skills, and are looking to a better future for yourself and family. This is the essence of motivation, but what exactly does it mean?

The term motivation comes from the Latin, *movere*, meaning *to be moved*. In terms of a definition, **motivation** is defined as being moved into action or engaging in behavior directed to some end. The behavior we engage in can be described by specific dimensions. First, maybe our goal is to engage in a motivated behavior more than once. This is called *frequency*. Or maybe we want to engage in it for a longer period of time. If that is your purpose, you are focused on *duration*. Finally, we might already engage in the behavior often and long enough, but want to go at it harder. In this case, we are focused on *intensity*. A runner may want to run more days a week, for increasingly longer periods of time so as to be able to compete in a marathon, or run a mile in less time. This describes frequency, duration, and

intensity, respectively. Behavior directed in this way is said to be **instrumental**, or done with the intent to fulfill a person's motive. But what's a motive? We hear this term a lot in terms of legal issues. Atkinson (1983) McClelland (1987) state that a **motive** is an individual's natural proclivity to approach things that are positive while avoiding those that are negative. These *things* are called **incentives** and are any reward or aversive stimulus that we come to expect in our environment. If we study hard for our exam we expect an A. If we do not pay our taxes on time, we should anticipate a nasty letter or visit from the Internal Revenue Service (IRS), plus a stiff monetary penalty.

People often talk about being *unmotivated*. What does it mean to be unmotivated then? Can we truly be unmotivated? Simply being **unmotivated** means we are motivated to another end and does not imply an absence of motivation. Can you ever really be unmotivated then? If upon arriving at home after a long day of classes you lay down on your bed instead of making dinner or doing school work, are you unmotivated? No. Though you may not be engaging in the preferable behavior of finishing a paper due in class tomorrow, you are instead engaging in the behavior of getting rest. So you are not motivated for one end, but for another. Still, you *are* motivated.

No matter what the behavior is we wish to engage in and whatever dimension we are concerned about, we need to have certain resources to complete it. These resources include energy, knowledge, and competence. First, in terms of energy, we need both physical and psychological energy. **Physical energy** includes having the glucose necessary to sustain the activity. Think about the dimensions. Working out for 20 minutes requires less energy expenditure (glucose) than does working out for 30 or 45 minutes. Also, if you are running harder today than you did yesterday (say, yesterday you ran at 5mph but today are pushing 5.2mph) you will need more energy to do so. Keep in mind that not only does your legs need energy to function, so does your brain. So we need **psychological energy** which might also be called *self-regulation* or *adaptation energy* (more on this later). If we are stressed out by having to write a major paper in a class, or do an oral presentation, we will need energy to help us better cope and adapt to the situation. If we are in public and upset by an idea another individual is espousing, we may need to bite our tongue so as not to say something potentially offensive to others. As a rule of thumb we might say that the amount of self-regulation needed is a function of how strongly we hold our own attitude.

But is energy enough? Let's say we have sufficient amounts of both types. Does that mean we are guaranteed success when we engage in our motivated behavior? Not necessarily. To lose weight, we have to have to also know how to lose weight. As anyone who has embarked upon this most difficult goal can tell you, weight loss is more than just eating less or working out more. You need to do both, but also manage your stress and get sufficient sleep. This is a bit of an oversimplification of the process of weight loss, but the point is that without knowing that all four behaviors factor in to weight loss, your chances of success are not as high as they could be. So *knowledge* is key.

But maybe you know what you need to such as having the knowledge of how to train for a marathon and possess both types of energy in sufficient quantities. Are you *competent* to complete the task? It may be that you have a bad knee or feet that will not sustain hours of continual pounding. I tried to train for a

marathon about 15 years ago. I had the dedication (psychological energy), proper nutrition (physical energy), and a great plan to slowly build up to the long distance (knowledge), but my plantar fasciitis flared up and made running for a long time impossible (no competence).

KEY POINT - You need all four resources for motivated behavior to be successful. We will discuss all this, and more, throughout the book.

1.2. SOURCES OF MOTIVATED BEHAVIOR

Section Learning Objectives

- Contrast the push and pull of motivation.
- Describe push motivation in terms of needs, the drive reduction model, and motivated behavior.
- Describe pull motivation in terms of incentives.
- Clarify how some motivated behavior that we engage in is actually a product of both push and pull (or just one or the other).

1.2.1. Defining Terms

When we talk about motivation, we also talk about the push and the pull of motivation. What do these terms refer to? First, **push** arises from *within* or is an internal source of motivated behavior. Have you ever used the expression 'I need to push myself to do something?' If so, you are already familiar with the phrase. Second, **pull** arises from *outside* of us. Think about the act of pulling. Can you pull yourself? No. Someone else needs to do the pulling and so if you keep that in mind you will recognize pull as coming from outside. Let's explore each now.

1.2.2. The Push of Motivated Behavior

Think of the *push* of motivation like this:

Need -> Drive -> Motivated Behavior

Some deficiency, or **need**, arises in our body which has to be dealt with. This creates a state of tension which we want to resolve since it is uncomfortable (the **drive**). We engage in *motivated behavior* and if

successful, the need is replenished and the tension/drive ends. Let's look at each of these components closer.

1.2.2.1. Needs. Again, needs are a deficiency in some resource important to the organism. Needs can be divided into two main types: 1) physical/biological including nutrients/food, water, air, temperature, and sex (not discussed in this workshop) and 2) psychological including affiliation, competence, achievement, power, and closure (see Lesson 5).

Maslow (1970) presented needs in the form of a pyramid in which lower level needs had to be satisfied before upper level ones could be. He called it his **hierarchy of needs**. At the bottom of the pyramid are the *physiological needs* such as food, water, temperature, oxygen, and sex. Above this are *safety and security needs* which focus on protection from the elements, being secure in our income, having order and law in society, and stability. Next are *love and belongingness needs* which focus on feeling socially connected to others and being involved in mature relationships. *Esteem needs* are the next highest and focus on how we feel about ourselves, gaining mastery, independence, prestige, and responsibility. Finally, is *self-actualization* which is when we realize our potential, feel fulfilled, seek personal growth, and pursue interests out of intrinsic pleasure and not for extrinsic reasons (more on this in a bit). As you work from bottom to top a person satisfies these needs less and less and self-actualization needs are rarely satisfied. Critics point out that the model cannot explain all human actions such as starving oneself to call attention to social issues and that contrary to what Maslow said, you do not necessarily have to satisfy a lower need before a higher one. As college students, I bet most of you feel pretty good with your esteem needs, and maybe for the online student who typically is older and has a family and spouse, love and belongingness. But what about physiological? Early in the semester you might be good but how are things going with eating healthy, sleeping 8 hours, reducing stress, etc. right before finals? Likely not good meaning that you might have satisfied your esteem needs (third level) but not your physiological needs (first level). Does your pyramid of needs crumble due to this? Could you be satisfying needs at more than one level, and at the same time? Think about this before moving on.

1.2.2.2. Drives. Once a resource has been registered as deficient by the hypothalamus of the central nervous system, a state of tension or uneasiness occurs, called a drive. No one likes the feeling and so the body is motivated to do something about it, or to reduce the drive, called the **drive reduction model**. How do you feel when hungry or thirsty? What if you are having difficulty achieving your goals? Essentially, the essence of this model is to return the body to **homeostasis**, or a state of equilibrium or balance. Think of the body as a thermostat, much like the one in your apartment or dorm room. Let's say you set the thermostat to 69 degrees since you like your house cooler than most people. This is the *desired state*. The thermostat will then measure the temperature in the apartment, called the *actual state*. The two states are compared to one another. If the same no additional action is needed. But what if your house is 73 degrees? The thermostat will trigger actions to lower the temperature. If the actual state is less than the desired state (i.e. your house is 65 degrees), actions will be taken to raise the temperature. In either case, information is fed back to the thermostat (or your brain) letting it know when the discrepancy is 0 or there is no difference between actual and desired states. Once this

occurs, all actions taken to deal with the deficiency are ceased and the body is at equilibrium. This is called the **negative feedback loop**.

Exactly the same thing occurs in your body and we can use temperature as a comparison. If you are warmer than your body prefers, your brain will trigger actions to lower your body temperature such as sweating. If you are colder, your body may trigger shivering. We will deal with this in more detail in Module 14.

1.2.2.3. Motivated behavior. Our discussion began with *needs* or deficiencies we are experiencing which cause *drives* or states of discomfort. Our last piece of the puzzle is *motivated behavior* or any behavior we engage in to reduce the drive. In our example of body temperature, the brain itself can take action to lower or raise the temperature. We can engage in behaviors as well such as drinking hot chocolate or putting on another layer of clothes to raise our body temperature; or to taking off clothes, drinking something cold, or turning on a fan to lower the temperature. Examine Table 1.1. for other examples of how motivated behavior is used to reduce drives and restore our resources to a state of balance, or equilibrium.

Table 1.1. The relationship of needs, drives, and motivated behavior

Need	Drive	Motivated Behavior
Calories	Hunger	Go to a restaurant or to the refrigerator and get food
Pleasure/Reproduction	Sex	Engage in sex
Water	Thirst	Drink a glass of water
Knowledge	Curiosity	Explore your surroundings or talk to people
Affiliation	Belonging	Hanging with friends, getting married, going to a movie

1.2.3. The Pull of Motivated Behavior

What are some ways pull appears in our world? Well, when we think of pull we usually think of *incentives* and most are regarded as good things. Our employer might give gift cards to local restaurants for sales reps who out sell their fellow employees. Our parents may tell us that for each A we earn this semester, we will receive a bonus of \$50.00. Our insurance company grants us discounts for safe driving.

1.2.4. The Interaction of Push-Pull

When it comes down to what motivates behavior, the source may be a combination of internal (push) AND external (pull), or just simply internal OR external. Consider that when it comes to jobs, some people work in their career fields because they truly enjoy what they do (motive). We call this *intrinsic motivation* and later when we discuss psychological needs in Module 8, we might say the person has a high achievement need. Others work simply for the paycheck and prestige their job offers (incentives) and we call this *extrinsic motivation*. Others may obtain genuine pleasure from their job but also enjoy the large paycheck every two weeks. We are all influence by either push (intrinsic motivation) or pull (extrinsic motivation) or a combination of the two.

1.3. MOTIVATION AS A FUNCTION OF TIME

Section Learning Objectives

- Describe how we are motivated by the past.
- Describe how we are motivated by the present.
- Describe how we are motivated by the future.

1.3.1. When We Are Motivated by the Past

The past is of particular interest to psychologists because through one's **personal history**, or the history of their own life, we can come to understand why a person is engaging in the behavior he/she is today (i.e. the present). For instance, an industrial/organizational psychologist may want to know why an employee's productivity has gone down recently. The psychologist might learn that the employee was passed over for a promotion that on paper, s/he was more than qualified for. Due to this, the employee now does not see much point in exerting extra effort and basically is working for a paycheck and nothing more. The individual may even be seeking other employment. In the case of a social psychologist, an explanation for prejudicial ideas or discriminatory behavior of an individual (or group) would be sought out. Maybe the individual experienced institutional racism years ago which has left him/her jaded. Or what if a riot breaks out? What might explain the mob behavior exhibited by numerous individuals? In the case of behavior modification, an applied behavior analyst might try to find the right reinforcer to use to bring about behavior change. Looking at the personal history of the

client can help identify what has worked in the past to influence a treatment plan now, ultimately leading to positive change in the future. Keep in mind too that what works for one person, may not work for another. Just because Jim likes video games and is motivated to complete his homework on time to have extra time to play Call of Duty, does not mean that Alec will be motivated in the same way. Upon closer inspection, we might find that Alec favors racing games and shooters have no effect on his behavior. Both Alec and Jim are motivated in much different ways by how the incentive of video games is presented to them, demonstrating *individual differences*. Finally, a developmental psychologist may want to understand the romantic attachment patterns of a 24-year-old man by looking at his relationship with his parents throughout childhood. There are numerous other examples we will explore beginning in Module 9 but this gives you a general sense of how our personal history can affect our motivated behavior.

Please note that our evolutionary history is another way we are motivated by the past and will be discussed in Section 1.5. For now, **evolutionary history** refers to the shared history of a species and understanding why we act the way we do now. This history can go back thousands of years and so differs from one's personal history which is a much shorter period of time based on the average human life span. The school of thought in psychology called *Functionalism*, which was active in the late 1800s and early 1900s and exists today in the form of applied psychology, asserted that any behavior that is present today exists because it serves an evolutionary advantage to the organism. Think about some behaviors made by most human beings. How might they lead to the survival of the species?

1.3.2. When We Are Motivated by the Present

There are numerous examples I could give for how we are motivated in the here and now, called the present, but will focus on choices, goals, and escape behavior. Throughout the rest of this book we will encounter other examples so be on the lookout for them.

Choices. Life is all about them. Just take a walk down the toilet paper aisle. First, you have to decide between name brand or off brand. Next, extra soft or extra strong. Then there is the size of the roll - regular, double, mega, etc. This can be quite confusing for some but in reality whatever package you purchase, its use will be the same (no need to describe this any more, right? J). All of these options are competing with one another making the choice more difficult.

Goals are another way we are motivated in the present. Now we may have a long term goal of earning our Bachelor's degree which is set in the future, whether near or far depending on where you are in your academic career, but we also have short term goals which may include finishing a paper due this week, studying for an exam, participating in philanthropy for our sorority or fraternity, etc. Related to choice, we may have to decide how to expend our physical and psychological energy on these short term goals since we have a limited amount of both and cannot possibly do everything at once. Students sometimes have to make tough decisions about where to expend energy when preparing for multiple

exams. You might be struggling in statistics but acing social psychology and so if both classes have an exam that week you may need to invest more time in studying for the statistics exam and less for social psychology. Yes, you could take a lower grade than you would prefer in social but since you are performing well already, you can afford to lose a few points, and the extra time invested in statistics earns you a much needed higher grade. This type of strategizing ultimately leads to successfully completing your short term goals of passing the two exams and both classes, and your long term goal of earning a degree in psychology.

Escape behavior is a final example of how we are motivated in the present. After some period of time having not ingested, inhaled, or injected a drug we begin to display withdrawal symptoms. To escape this most unpleasant state in the now, we take in more of the drug. The symptoms go away, reinforcing the behavior of additional or continued drug use when withdrawal symptoms occur. Consider if you are a coffee drinker. What withdrawal symptoms do you experience when you don't have enough caffeine in your system? What do you do about this?

1.3.3. When We Are Motivated by the Future

A stimulus in our environment presents itself such as seeing our significant other. We engage in the behavior of saying we love them to which they reply they love us too. This makes us feel good and so in the future we say we love them when we see them again, for the first time in a while. This simple transaction occurs time and time again throughout our lives and in relation to our significant other, parents, siblings, close friends, etc. and represents an anticipation of future behavior because of the favorable consequences of a past action.

Let's go back to our example for drug addiction. As noted, we can *escape* the ugly withdrawal symptoms by taking in more drug now. What we learn is that in the future, we can *avoid* these symptoms by simply taking more of the drug, called **avoidance behavior** in learning theory.

How might our emotions be affected by anticipation of the future? **Affective forecasting** anticipates how we will feel in the future when a similar situation arises or we complete our goal. In your darkest moments as a student, pause and envision what graduation will be like. How will you feel with your parents, friends, siblings, etc. cheering you on as your name is called and you walk across the stage? Most likely you will feel elation, pride, excitement, and maybe even concern about what you will do with your degree (if you don't have a job now). You are making a prediction about what this event will be like similar to weather forecasters who make predictions about what the weather will like for the upcoming week. Maybe comparing this to a weather forecast is not the best analogy I could make, considering that weather forecasters are often mistaken in their prediction. But guess what, so are we. As Wilson and Gilbert (2005) point out our mispredictions can take several forms. First, we make the **impact bias** in which we overestimate how long or how intense our reaction to a future event will be. This can lead to **focalism** or overestimating to what extent we will think about the event in the future and to

underestimate how other events will affect our thoughts and feelings. Another outcome of the impact bias is not recognizing how readily we might make sense of a novel or unexpected event.

Second, Wilson and Gilbert (2005) say that we experience **immune neglect** or failing to realize the role that defenses such as dissonance reduction, self-serving attributions, positive illusions, etc., play in recovering from negative emotional events when we attempt to predict our future emotional reactions. Consequences of this might include rationalizing a decision when it is difficult to reverse such as in making a major purchase or making economically illogical decisions due to our tendency to weight losses greater than gains. Keep this in mind as we will return to a discussion of bias, heuristics, and losses looming larger than gains later in this book.

1.4. THEORIES/HISTORY OF MOTIVATION

Section Learning Objectives

- Define philosophy and list and describe its four branches.
- Discuss how Socrates, Plato, and Aristotle described motivation.
- Clarify how the Greeks tackled the issue of what is happiness.
- Discuss how Hobbes and Bentham interpreted human motivation.
- Describe the arousal theory of motivation.
- Describe the incentive theory of motivation.
- Describe the cognitive theory of motivation.
- Describe the drive-reduction theory of motivation.
- Describe the instinct theory of motivation.

1.4.1. Motivation and Philosophy

Though psychology was not established as a formal field until the mid to late 1870s by Wilhelm Wundt when he established the first psychological laboratory in Leipzig, Germany, people all throughout time have asked questions in relation to psychological topics. One might speculate that early cave women wondered why cavemen kept clubbing them on the head and dragging them to their caves. Kidding...or not.

Let's discuss philosophy briefly since psychology as a social science arose from it (and physiology too but that is another discussion for a much different class). **Philosophy** can be defined as the love and

pursuit of knowledge and has four major areas: metaphysics, epistemology, logic, and ethics. First, **metaphysics** studies the nature of reality, what exists in the world, what it is like, and how it is ordered. This might not seem like much but this area is the largest of the four and these topics are fairly heavy in nature. It poses such questions as 'Is there a God?', 'Do we have free will?', 'What is a person?', and 'How does one event cause another?'. In terms of a link to psychology, psychologists attempt to understand people in terms of how their mind works and why they did what they did. We also look for universal patterns, or cause and effect relationships which allow us to make predictions about the future. Finally, we might say we investigate the fate vs. free will issue by looking at whether or not everything we are going to be as a person is determined in childhood or can we change later in life.

So what about **epistemology**, defined as the study of knowledge? Key questions philosophers ask concern what is knowledge and how do we know what we know. In terms of psychology, we study learning, knowledge as a cognitive process focusing on elements of knowledge (concepts, propositions, schemas, and mental images), and subconscious and nonconscious thinking.

Third is **logic** which focuses on the structure and nature of arguments. Philosophers investigate what constitutes good or bad reasoning while psychologists study formal and informal reasoning, heuristics and biases, and decision making.

Finally, **ethics** is the study of what we ought to do or what is best to do. Philosophers ask questions centered on what is good, what is right, how should I treat others, and what makes actions or people good. Similarly, psychologists study moral development, the issue of the improper or proper use of punishment, and obedience, all of which will be topics in later modules of this book.

This discussion, though brief, is a very important one to have undertaken. Again, given that psychology arose out of philosophy it should not seem odd to you that we tackle the same issues and in some ways many of the same questions, but with different methods in mind. More on methods later in this module. For now, know that many of the links mentioned above will be addressed in this textbook, though we cannot cover every link possible. This book will give you a survey of how psychologists study motivation proper, basically the focus of Modules 1-8, and then a more focused examination at different subfields of psychology in Modules 9-14.

Let's talk about a few key philosophers and their thoughts on motivation and the types of motivated behavior we might engage in. Our discussion will start with the Greeks and the big three - Socrates, Plato, and Aristotle. In terms of what the goal of life is *Socrates* (469-399 B.C.) said that people should focus on obtaining knowledge and then using it to act morally. But they don't always do this. Sometimes, they act immorally when they clearly know what is right. Socrates suggested this was due to the individual weighing the perceived benefits of doing wrong and finding that they were greater than the costs. In a nutshell, Socrates was interested in what it meant to be human and problems linked to human existence.

Plato (c. 428-347 B.C.) was a student of Socrates and spent much of his career sharing and expanding

the ideas of his mentor. He wrote 36 dialogues and in his most famous, *Republic*, tackles the issue of the soul of a nation and the individual and proposes a three-part hierarchy between reason, emotion, and desire. Aristotle said that reason reigns supreme in the individual and a wise ruler should govern in the same way. It is through wisdom that we can see the true nature of things. He also is known for the Allegory of the Cave in which a prisoner escapes from his captivity in a cave to be blinded by the light of the sun as he exits. The sun represents truth in this allegory. Throughout his various writings, Plato also discussed the nature of the soul and sleep and dreams.

Finally, *Aristotle* (384-322 B.C.) said that information about our world comes from our five senses and that we could trust them to provide an accurate representation of the world. He proposed the laws of association to include the *law of contiguity* or thinking of one thing and then thinking of things that go along with it, *law of similarity* or thinking of one thing and then things similar to it, and *law of frequency* which says the more often we experience things together the more likely we will be to make an association between them. He wrote treatises on the nature of matter and change; existence; human flourishing on individual, familial, and societal levels; what makes for a convincing argument; and even discussed emotions, motivation, happiness, imagination, and dreaming too.

For more on the Socrates, Plato, and Aristotle, check out:

<https://www.history.com>

Psychologists, as you will come to see later in this book, are concerned with the pursuit of happiness and philosophy is no different. Several schools of thought arose from Ancient Greece to deal with this. Most notable is *Epicureanism* which was developed by Epicurus circa 306 B.C. He defined pleasure as the absence of pain in the body and trouble in the soul and said happiness was found by avoiding strong passions, living simply, and not depending on others. For Epicurus, the purpose of ethics is to identify an end and the means with which to achieve it. The chief end is pleasure.

Cynicism said to live as naturally as possible; reject worldly conventions such as money, fame, and power; and avoid too much pleasure. Human flourishing relied on being self-sufficient for the cynic and they felt that social conventions hindered the good life by establishing a code of conduct opposite to nature and reason and compromised freedom. To live in accord with nature, be self-sufficient, and to be free of convention, the cynic promoted *askēsis*, or practice, which led them to embrace hardship, live in poverty, and speak freely about how others lived.

Finally, *Stoicism*, developed by ancient Greek philosopher, Zeno of Citium around 300 B.C., took a deterministic stance and said that we were in control of our mental world and so feelings of

unhappiness were our fault. Stoics said we should not be too positive either as it can lead to over-evaluation of things and people and can lead to unhappiness should they be lost. The stoic says people should practice four cardinal virtues to include courage, justice, wisdom, and temperance and their primary maxim was to 'Live according to nature.'

Moving past the Greeks, we will discuss a few other philosophers. Thomas Hobbes (1588-1679) said that people are inherently greedy, selfish, and aggressive and need a monarch to impose law and order for without it, Hobbes said life would be short lived, solitary, and overall not pleasant, or what he calls the "natural condition of mankind." It is this fear of death that motivates people to make a social contract with a sovereign authority to decide what laws and moral code is best for all. For more on Hobbes and his ideas, please read *The Leviathan* or check out this site: <http://www.iep.utm.edu/hobmoral/#H5>.

Jeremy Bentham (1748-1832) is best known for his principle of utilitarianism. He says human behavior can be explained through two primary motives - pleasure and pain - which determine what we should do and define what good means to the person. Pleasure and pain can be objectively determined since they are states and compared with one another on the basis of their duration, intensity, proximity, fecundity, certainty, and purity. Bentham asserts a "greatest happiness principle" or the "principle of utility" which concerns the usefulness of things or actions and how they promote general happiness. Happiness is defined as the absence of pain and presence of pleasure, and what we are morally obligated to do is any activity that promotes the greatest amount of happiness for the most people. Anything that does not maximize happiness is morally wrong in his system. In sum, his psychological view is that human beings are primarily motivated by pleasure and pain and this philosophy of utilitarianism has implications for law, rights, liberty, and government that are beyond the scope of this book. For an excellent discussion of Bentham's work, please visit: <http://www.iep.utm.edu/bentham/>.

1.4.2. Motivation and Psychology

1.4.2.1. Arousal theory of motivation. Though we will definitely cover numerous psychological principles throughout this book, I want to introduce a few theories of motivation here. First, in terms of the **arousal theory of motivation**, we might wonder if there is a certain level of arousal we perform better at. If our arousal level is low, we might become bored and seek out stimulating activities. If it is too high such as being stressed for a test, we will engage in relaxation techniques such as taking a deep breath, meditating, or tensing and relaxing our muscles. What is key is determining our optimal level of arousal, which in turn affects our performance. How so? According to the *Yerkes-Dodson Law*, performance on easy and difficult tasks are initially enhanced as arousal increases but when it reaches higher levels, the two types of tasks separate. Performance on easy tasks remains favorable while performance on difficult tasks declines, possibly due to activation of the sympathetic nervous system which controls our fight or flight response. So at what level of arousal do we function best? The Yerkes-Dodson law predicts moderate levels of arousal (Yerkes & Dodson, 1908).

1.4.2.2. Incentive theory of motivation. Another important theory of motivation is called the **incentive theory of motivation**. We all like getting rewards whether a compliment for a job well done, a raise in our hourly rate, an A on the test we just took, etc. These external rewards or *incentives* are so strong, we have a theory of motivation built around them. Essentially, when we perform a behavior and are rewarded for it, there is an expectation that in the future when we engage in that same behavior again, our behavior will be the same. So when should we give the reward? Immediately or as close to that as possible. Recall from our earlier discussion of sources of motivation that intrinsic factors can provide a push to achieving a goal. Likewise, internal states can affect the appeal of incentives. If we are full, getting a dessert for earning an A on a test will be less attractive. If we are in a really good mood, depressing music will be less appealing.

1.4.2.3. Cognitive theory of motivation. Another way to think about motivated behavior is that it results from the active processing of information we obtain from the world around us. This is the basis of the **cognitive theory of motivation** and proposes that our expectations guide our behavior to bring about desirable outcomes. For this to happen, we have to gather information about our environment which involves the action of our sensory organs - that is sensed by our ears, eyes, nose, mouth, and skin. We can only detect or sense information available to us and this raw sensory data needs to have meaning attached to it. This is where **perception**, or the act of assigning meaning to raw sensory data, comes in. One's personal history plays a role in this too and is used to make sense of current events by referencing similar past events we have encountered. This history is stored in our memory and accessed as needed. The cognitive theory takes on a few forms which will be discussed later - goal setting theory and attribution theory. The **expectancy-value theory** states that a person's likelihood to successfully complete a goal is dependent on their expectation of success multiplied by how valuable they deem success to be for them. People who are positive about their success believe they have the knowledge and competency needed to complete the task while those who are negative about their success expect failure. In the case of the former, they will be highly motivated to achieve the goal since they expect to succeed and it is important to them.

1.4.2.4. Drive-reduction theory of motivation. As the clock approaches noon each day you likely begin to feel hunger pangs, especially if you skipped breakfast, ate light, or ate much earlier. What do you do? Simply, you go to the refrigerator or a restaurant and obtain sustenance. If this describes your actions, then you just confirmed the **drive-reduction theory of motivation**, or the idea that we are motivated to reduce a drive to restore homeostasis in the body, and was based on the work of behaviorist Clark Leonard Hull (1884-1952). Simply, Hull said that a *need* arises from a deviation from optimal biological conditions and can include hunger, thirst, being cold or hot, or needing social approval. When this deviation occurs, we experience a *drive* or a state of tension, discomfort, or arousal that activates a behavior and with time, restores *homeostasis*, or balance. If we do not have enough glucose in our blood to support digging a ditch in our back yard, our body will produce a grumbling in our stomach or hunger pangs to let us know of the deficit, and then we will be motivated to obtain food to bring us back to balance and end the discomfort caused by the grumbles. And not just that! We also learn from this experience too such that in the future when we experience hunger pangs, we know to go

to the refrigerator to get food. Or if we are cold, we know we can start a fire in the wood stove or get a coat from the hall closet. Hull called this *habit strength* and said that connections are strengthened the more times that reinforcement has occurred. If we are cold and obtaining a jacket makes us warm again (as you will see later this is called negative reinforcement or taking away something aversive which makes a behavior more likely in the future) then in the future we will do the same, and the more times we engage in this process of stimulus → response → positive consequence, the stronger the habit or association will be.

1.4.2.5. Instinct theory of motivation. At times, a person or animal will respond in predictable ways to certain stimuli or as ethologists call it an **instinct**. Instincts are inborn and inherited such as with the phenomena of *imprinting* observed by Konrad Lorenz. He noted that young geese will follow the first moving object they sense after birth. Though this is usually their mother, it may not be in all cases. Human beings do not possess this specific instinct. The **instinct theory of motivation** states that all of our activities, thoughts, and desires are biologically determined or evolutionarily programmed through our genes and this serve as our source of motivation. William McDougall (1871-1938) stated that humans are wired to attend to stimuli that are important to our goals, move toward the goal such as walking to the refrigerator, and finally we have the drive and energy between our perception of a goal and then movement towards it.

On the other hand, Sigmund Freud (1856-1939) believed motivation centered on instinctual impulses reaching consciousness and exerting pressure which, much like strain, is uncomfortable and leads to motivated behavior. Freud identified two types of instincts - 1) life instincts or *Eros* including hunger, thirst, sex, self-preservation and the survival of the species, and all the creative forces that sustain life; and 2) death instincts or *Thanatos* which are destructive forces that can be directed inward as masochism or suicide or outward as hatred and aggression. When these instincts create pressure it is interpreted as pain and its satisfaction or reduction results in pleasure. Our ultimate goal or pleasure is to minimize the excitation/pressure.

Sexual and aggressive instincts tend to be repressed in the unconscious due to societal norms against their expression which could result in some type of punishment or anxiety. Still, they need to be satisfied to reduce the pressure they exert and some ways Freud said this could be done was through humor containing aggressive or sexual themes or dreams. In the case of dreaming, the censorship relaxes during sleep but is not removed and so impulses do enter the content of dreams but are disguised. Despite the disguise, we can still satisfy many of our urges (i.e. dreams with sexual content).

Another perspective on instincts comes from American psychologist, William James (1842-1910) who was influential on the Functionalist school of thought in Psychology. Essentially, functionalism said that any structure or function that existed today, did so because it served an adaptive advantage to the organism, demonstrating the influence of Darwin's theory of evolution on our field. James agreed with this and suggested the existence of 37 instincts. These include parental love, jealousy, sociability, play, curiosity, fear, sympathy, vocalization, and imitation. James begins Chapter 24 of his book, *The Principles of Psychology*, by saying, "INSTINCT is usually defined as the faculty of acting in such a way

as to produce certain ends, without foresight of the ends, and without previous education in the performance.” Instincts aid in self-preservation, defense, or care for eggs and young, according to James.

For more on James and instincts, and for the complete list of instincts, check out:

<http://psychclassics.yorku.ca/James/Principles/prin24.htm>.

Interestingly, the founder of the school of thought called Behaviorism, John B. Watson (1878-1958), initially accepted the idea of instincts and proposed 11 of them associated with behavior. That said, in 1929 he came to reject this notion and instead argued that instincts are socially conditioned responses and in fact, the environment is the cause of all behavior.

Finally, we are sometimes motivated by forces outside conscious awareness or what is called **unconscious motivation**. For Freud (1920), awareness occurs when motives enter *consciousness*, the focus of awareness, from either the *preconscious*, defined as the part of a person’s psyche that contains all thoughts, feelings, memories, and sensations; or the *unconscious*, defined as the part of a person’s psyche not readily available to them. It is here that repressed thoughts and instinctual impulses are kept. For information to pass from the unconscious to the preconscious it must pass a censor or gate keeper of sorts. Any mental excitations that make it to the gate/door and are turned away are said to be **repressed**. Even when mental events are allowed through the gate, they may not be brought into awareness. For that to occur, the eye of the conscious must become aware of them.

1.5. UNDERSTANDING MOTIVATION THROUGH EVOLUTION

Section Learning Objectives

- Describe the thoughts of Darwin’s predecessors.
- Define natural selection.
- Clarify the role Malthus played in Darwin’s work.
- Discuss applications of evolutionary theory.
- Clarify the importance of universal human motives.
- Describe the universal motive of fear.
- Describe what we have learned about the universal appeal music and related human behaviors.

1.5.1. Evolutionary Theory

In 1859 Charles Darwin (1809-1882) published his work, *The Origin of Species*. In it, he described how life had been on earth for a long time and had undergone changes to create new species, though these comments were not first proposed by him. In reality, geologists and paleontologists had been making this case for decades before. For instance, Georges-Louis Leclerc, Comte de Buffon (1707-1788) argued that life developed through spontaneous generation if the conditions were right such as in the hot oceans present on early Earth. Migration to the tropics occurred as the Earth cooled and it was during these movements that life changed. Why was that? The basic mold that contained the organic particles making up each species changed as the organisms moved and different particles were available. He did not propose that radical changes to body plans occurred as a result, but it could explain how similar species lived in geographical areas around the world. Though his ideas did not stand the test of time due to limited evidence naturalists of the time had, they did foreshadow many of the major discoveries to come in the decades that followed.

Jean Baptiste Lamarck (1744-1829) stated that organisms had to change in response to changes in their environment. He explained the long necks of giraffes as having occurred due to the need to reach higher and higher leaves on trees. Lamarck also believed that organisms were driven to more complex forms and that blind primal forces are what led to such evolution, not the benevolent design of God, which was a slap in the face of British naturalists. He finally stated that these modifications were passed on to later generations.

In the 19th century, geologist Charles Lyell (1797-1875) proposed the concept of uniformitarianism which stated that the process which led to changes in the earth is uniform through time. To get to the structure or form the earth has today, it had to pass through stages of development. His ideas represented an application of evolution to evolutionary theory.

Though a more thorough discussion of the ideas before Darwin is possible, we will move to Darwin and his theory of evolution in keeping with the primary focus of this book. It was hinged on the idea of **natural selection** or that individuals in a species show a wide range of variation due to differences in their genes and that those with characteristics better suited to their environment will survive and pass these traits on to successive generations. Any species that do not adapt to their environment will not survive but those that do adapt will evolve over time. Darwin's ideas were greatly influenced by the work of Thomas Malthus (1766-1834) who in 1789 published his book, *An Essay on the Principle of Population*. In it, Malthus stated that a population grows quicker than its ability to feed itself such that the population grows geometrically while the food supply grows arithmetically. Due to this, many people will live in near-starvation conditions and only the most cunning will survive. The same principles related to fertility and starvation that served as laws of human behavior related to other species as well. It was these ideas that Darwin applied to his theory of evolution.

Francis Galton (1822-1911) applied Darwin's ideas to the inheritance of genius. In *Hereditary Genius* (1869) Galton proposed that genius, and the specific type too, occurred too often in families to be explained by the environment alone. As such, the most *fit* individuals in a society could be "encouraged" to breed which would lead to an improvement of inherited traits of the human race over generations. This strategy was called **eugenics**.

Another application of Darwin's ideas to human nature as well as social, political, and economic issues, was **social Darwinism**, or the idea that like plants and animals, humans too compete in a struggle for existence and a survival of the fittest is brought about by natural selection. Advocates state that governments should not regulate the economy or end poverty as it interferes with human competition. They instead believe in a *laissez-faire* economic system that favors competition and self-interest where business and social affairs were concerned. Herbert Spencer (1820-1903) was one such proponent of social Darwinism and believed that people and organizations should be allowed to develop on their own much like plants and animals have to adapt to their environment. Those that do not adapt successfully would die out or become extinct, which leads to an improvement of society. In his book, *Social Statistics* (1850), he asserted that competition would lead to social evolution and produce prosperity and personal liberty greater than during any other time in human history. Though his work began in Britain during the mid-19th century, he quickly gained support in the United States and influenced such men as Andrew Carnegie who hosted him during a visit in 1883.

1.5.2. Universal Human Motives

We defined motives earlier in this module. As a review, a *motive* is an individual's natural proclivity to approach things that are positive while avoiding those that are negative. In this section we take a look at some universal motives and so need to explain what makes a motive universal. Simply, it has to be displayed by people regardless of their culture or country of origin. This is not to say that it cannot be displayed differently, but that it has to be displayed in some way. For a motive to survive it has to be passed from generation to generation through genes and serve some adaptive advantage for the species, in this case, human beings. Examples include facial expressions which we will discuss more in Module 2, setting goals which will be discussed in Module 3, the formation of relationships, the expression of fear, and food preferences, to name a few. Though we will talk about several of these universal motives throughout this book, let's spend a little time on two of them - fear and music.

1.5.2.1. The universal motive of fear. What is fear? The DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th edition) defines *fear* as the emotional response to a real or perceived threat and is associated with autonomic nervous system (ANS) arousal needed for fight or flight due to an immediate danger (APA, 2013). The ANS regulates functioning of blood vessels, glands, and internal organs such as the bladder, stomach, and heart and consists of the of Sympathetic and Parasympathetic nervous systems, the former which is involved when a person is intensely aroused and controls the flight-or-fight instinct. A distinction between fear and anxiety is necessary such that anxiety is the

anticipation of future threat and only involves preparation for future danger and avoidant behaviors (APA, 2013).

Fears can be learned or conditioned too. How so? One of the most famous studies in psychology was conducted by Watson and Rayner (1920). Essentially, they wanted to explore “the possibility of conditioning various types of emotional response(s).” The researchers ran a 9-month-old child, known as Little Albert, through a series of trials in which he was exposed to a white rat to which no response was made outside of curiosity and to a loud sound to which he exhibited fear. On later trials, the rat was presented and followed closely by the loud sound. After several conditioning trials, the child responded with fear to the mere presence of the white rat.

As fears can be learned, so too they can be unlearned. Considered the follow-up to Watson and Rayner (1920), Jones (1924) wanted to see if a child who learned to be afraid of white rabbits could be conditioned to become unafraid of them. Simply, she placed the child in one end of a room and then brought in the rabbit. The rabbit was far enough away so as to not cause distress. Then, Jones gave the child some pleasant food (i.e., something sweet such as cookies). The procedure continued with the rabbit being brought in a bit closer each time to eventually the child did not respond with distress to the rabbit. This process is called **counterconditioning**, or the reversal of previous learning.

Fears serve an adaptive advantage as they lead to greater survival of the species since it is activated in aversive contexts, is automatic, is mostly “impenetrable to cognitive control,” and originates in a specific area of the brain called the amygdala (Mineka & Ohman, 2002; Ohman & Mineka, 2001). It should not be surprising that threatening stimuli (snake or spider) capture our attention quicker than fear-irrelevant stimuli such as a flower or mushroom (Fox, Russo, & Dutton, 2002; Ohman, Flykt, & Esteves, 2001; Fox, Lester, Russo, Bowles, Pichler, & Dutton, 2000). We are also prepared to learn some associations over others, or that we are **biologically prepared** to do so, a term coined by Martin Seligman (1971). For instance, we are more likely to become afraid of that snake than we are of a butterfly. Why? The snake is more likely to kill us than a butterfly is.

1.5.2.2. The universal appeal of music, mother, and native language. DeCasper and Spence (1986) recruited 33 healthy women who were about 7.5 months pregnant. The women were familiarized with three short children’s stories and then tape recorded each. Once done, they were assigned one of the stories as her target story so that she did not bias the recording of their target through such means as exaggerated intonation. The women read the target story aloud two times each day when they felt the fetus was awake, and in a quiet environment so that no other sounds could be heard. The stories included *The King, the Mice, and the Cheese* by Gurney and Gurney, the first 28 paragraphs of *The Cat in the Hat* by Dr. Seuss, and *The Dog in the Fog*. All three stories were approximately the same length and contained equal sized vocabularies. During the postnatal phase, sixteen of the 33 fetal subjects were tested as newborns. It was determined that they had been exposed to the target story approximately 67 times or for 3.5 hours total prenatally. During postnatal testing the newborns were placed in a quiet, dimly lit room where they lay supine and listened to a tape recording of the target story. They were tested as to whether or not the sounds of the recited passage were more reinforcing

than a novel passage. Results showed that as hypothesized, the target story (previously recited) was more reinforcing and that this was independent of who recited the story. The authors concluded that “the target stories were the more effective reinforcers, that is, were preferred, because the infants had heard them before birth” (pg. 143).

Relatedly, Moon, Cooper, and Fifer (1993) showed that two-day-old infants preferred their native language over a foreign one while other lines of research have shown that newborns prefer their mother’s voice over that of another female (Fernald, 1985; DeCapser and Fifer, 1980). Not just that, neonates or newborns, prefer the mother’s face as well (Bushneil, Sai, & Mullin, 1989)! Could these findings – the ability to hear in the womb, a preference for one’s own language, and the recognition of our mother – serve an adaptive advantage for human beings?

Now to the issue of music preference. Nakata and Trehub (2004) presented six month old infants with audiovisual episodes of their mother talking or singing to them. Results showed that between the two forms of infant-directed communication, babies preferred signing over talking which may also positively affect emotional coordination between mother and child. Shannon (2006) found infant directed signing to be as effective in sustaining attention as book reading or toy play with mothers. In terms of consonant (harmonious) and dissonant (inharmonious) music, research shows that babies prefer consonant sounds (Zentner & Kagan, 1998; Trainor & Heinmiller, 1998), and that same is true in infant chimpanzees (Sugimoto et al., 2010), suggesting that the preference for consonance is not unique to humans.

In Module 2 we will discuss the universal recognition of basic human emotions through facial expressions. Related to our current discussion, the emotions of happy, sad, and scared/fearful have been found to be universally recognized in music. Fritz et al. (2009) conducted a cross-cultural study involving Western participants and participants from a native African population (the Mafa). Both groups were naïve to the music of the other group. The results showed that the Mafas recognized the three emotions in Western music excerpts and that consonance is preferred and universally influences the perception of pleasantness in music.

1.6. RESEARCHING MOTIVATION

Section Learning Objectives

- Define scientific method.
- Outline and describe the steps of the scientific method, defining all key terms.
- Identify and clarify the importance of, the three cardinal features of science.

- List the five main research methods used in psychology.
- Describe observational research, listing its advantages and disadvantages.
- Describe case study research, listing its advantages and disadvantages.
- Describe survey research, listing its advantages and disadvantages.
- Describe correlational research, listing its advantages and disadvantages.
- Describe experimental research, listing its advantages and disadvantages.
- State the utility and need for multimethod research.

1.6.1. The Scientific Method

Psychology is the scientific study of behavior and mental processes. We will spend quite a lot of time on the behavior and mental processes part and how motivation relates to them, but before we proceed, it is prudent to elaborate more on what makes psychology scientific. In fact, it is safe to say that most people not within our discipline or a sister science, would be surprised to learn that psychology utilizes the scientific method at all.

As a starting point, we should expand on what the scientific method is.

The **scientific method** is a systematic method for gathering knowledge about the world around us.

The key word here is that it is systematic meaning there is a set way to use it. What is that way? Well, depending on what source you look at it can include a varying number of steps. I like to use the following:

Table 1.2: The Steps of the Scientific Method

Step	Name	Description
0	Ask questions and be willing to wonder.	To study the world around us you have to wonder about it. This inquisitive nature is the hallmark of critical thinking , or our ability to assess claims made by others and make objective judgments that are independent of emotion and anecdote and based on hard evidence, and required to be a scientist.
1	Generate a research question or identify a problem to investigate.	Through our wonderment about the world around us and why events occur as they do, we begin to ask questions that require further investigation to arrive at an answer. This investigation usually starts with a literature review , or when we conduct a literature search through our university library or a search engine such as Google Scholar to see what questions have been investigated already and what answers have been found, so that we can identify gaps or holes in this body of work.
2	Attempt to explain the phenomena we wish to study.	We now attempt to formulate an explanation of why the event occurs as it does. This systematic explanation of a phenomenon is a theory and our specific, testable prediction is the hypothesis . We will know if our theory is correct because we have formulated a hypothesis which we can now test.
3	Test the hypothesis.	It goes without saying that if we cannot test our hypothesis, then we cannot show whether our prediction is correct or not. Our plan of action of how we will go about testing the hypothesis is called our research design . In the planning stage, we will select the appropriate research method to answer our question/test our hypothesis.

4	Interpret the results.	<p>With our research study done, we now examine the data to see if the pattern we predicted exists. We need to see if a cause and effect statement can be made, assuming our method allows for this inference. More on this in Section 2.3. For now, it is important to know that the statistics we use take on two forms. First, there are descriptive statistics which provide a means of summarizing or describing data, and presenting the data in a usable form. You likely have heard of the mean or average, median, and mode. Along with standard deviation and variance, these are ways to describe our data. Second, there are inferential statistics which allow for the analysis of two or more sets of numerical data to determine the <i>statistical significance</i> of the results. Significance is an indication of how confident we are that our results are due to our manipulation or design and not chance.</p>
5	Draw conclusions carefully.	<p>We need to accurately interpret our results and not overstate our findings. To do this, we need to be aware of our biases and avoid emotional reasoning so that they do not cloud our judgment. How so? In our effort to stop a child from engaging in self-injurious behavior that could cause substantial harm or even death, we might overstate the success of our treatment method.</p>
6	Communicate our findings to the larger scientific community.	<p>Once we have decided on whether our hypothesis is correct or not, we need to share this information with others so that they might comment critically on our methodology, statistical analyses, and conclusions. Sharing also allows for replication or repeating the study to confirm its results. Communication is accomplished via scientific journals, conferences, or newsletters.</p>

Science has at its root three *cardinal features* that we will see play out time and time again throughout this book. They are:

1. *Observation* - In order to know about the world around us we have to be able to see it firsthand. When an individual is afflicted by a mental disorder, we can see it through the overt behavior they make. An individual with depression may be motivated to withdraw from activities he/she enjoys, those with social anxiety disorder will avoid social situations, people with schizophrenia may express concern over being watched by the government, and individuals with dependent personality disorder may wait to make any decision in life until trusted others tell them what to do. In these examples, and numerous others we can suggest, the behaviors that lead us to a diagnosis of a specific disorder can easily be observed by the clinician, the patient, and/or family and friends.
2. *Experimentation* - To be able to make *causal* or cause and effect statements, we must isolate variables. We have to manipulate one variable and see the effect of doing so on another variable. Let's say we want to know if a new treatment for bipolar disorder is as effective as existing treatments...or more importantly, better. We could design a study with three groups of bipolar patients. One group would receive no treatment and serve as a control group. A second group would receive an existing and proven treatment, and would also be considered a control group. Finally, the third group would receive the new treatment and be the experimental group. What we are manipulating is what treatment the groups get - no treatment, the older treatment, and the newer treatment. The first two groups serve as controls since we already know what to expect from their results. There should be no change in bipolar disorder symptoms in the no treatment group, a general reduction in symptoms for the older treatment group, and the same or better performance for the newer treatment group. As long as patients in the newer treatment group don't perform worse than their older treatment counterparts, we can say the new drug is a success. You might wonder why we would get excited about the performance of the new drug being the same as the old drug. Does it really offer any added benefit? In terms of a reduction of symptoms, maybe not, but it could cost less money than the older drug and so that would be of value to patients.
3. *Measurement* - How do we know that the new drug has worked? Simply, we can measure the person's bipolar disorders symptoms before any treatment was implemented, and then again once the treatment has ran its course. This pre-post test design is typical in drug studies.

1.6.2. Research Designs Used in Psychology

Step 3 called on the scientist to test his or her hypothesis. Psychology as a discipline uses five main research designs. They are:

1.6.2.1. Naturalistic and laboratory observation. In terms of **naturalistic observation**, the scientist studies human or animal behavior in its natural environment which could include the home, school, or a forest. The researcher counts, measures, and rates behavior in a systematic way and at times uses multiple judges to ensure accuracy in how the behavior is being measured. The advantage of this method is that you see behavior as it occurs and it is not tainted by the experimenter. The disadvantage is that it could take a long time for the behavior to occur and if the researcher is detected

then this may influence the behavior of those being observed. **Laboratory observation** involves observing people or animals in a laboratory setting. The researcher might want to know more about parent-child interactions and so brings a mother and her child into the lab to engage in preplanned tasks such as playing with toys, eating a meal, or the mother leaving the room for a short period of time. The advantage of this method over naturalistic method is that the experimenter can use sophisticated equipment and videotape the session to examine it at a later time. The problem is that since the subjects know the experimenter is watching them, their behavior could become artificial.

1.6.2.2. Case studies. Psychology can also utilize a detailed description of one person or a small group based on careful observation. This was the approach the founder of psychoanalysis, Sigmund Freud, took to develop his theories. The advantage of this method is that you arrive at a rich description of the behavior being investigated but the disadvantage is that what you are learning may be unrepresentative of the larger population and so lacks *generalizability*. Again, bear in mind that you are studying one person or a very small group. Can you possibly make conclusions about all people from just one or even five or ten? The other issue is that the case study is subject to the bias of the researcher in terms of what is included in the final write up and what is left out. Despite these limitations, case studies can lead us to novel ideas about the cause of motivated behavior.

1.6.2.3. Surveys/Self-Report data. This is a questionnaire consisting of at least one scale with some number of questions which assess a psychological construct of interest such as parenting style, depression, locus of control, or sensation seeking behavior. It may be administered by paper and pencil or computer. Surveys allow for the collection of large amounts of data quickly but the actual survey could be tedious for the participant and **social desirability**, when a participant answers questions dishonestly so that he/she is seen in a more favorable light, could be an issue. For instance, if you are asking high school students about their sexual activity they may not give genuine answers for fear that their parents will find out. You could alternatively gather this information via an interview in a structured or unstructured fashion.

1.6.2.4. Correlational research. This research method examines the relationship between two variables or two groups of variables. A numerical measure of the strength of this relationship is derived, called the *correlation coefficient*, and can range from -1.00, a perfect inverse relationship meaning that as one variable goes up the other goes down, to 0 or no relationship at all, to +1.00 or a perfect relationship in which as one variable goes up or down so does the other. In terms of a negative correlation we might say that as a parent becomes more rigid, controlling, and cold, the attachment of the child to parent goes down. In contrast, as a parent becomes warmer, more loving, and provides structure, the child becomes more attached. The advantage of correlational research is that you can correlate anything. The disadvantage is that you can correlate anything. Variables that really do not have any relationship to one another could be viewed as related. Yes. This is both an advantage and a disadvantage. For instance, we might correlate instances of making peanut butter and jelly sandwiches with someone we are attracted to sitting near us at lunch. Are the two related? Not likely, unless you make a really good PB&J but then the person is probably only interested in you for food and not

companionship. J The main issue here is that correlation *does not* allow you to make a causal statement.

1.6.2.5. Experiments. This is a controlled test of a hypothesis in which a researcher manipulates one variable and measures its effect on another variable. The variable that is manipulated is called the **independent variable (IV)** and the one that is measured is called the **dependent variable (DV)**. In the example above, the treatment for bipolar disorder was the IV while the actual intensity or number of symptoms serves as the DV. A common feature of experiments is to have a **control group** that does not receive the treatment or is not manipulated and an **experimental group** that does receive the treatment or manipulation. If the experiment includes **random assignment** participants have an equal chance of being placed in the control or experimental group. The control group allows the researcher (or teacher) to make a *comparison* to the experimental group, make our causal statement possible, and stronger. In our experiment, the new treatment should show a marked reduction in the intensity of bipolar symptoms compared to the group receiving no treatment, and perform either at the same level as, or better than, the older treatment. This would be the hypothesis we begin the experiment with.

There are times when we begin a drug study and to ensure participant expectations have no effect on the final results through giving the researcher what he/she is looking for (in our example, symptoms improve whether or not a treatment is given or not), we use what is called a *placebo*, or a sugar pill made to look exactly like the pill given to the experimental group. This way, participants all are given something, but cannot figure out what exactly it is. You might say this keeps them honest and allows the results to speak for themselves.

1.6.2.6. Multi-method research. As you have seen above, no single method alone is perfect. All have their strengths and limitations. As such, for the psychologist to provide the most clear picture of what is affecting motivated behavior and the mental processes underlying it, several of these approaches are typically employed at different stages of the research study. This is called **multi-method research**.

As we tackle the many ways we engage in motivated behavior throughout this book, you will see all of these designs discussed at some point. In fact, you might have already seen a few mentioned in Sections 1.1 to 1.5.

Module Recap

In this first module we defined motivation as when we are moved into action. People loosely and incorrectly use the expression, 'I am unmotivated,' to indicate a complete lack of motivation when what

they really mean is that they are motivated but toward other ends. Instead of studying for an exam, students may want to surf the internet or hang with friends. To avoid yard work, a husband may decide to play with his kids. When we do act, we are under the influence of both internal (push) and external (pull) forces. In the case of push, deficiencies in a required resource cause a need. Our brain creates a drive or state of tension which produces motivated behavior. So we take a drink (behavior) when we are parched (drive) to restore water to our system (need). In the case of pull, incentives are used to motivate our behavior as say your parents offering to pay you \$50 for each 'A' earned in your classes.

We can think of why we engage in motivated behavior from a few different perspectives. First, people are driven to satisfy their needs, whether they are more biological in nature or psychological. Our needs are arranged in a hierarchy and those at the base of the pyramid need to be met before higher level needs can be. If this does not happen, the pyramid, like a house, collapses in on itself...or does it? Next, we may be inclined to simply reduce the tension or drive much like how a thermostat detects how hot or cold it is in our house and takes steps to bring it to our desired temperature. Or maybe we are motivated to behave at a level of arousal that maximizes performance.

We also saw how time - past, present, and future - motivates our behavior. The behavior we engage in has at its root evolution and the survival of the species. Several types of motivated behaviors are expressed by all people and so are universal in nature. We might investigate these behaviors, and others, using any of the research designs mentioned in this module and by using the scientific method.

I hope you enjoyed the first module in this book. We will finish up Part 1 by discussing the complementary piece to motivation - emotion. After this, we will tackle the important topics of goal motivation, stress and coping, and the economics of motivated behavior. This leads us to a discussion of behavior change and how it can motivate us in important ways. More on Parts III to V later.

Lee Daffin

Module 2: Emotion

Module Overview

In Module 1, I set a foundation for what motivation is so that the discussions to come are clearer for the reader - i.e. you! In Module 2, I will do the same but in relation to emotion. Interestingly, many introductory books and texts on motivation often place this discussion near the end of the book or chapter but emotion and mood are discussed at various times throughout the earlier chapters. Students lack any real understanding of the significance of emotion and how it serves a motivating force in their lives, due solely to a misplaced chapter/content by the author(s), which may mean that the point of those earlier discussions is lost on them. I decided to present this information early in my text so that as you read the rest of the book, you have the necessary foundation. For instance, after Module 2, emotion and mood will come up again as we discuss goals (Module 3), stress and coping (Module 4), behavioral change (Module 6), personality (Module 7), religion (Module 9), health and wellness (Module 11), group processes (Module 12), and cognition (Module 13). Realistically, emotion will come up in every module somewhere but these were the modules I could quickly come up with examples for in my mind. I hope you enjoy this discussion and learn something you did not know before.

Module Outline

- 2.1. Types of Affect
- 2.2. Characteristics of Emotion
- 2.3. The Physiology of Emotion
- 2.4. Expressing Emotion
- 2.5. Theories of Emotion
- 2.6. Is Emotion Adaptive?
- 2.7. Disorders of Mood
- 2.8. Emotional Intelligence

Module Learning Outcomes

- Differentiate what affective states, moods, and emotions are.
- Classify emotions through its dimensions.
- Identify physiological processes and the role of the nervous system in the experience of emotion.
- Clarify whether nature or nurture affect the expression of emotion.

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- Describe research ascertaining the validity of the facial-feedback hypothesis and the existence of microexpressions.
 - Compare and contrast the three main theories of emotion.
 - Clarify how positive emotion can be adaptive.
 - Identify and explain the significance of disorders of mood.
 - Clarify the significance of emotional intelligence (EI).
-

2.1. TYPES OF AFFECT

Section Learning Objectives

- List, define, differentiate, and exemplify affective states, mood, and emotions.
- Define perceptual set.
- Clarify the three parts of an emotion according to Watson.

In our everyday parlance, we use the term *emotion* for anything related to our affective state but this is an overextension of the term. What we mean by emotion may not actually be an emotion, so to begin our discussion, let's distinguish emotion from two other types of affect – affective traits and moods.

First, **affective traits** are stable predispositions for how we respond to our world and lead us to react to events we experience in specific ways. They are stable and so can last a lifetime once established and include optimism/pessimism or neuroticism, to name a few.

Second, **mood** is an affective state that fluctuates over time. In terms of intensity, it is relatively mild and can last for hours, days, or weeks. We might describe our mood as being content, so-so, or irritable. Mood moderates how we perceive the events occurring around us. Moods can vary by season as in the example of Seasonal Affective Disorder or SAD for short. Also, you likely have heard about mood disorders such as depression or bipolar disorder. I will overview such mental disorders later in this module.

Finally, **emotions** are our immediate response to a situation that is personally meaningful. It is very short in terms of duration but intense. Examples might be saying we are angry, elated, or afraid. We will spend much of this chapter covering emotions, but before we move on, let's tackle an example of how the three affect us on a daily basis.

Let's say our boss tells us that the company is downsizing and though that is bad, we are being kept on. To compensate for the loss of other employees, we will have to learn a new skill set. Oh yeah. We are not being paid more to do it. If our affective traits generally include optimism and being *hardy*, or being able to face change with confidence, and our mood is positive, we might still view the extra training negatively but are only a bit upset. We might see it as a challenge and another line we can add to our resume. Or maybe being that we are in a good mood we have a neutral response to it and just sign up for the training. Of course, we could see it as a good thing from the start. No matter the scenario, our emotional response could be slightly negative, neutral, or positive given our generally optimistic state and being in a good mood. It's possible our motivation for working (intrinsic vs. extrinsic) will be a moderator here.

Now what if we are still optimistic and hardy, but in a bad mood? We might have a stronger negative reaction than we did when in a good mood, assuming we had one, but with some time come to see it in much the same way - with optimism and as a challenge. Our bad mood does likely cause us to react in an uncharacteristic way initially but with time our stable traits re-emerge.

Let's say now that we are pessimistic and easily overwhelmed in terms of our affective traits, and in a good mood currently. We would be upset about the training and see it as unfair. The stressor could lead to frustration, feeble attempts at self-regulation resulting in our communication of a less than favorable attitude toward our boss at work and maybe online (i.e. Facebook). Though in a good mood when told about the training this likely shifts to a bad mood given our generally negative disposition. The response may not be as strong since we were in a positive mood when told.

Finally, we are pessimistic and in a bad mood. We are VERY upset about the training and would likely be open about it at work. Of course, this could have serious implications for any future promotions and/or raise questions about our job security. Bad mood and negative disposition means we are very unhappy and willing to share that with all. Misery loves company.

So we entered the scenario with specific, stable predispositions as to how we react to events in our world and what decisions we make in terms of the activities we partake in. Despite this, a good or bad mood can *initially* cause us to react to the stressor in a very uncharacteristic way (i.e. our emotional response). Luckily, the emotion is brief and acute, affected by the mood we are in, and once over and we have had time to reassess the situation, called **reappraisal**, we may decide our boss ordering us to take on additional responsibilities is not as bad as first thought (assuming we had positive affective traits underlying our behavior from the start). If we had a negative predisposition no amount of reappraisal may help.

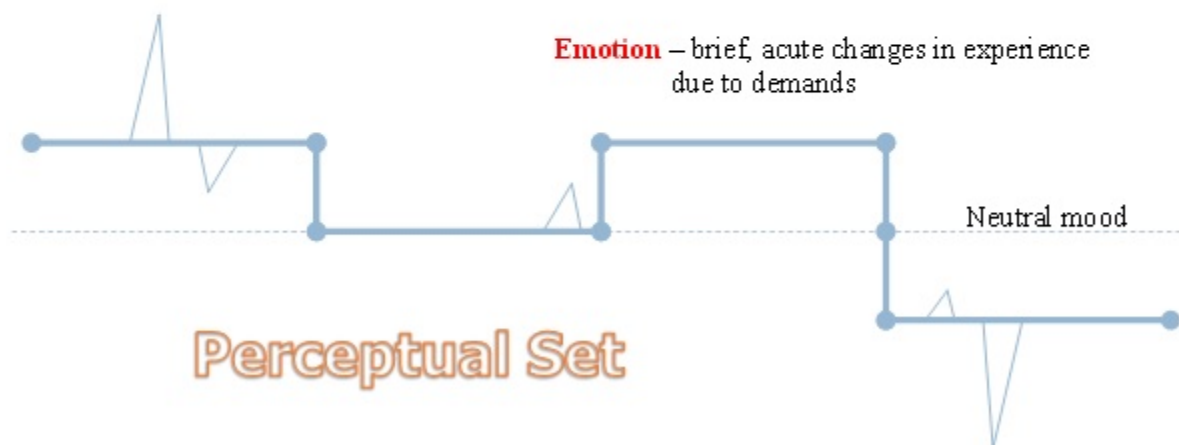
There is one more thing to think about. Consider that though John may be in a good mood and an optimistic person, the way John's boss communicated the demand to him (i.e. in order to keep his job he will have to learn a new skill set and will not be paid extra to do it) may have affected his reaction too. This very well could be considered an example of pull motivation!

Figure 2.1. Examining the Interaction of Affective Traits, Mood, and Emotion

Affective Traits – your stable predispositions in terms of how you respond to your world – likely learned in childhood
i.e. Optimist vs. Pessimist

Despite this, we are affected by **Mood**.

Moods last for a period of time – hours, days, maybe weeks
So, we may be generally optimistic but something has put us in a bad mood. Or we are pessimistic but can be in good moods too.



Notice in Figure 2.1. the term **perceptual set** which is defined as the influence of our beliefs, attitudes, biases, stereotypes, and ... well, mood, on how we perceive and respond to events in our world! We will see evidence of this all throughout the course. The line across the center of the figure represents a neutral mood and so above it is a good mood and below it a bad one. The spikes represent our emotional response and as you see can vary quite a lot. A positive emotion would be a spike above the line while a negative emotion is below the line. On the far left notice that we are in a good mood and so our positive emotional response is heightened. The negative emotion we experience to an event is not as extreme as the example on the far right when we are in a bad mood. Also, the positive emotion is not as strong on the far right because we are in a bad mood. In the neutral example in the middle, our positive reaction is mild to moderate since we are sort of middle of the road with our mood. This is just one way to view the three types of affect and their effect on our daily lives.

Before we move on, I want to be clear you understand the difference mood and emotion. We will discuss both quite a lot throughout this module (and book), and affective traits sound a lot like emotional personality traits which will be discussed also (Module 7). But for our purposes, mood and emotion are what we are most familiar with.

John B. Watson said that emotions have three parts:

- The objective, stimulus situation
- Overt bodily response
- Internal, physiological changes

Essentially, we have to sense (through sensation and our eyes, ears, nose, tongue, or skin - the sensory organs) an event in our environment (the objective, stimulus situation) which leads to a response which others can see (what makes the bodily response overt or observable). What governs our sensation of the stimulus and eventual response are actions of our central and peripheral nervous systems, endocrine system, muscular and skeletal systems, etc. (the internal, physiological changes). Think back to your introductory psychology course or courses you took later where you discussed sensation, neural impulse, brain structures and their functions, perceptual processes, and the sending of commands to various parts/systems of the body. This process (i.e. communication in the nervous system) is what Watson was essentially capturing. The response we make is automatic and a result of our perception of the environmental stimuli. We can view our emotion, or someone else's, from facial expressions, tone, gestures we might make, and other nonverbal cues such as body language.

Later in this module, mood will be discussed in more detail. If you are interested in clinical psychology, then you are likely familiar with mood disorders! Until then, moving on.

2.2. CHARACTERISTICS OF EMOTIONS

Section Learning Objectives

- Clarify how emotions are temporary.
- Clarify how emotions are positive and negative.
- Describe the intensity of an emotion.
- Explain how emotion is linked to appraisal.
- Clarify and exemplify how emotions change one's thought processes.

Now that we have a working knowledge of what emotions are, and how they differ from affective states and moods, let's dive into what the characteristics of emotions are. Emotions consist of five main characteristics - they are temporary, positive or negative, vary in intensity, are based on one's appraisal of the situation, and alter our thoughts processes.

2.2.1. Temporary

As we already discussed, compared to affective states and mood, emotions last for a very short period of time since they are a response to some actively occurring, or recently occurred, environmental event. They have a clear beginning and end, as in our example in Section 2.1. Our emotional response to having to learn new skills for our job happened as soon as we received the news and then ended shortly thereafter, allowing us time to reappraise the situation and see if it was as bad as we thought it was.

2.2.2. Positive or Negative

It should be no surprise to find out that we can experience positive or negative emotions. Winning the state title in baseball will leave the winning team happy or ecstatic while the losing team is disappointed. The 2018 College World Series (CWS) pitted Oregon State against Arkansas and clearly exemplifies this point in dramatic fashion. After falling in the first game to Arkansas, Oregon State won the last two games. But Game 2 was incredible in terms of how they won. With 2 outs in the top of the 9th and down by a run, an Arkansas infielder dropped what should have been a routine fly ball in foul territory to end the game and claim their first ever CWS title. OSU then rallied for three runs (keep in mind that it was 2 outs still) and won the game in 9 innings, 5-3. This led to Game 3 in a best of three series. Oregon dominated the game offensively, defensively, and through masterful pitching, and won 5-0 to claim its third such title. Emotions, positive on the OSU side and negative on the Arkansas side, ran high as the 2018 college baseball season came to a close.

2.2.3. Intensity

In Section 2.2.1 we established that emotions last a short period of time, reflecting on its duration. Recall from Module 1 that behavior is characterized by frequency, duration, and intensity. It should be no surprise that an emotional behavior is characterized also in the same way. In terms of intensity, we experience different *levels* of an emotion. We might be annoyed, irked, angry, or furious in relation to our sibling taking our favorite toy without permission. Getting an A on a paper may make us feel content, happy, or ecstatic, depending on the difficulty of the assignment, how important a good grade was to us on it, and other factors to be discussed in Module 3. Recall from Section 2.1 that mood moderates this emotional expression. In other words, it affects how intense our emotional response is. Intensity is important as many emotion researchers such as Plutchik (2003) have identified as few as eight primary emotions - anger, joy, trust, fear, sadness, surprise, disgust, and anticipation. Each of these eight emotions can vary in intensity though, such as the examples given above, and expands our emotional vocabulary.

2.2.4. Based on One's Appraisal of the Situation

There is an expression that says perception is 90% of reality. I have always said that it is really 100% of a person's reality. Notice the word *person* in there. What we perceive to be true may not be what really happened. As you learned in Section 2.1, *perceptual set* affects our interpretation of events due to the influence of past experiences we have had, current prejudices or stereotypes we hold, and our mood whether good or bad. All of this explains why we can witness the same event at two different times and have two different interpretations of it. Heck, this can happen in the same day. Let's say we wake up early in the morning and after getting ready for the day step into the kitchen only to find dishes left by our roommate the night before. He or she has already left for the day and so cannot do anything about them right now. You slept well and are optimistic about the day so you don't get upset about this (though it is a recurring problem with your roommate and a behavior you would very much hope he/she changes). You go off to classes but have a pop quiz in one class and are returned a paper in another class, neither of which you did well on. This sours your mood and once finished with your last class, you head home. It is obvious no one has been there all day but upon seeing the dishes in the sink again, you become furious. Your emotional reaction this morning was neutral at the sight of the dishes but just hours later, it has become highly negative. Again, your roommate never returned home during the day which would have meant he/she had a chance to clean them but chose not to. This shows that our emotions are determined by our appraisal as good or bad of events, but also, that this appraisal is not set in stone. Events of the day can change it.

2.2.5. Alters Thought Processes

Our appraisal may not always be changed by something as simple as mood which can also shift back in the other direction. Consider that after relaxing from the tough day and destressing, we are no longer upset about the dishes, just in time for our roommate's return home and the avoidance of a nasty altercation. Sometimes though, stimuli that we experience changes us in unexpected ways and can alter our thoughts, beliefs, and attitudes at a fundamental level.

It was September 11, 2001 and I was an undergraduate at the University of Maryland, Baltimore County completing my Bachelor's degree in Psychology. The day was going along like any other and I was finishing up my classes for the morning, at the time sitting in Psychology of Gender Differences. Suddenly my phone vibrates. I check to see who it was and notice my mother was calling. Since I could not actually answer the call, I silenced it. Moments later I received another call from her and proceeded to silence it again. This continued several more times over the next 15 minutes, obviously peaking my curiosity. Why would she call so many times when she knew I was at school? Class finally came to an end and I listened to one of the several voicemails she left. Basically, they all went something like this, "Lee. This is Mom. You have to look at the television. The Trade Center Towers in New York have fallen

because of planes flying into them. We are under attack.” Now, my mother has a tendency to exaggerate so I assumed this was another instance of that. I walked over to the Student Union building to see if the televisions had anything about this “attack.” What I saw were hundreds of students standing around, their eyes glued to the television, and would soon come to learn the veracity of her statements. In fact, it was much worse than she even thought at the time. Around the county and world, millions of people were witnessing the same event at the same time. While this was occurring and all were horrified at the chain of events and the sheer loss of life, thoughts about the Muslim community were changing. Most were distraught; many were looking to express solidarity with others; while some were angry.

Research has confirmed a change in how Muslims were perceived pre and post 9-11, and subsequent actions taken against them due to these shifting attitudes. Since 9-11, Muslims have been perceived as violent and untrustworthy (Sides and Gross, 2013), there has been lingering resentment and reservations about Arab and Muslim Americans (Panagopoulos, 2006), and Muslims experienced a period of violence, elevated harassment, political intolerance, and workplace discrimination in the U.S. in the weeks and months after the attacks (Abu-Raiya, Pargament, & Mahoney, 2011; Disha, Cavendish, & King, 2011; Morgan, Wisneski, & Skitka, 2011) which led to poor birth outcomes in Arabic-named women (Lauderdale, 2006). In fact, Arab Muslim recent immigrant communities in Canada themselves experienced a rise in perceived discrimination and psychological distress post 9-11 (Rosseau et al., 2011). It should be noted that *threat perception* is cited as the single most important predictor of in-group attitudes toward out-group members and so people who feel threatened by Muslims are more likely to associate negative characteristics to the group (Wike & Grim, 2010). But this works the same for all groups perceived as a threat, not just Muslims. For instance, Golebiowska (2004) found that intolerance of religious minorities was linked to perceived threats to Poland’s independence.

On a positive note, this shift is not present in all members of the in-group in relation to an out-group member. Johns, Schmader, and Lickel (2007) found that identification with being an American was predictive of greater levels of shame and a desire to distance oneself from the in-group when negative behavior was committed by another member of the group. And some in-group members focus their energy into positive actions such as donating blood or money to charities and flying the American flag (Morgan, Wisneski, & Skitka, 2011). Also, Swedish researchers reported no increase in workplace discrimination after 9-11 (Aslund & Rooth, 2005).

2.3. THE PHYSIOLOGY OF EMOTION

Section Learning Objectives

- List the main parts of the nervous system and their role in emotion.
- Identify and clarify the role of key brain structures in emotion.

2.3.1. The Nervous System

To fully understand the physiology or biology of emotion, we need to first understand how the nervous system works. Essentially, the nervous system breaks down into two main parts: the central nervous system (CNS) and peripheral nervous system (PNS). The **CNS** is the control center for the nervous system which receives, processes, interprets, and stores incoming sensory information. It consists of the brain and spinal cord. The **PNS** consists of everything outside the brain and spinal cord and handles the CNS's input and output. It divides into the somatic and autonomic nervous systems. The **somatic nervous system** allows for voluntary movement by controlling the skeletal muscles and carries sensory information to the CNS while the **autonomic nervous system** regulates the functioning of blood vessels, glands, and internal organs such as the bladder, stomach, and heart, and consists of the sympathetic and parasympathetic nervous systems. It is the **sympathetic nervous system** which is involved when a person is intensely emotionally aroused. It provides the strength to fight back or to flee (**fight-or-flight instinct**) by bringing about an increase in blood flow, blood pressure, heart rate, and breathing and dilating our pupils. Unnecessary functions such as salivation and digestion are slowed or inhibited and our bladder relaxes. This system also stimulates the release of adrenaline, noradrenaline, and the neurotransmitter norepinephrine (Berridge, 2007). The **parasympathetic nervous system** calms the body after sympathetic arousal. It constricts our pupils and drops heart rate, blood pressure, and respiration while returning digestion to its pre-arousal levels and stimulating salivation.

2.3.2. The Brain

In terms of the brain and its role in emotion, we need to look no further than the limbic system and the actions of the amygdala. Previous research has shown that the **amygdala** plays a key role in our ability to recognize emotional expressions or words with emotional connotations, emotional learning and memory, and emotional influences on attention and perception (Armony, 2013; Phelps & LeDoux, 2005; Anderson and Phelps, 2001). A more recent study showed that the amygdala is involved in encoding the subjective judgment of emotional faces (Wang et al., 2014).

In addition to the amygdala, a separate line of research implicates the *pyramidal motor system*, which controls voluntary movement, and the *extrapyramidal motor system*, which controls involuntary movements such as those associated with genuine emotion. Smiles that reflect genuine happiness (i.e. **Duchenne smiles**) are involuntary and under control of the latter system while fake smiles (i.e. **non-Duchenne smiles**) are controlled by the former. Hopf, Muller-Forell, and Hopf (1992) found that patients with damage to the pyramidal motor system could not fake a smile but were able to produce

facial expressions during genuine emotion while those with damage to the extrapyramidal motor system could make facial expressions willingly but did not show emotion when its expression would be genuine.

Do the different hemispheres of the brain control different aspects of emotion? It appears so and research has shown that the left hemisphere is involved in positive emotions such as happiness while negative emotions such as disgust rely on the right hemisphere (Smith & Cahusac, 2010; Harmon-Jones et al., 2004; Davidson & Irwin, 1999; Ahern & Schwartz, 1985; Ahern & Schwartz, 1979). The right hemisphere has also been found to recognize emotional stimuli quicker and more accurately than its counterpart (Ley & Bryden, 1982). If you think about evolution and the survival of the fittest, this makes a great deal sense. Why is that?

2.4. EXPRESSING EMOTION

Section Learning Objectives

- Argue for the nature or nurture perspective in relation to emotion.
- Define and describe the facial feedback hypothesis and evidence for it.
- Define microexpressions and clarify their importance.

2.4.1. Emotion - Nature vs. Nurture

The nature-nurture debate refers to the influence of genes and heredity (i.e. nature) or the environment (i.e. nurture) on any behavior, whether covert or overt. In terms of our discussion in Module 2, we want to discern whether or not emotion is a product of nature or nurture. Charles Darwin (1872/1965) stated that the facial expressions of humans are innate or inborn, and not learned. Hence, Darwin advocated the nature perspective. He believed that if a facial expression existed today, it was because it served some adaptive advantage and was effective at conveying emotion. In fact, research shows that environmental stimuli produce similar facial expressions across cultures (Hejmadi, Davidson, & Rozin, 2000; Zajonc, 1998). Ekman, Sorenson, and Friesen (1969) found that individuals living in literate (i.e. U.S., Japan, Argentina, and Chile) or illiterate cultures (i.e. the Fore tribe of Papua New Guinea) had a high degree of agreement as to what emotion was expressed by different facial expressions, though the literate cultures did perform better.

So does the question end with this answer - that emotion has a genetic/evolutionary basis? Not likely, as there is considerable evidence to support a nurture perspective too. In fact, Ekman even said that not

all emotional expressions are innate (Ekman, 1993) but some are learned through socialization. The society we live in has standards or rules for when, where, and how our emotions can be communicated, called **display rules** (Ekman, Friesen, & Ellsworth, 1972), and these begin being taught as early as infancy (Malatesta & Haviland, 1982) and children demonstrate understanding of these rules by the preschool years (Banerjee, 1997). Young children have reported expressing sadness and anger at significantly higher levels than older children, girls are more likely than boys to express sadness and pain, and children demonstrate emotional self-regulation when in the presence of their peers more than their parents (Zeman & Garber, 1996), but in school settings, report using display rules related to anger and aggression more when around teachers than peers (Underwood, Coie, & Herbsman, 1992). Emotion display rules even make their way into the workplace. Grandey et al. (2010) found that employees feel it is fine to express anger at other employees, can limitedly express it at supervisors, but completely suppress it with customers. Cross-culturally there are differences. French employees found it to be more acceptable to express anger at customers while American employees advocate expressing happiness at customers. Though many countries follow the “service with a smile” guideline, this belief is most strongly held in the United States. An earlier study produced similar results and found that in the United States, professionalism is most important, both positive and negative emotions need to be displayed appropriately, and the only proper display of negative emotions is to mask them (Kramer and Hess, 2002). Finally, Safdar et al. (2009) conducted a comparison between students in the United States, Canada, and Japan and found that Japanese display rules allow for the display of the emotions of anger, contempt, and disgust much less than the two Western samples and compared to Canadians, Japanese display positive emotions less. Gender differences were evident, but follow the same pattern across all three cultures - men expressed anger, contempt, and disgust more than women while women displayed happiness and powerless emotions such as sadness and fear more than men.

2.4.2. Facial-feedback Hypothesis

It is possible to assume that our facial expressions not only reflect our emotions, but influence them too. The **facial-feedback hypothesis** states that our facial muscles send information to the brain which aids in our recognition of the emotion we are experiencing. Soussignan (2002) found that participants who displayed Duchenne smiles (real smiles) reported a more positive experience when viewing humorous cartoons and pleasant scenes. Similarly, lifting the cheeks upward, as opposed to lowering them, has the effect of making participants feel happier (Mori & Mori, 2009). Facial muscles also provide reliable information to the brain in relation to fear-evoking stimuli (Dimberg, 1986) and sadness (Mori & Mori, 2007). Could botox injections actually make you happier? Researchers suggest just that and state that botox injections for upper face dynamic creases can reduce negative facial expressions more than positive ones, and so lead the patient to feel less fearful, angry, or sad (Alam et al., 2008).

2.4.3. Microexpressions

Microexpressions are facial expressions that are made briefly, involuntarily, and last on the face for no more than 500 milliseconds (Yan et al., 2013). It is possible that being able to read them could reveal a person's true feelings on a matter (Porter & Brinke, 2008) and evidence exists for the ability to train people to read these facial expressions (Matsumoto & Hwang, 2011). This skill would be particularly useful for law enforcement officials (Ekman & O'Sullivan, 1991).

2.5. THEORIES OF EMOTION

Section Learning Objectives

- Compare and contrast the James-Lange, Cannon-Bard, and Schachter-Singer theories of emotion.

Over the decades, several theories have been proposed to explain our emotional response to stimuli in our environment, particularly where fear is concerned. Consider how you might respond to someone running a red light as you approach the intersection. Of course you know you will be pretty shaken by it and will take steps to avoid a collision, but in what order do these events occur? Let's explore this scenario closer. By the way, I am choosing this example as I write Module 2 in late July 2018 because this actually happened to me two days ago.

2.5.1. James-Lange Theory

William James (1890/1950) and Carl Lange (1922) said that an emotion occurs *after* a physiological reaction to an event in our environment. So we will see the person running the red light, take actions to avoid the collision, and then become upset. To keep with driving examples, what do you do when you see a police officer on the side of the road facing your direction? Most people slow down and then become nervous wondering if they were speeding, and if they knew they were speeding, if the cop would pull them over and give a ticket. So our emotion follows our action (the physiological response). James-Lange also said that each emotion has a distinct physiological profile that sets it apart from other emotions. What does it feel like to be in love? Do your knees get weak? Do you have butterflies in your stomach? Do you ache to be with the person? If so, these are unique physiological reactions to being in love. What do you feel like when angry? I bet any changes in heart rate, sweating, breathing, etc. are different from being in love. So we sense the stimulus in our environment, perceive its emotional importance (i.e. through the amygdala), undergo physiological changes, and then produce an emotion.

Think about this....

The James-Lange theory says each emotion has its own distinct physiological profile as you read about for love. I bet you have experienced this before in new romantic relationships. But do these physiological manifestations of being in love last forever? Do they fade with time, and if so, what does this mean for the James-Lange theory of emotion?

2.5.2. Cannon-Bard Theory

Walter Cannon (1927; 1932) disagreed with James about each emotion having its own physiological profile and instead proposed, along with Philip Bard (1934), that the emotion and physiological response occur simultaneously. So when the car runs the red light we see this which activates the *thalamus* in our brain. Our *autonomic nervous system*, *cortex*, and *hypothalamus* are next alerted. It is the cortex that produces the emotion we experience and our hypothalamus causes the body's arousal to deal with the threat through actions of the sympathetic nervous system (which is part of the ANS) or the *flight-or-fight response*. Upon seeing the car run the red light we experience bodily arousal, put our foot on the brake, and experience terror of almost having a collision. According to Cannon-Bard, the subjective feeling or emotion is not dependent on physiological changes and the CNS directly experiences the emotion, even if other systems of the body do not.

2.5.3. Schachter-Singer Two-Factor Theory

Stanley Schachter and Jerome Singer proposed the **two-factor theory of emotion** during the early 1960s. They asserted that any display of emotion first begins with an assessment of our physiological reaction or bodily response but since this reaction can be similar between emotional states (i.e. though we might experience fear at seeing the car go through the intersection, we might also experience surprise, anger, or even excitement if we drive a race car for a living), another step is needed. Simply, we have to make a cognitive appraisal of the situation which allows us to identify which emotion we are experiencing. Seeing the car run the red light causes a physiological response in terms of being aroused. The situation is assessed to determine the source of this arousal which is the car running the red light, and then the fear is identified as the emotional response to the sequence of events. So the two cognitive factors Schachter and Singer assume are the initial sensation and perception of the stimulus that causes our physiological arousal and then the interpretation of that response as a specific emotion. In a way, they agreed with the James-Lange theory but believed it needed some refinement.

2.6. IS POSITIVE EMOTION ADAPTIVE TOO?

Section Learning Objectives

- Recall the adaptive advantage of fear.
- Define the broaden-and-build model and clarify why it is adaptive.

Recall that in Module 1.5.2.2 we discussed fear serving an adaptive advantage, and that we are biologically prepared to learn some associations over others (Seligman, 1971). Of course, fear is a type of negative affectivity but positive affectivity can be adaptive too. How so?

According to the **broaden-and-build model** (Fredrickson, 1998, 2001), positive emotions widen our cognitive perspective, aid us in thinking more broadly and creatively, build resources, and help us acquire new skills to face the challenge. Negative emotion, on the other hand, promotes a narrow way of thinking. In a study of 138 college students, Fredrickson and Joiner (2002) found that initial positive affect predicted improved broad-minded coping and that initial broad-minded coping predicted positive affect but not reductions in negative emotion. The authors took this as evidence that positive emotions cause upward spirals toward enhancing one's emotional well-being. Positive emotions have also been shown to broaden the scope of attention while negative emotions narrow thought-action repertoires (Fredrickson and Branigan, 2011). Finally, gratitude has been found to broaden and build (Fredrickson, 2004) and happiness is linked to increased life satisfaction (Cohn et al., 2009). So both positive and negative emotions aid us in survival, though negative emotions are most effective at dealing with immediate threats in our environment.

2.7. DISORDERS OF MOOD

Section Learning Objectives

- Define mental disorders.

- Identify one such classification system for mental disorders.
- List and describe bipolar disorders.
- List and describe depressive disorders.

As we wind down our discussion of emotion and mood, I wanted to at least call attention to the fact that where these topics are concerned, they intertwine with clinical psychology and mental disorders. A more exhaustive discussion of mood disorders can be found in an abnormal psychology course.

2.7.1. Overview of Mental Disorders

Mental disorders are characterized by psychological dysfunction which causes physical and/or psychological distress or impaired functioning and is not an expected behavior according to societal or cultural standards. The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (APA, 2013), is one way of classifying mental disorders. For example:

- Neurodevelopmental disorders - A group of conditions that arise in the developmental period and include intellectual disability, communication disorders, autism spectrum disorder, motor disorders, and ADHD
- Schizophrenia Spectrum - Disorders characterized by one or more of the following: delusions, hallucinations, disorganized thinking and speech, disorganized motor behavior, and negative symptoms
- Bipolar and Related - Characterized by mania or hypomania and possibly depressed mood; includes Bipolar I and II, cyclothymic disorder
- Depressive - Characterized by sad, empty, or irritable mood, as well as somatic and cognitive changes that affect functioning; includes major depressive and persistent depressive disorders
- Anxiety - Characterized by excessive fear and anxiety and related behavioral disturbances; Includes phobias, separation anxiety, panic attack, generalized anxiety disorder
- Obsessive-Compulsive - Characterized by obsessions and compulsions and includes OCD, hoarding, and body dysmorphic disorders
- Trauma- and Stressor- Related - Characterized by exposure to a traumatic or stressful event; PTSD, acute stress disorder, and adjustment disorders

And there are 12 other categories mental disorders fall under. For our purposes, we will address disorders in the bipolar and depressive disorders categories since they relate to the topic of mood.

2.7.2. Bipolar Disorders

According to the National Institute of Mental Health (NIMH) bipolar disorder, “is a brain disorder that causes unusual shifts in mood, energy, activity levels, and the ability to carry out day-to-day tasks.” It manifests itself in one of four ways. First, *Bipolar I disorder* has manic episodes that last at least 7 days and usually, depressive episodes occur lasting about 2 weeks. *Bipolar II disorder*, in contrast, is characterized by depressive and hypomanic episodes and does not include the manic episodes of Bipolar I. *Cyclothymic disorder or cyclothymia* has numerous periods of hypomanic and depressive episodes lasting for at least two years.

In general, *manic episodes* are characterized by feeling high or elated, being irritable, having trouble sleeping, believing many things can be done at once, and doing risky things. *Depressive episodes*, on the other hand, are characterized by feeling sad or down, losing interest in pleasurable tasks, being forgetful, feeling tired, and decreased activity levels.

2.7.3. Depressive Disorders

All people experience depression from time-to-time. The actual experience of depression is not a problem, unless it lasts at least two weeks, affects functioning in more than one domain in life, and presents troubling symptomology such as those described above under depressive episode. Its most serious form is *major depressive disorder (MDD)* though some people experience what is called *persistent depressive disorder* or *dysthymia*. Essentially, MDD lasts a short period of time (about two weeks) but is intense while dysthymia is milder but lasts at least two years.

Other forms of depression include *postpartum depression* or feelings of extreme sadness, exhaustion, and anxiety after the birth of a baby, and which make it difficult for the new mother to adequately care for her baby. *Psychotic depression* is when severe depression occurs at the same time as *psychosis* or having false beliefs (*delusions*) or seeing or hearing things that are not there (*hallucinations*). Finally, in *seasonal affective disorder (SAD)*, depression occurs usually during the winter months when there is less natural sunlight but lifts in the spring. Individuals suffering from SAD experience weight gain, increased sleep, and social withdrawal.

For more on bipolar or depressive disorders, please visit:
<https://www.nimh.nih.gov/health/topics/index.shtml>

You can also visit the Abnormal Psychology OER which is part of the Discovering Psychology series from Washington State University: <https://opentext.wsu.edu/abnormal-psych/>

2.8. EMOTIONAL INTELLIGENCE

Section Learning Objectives

- Define emotional intelligence (EI).
- List and discuss its four core skills and two primary competencies.
- Clarify what research says about EI and its benefit.

Emotional intelligence or **EI** is our ability to manage the emotions of others as well as ourselves and includes skills such as empathy, emotional awareness, managing emotions, and self-control. According to a 2014 Forbes article by Travis Bradberry, EI consists of four core skills falling under two primary competencies: personal and social.

First, *personal competence* focuses on us individually and not our social interactions. Through personal competence, we are *self-aware* or can accurately perceive our emotions and remain aware of them as they occur. We also can engage in *self-management* or using this awareness of our emotions to stay flexible and direct our behavior to positive ends.

Second, *social competence* focuses on social awareness and how we manage our relationships with others. Through it, we can understand the behaviors, moods, and motives of others. This allows us to improve the quality of our relationships. In terms of *social awareness*, we pick up on the emotions of others to understand what is going on. *Relationship management* allows us to be aware of the emotions of others and ourselves so that we can manage interactions successfully.

EQ is not the same as IQ or intelligence quotient as EI can be improved upon over time while IQ cannot. This is not to say that some people are not naturally more emotionally intelligent than others, but that all can develop higher levels of it with time.

For more from this article, please visit:
<https://www.forbes.com/sites/travisbradberry/2014/01/09/emotional-intelligence/#84838541ac0e>

How do we effectively use emotional intelligence? Mayer and Salovey (1997) offer four uses. First, *flexible planning* involves mood swings which cause us to break our mindset and consider other alternatives or possible outcomes. Second, EI fosters *creative thinking* during problem solving tasks.

Third, the authors write that “*attention* is directed to new problems when powerful emotions occur.” Attending to our feelings allows us shift from one problem to a new, more immediate one (consider that this can be adaptive too). Finally, moods can be used to motivate *persistence* when a task is challenging. Anxiety about a pending test may motivate better preparation or concern about passing preliminary examinations may motivate a graduate student to pay extra careful attention to details in the research articles he/she has been assigned.

Utilizing a sample of 330 college students, Brackett, Mayer, and Warner (2004) found that women scored higher than men on EI and that lower EI in males was associated with maladjustment and negative behaviors such as illegal drug and alcohol use, poor relationships with friends, and deviant behavior. Individuals scoring higher in the ability to manage emotions were found by Lopes, Salovey, and Staus (2003) to report positive relations with others, report less negative interactions with their close friends, and to perceive greater levels of parental support. They also found that global satisfaction with relationships was linked to effectively managing one’s emotions, the personality trait of extraversion (positive correlation), and was negatively associated with neuroticism. In terms of the academic performance of students in British secondary education, those high in EI were less likely to have unauthorized absences or be excluded from school and demonstrated greater levels of scholastic achievement (Petrides, Frederickson, & Furham, 2004) while EI is also shown to be related positively to academic success in college (Parker, Summerfeldt, Hogan, & Majeski, 2004).

Finally, Ciarrochi, Deane, and Anderson (2002) investigated the relationship of stress with the mental health variables of depression, hopelessness, and suicidal ideation. They found that stress was related to greater reported levels of the three mental health variables for those high in emotional perception and suicidal ideation was higher in those low in managing other’s emotions.

Module Recap

Well, that’s it. You now have a foundation to understand both the psychological constructs of motivation and emotion which will serve you well in the discussions to come. In terms of Module 2, I distinguished three types of affect - affective states, mood, and emotion - and then proceeded to list the dimensions of emotions. Well, some of them at least. Depending on where you look, other dimensions might be identified. As with all forms of behavior, emotional behaviors have a physiological cause and so we discussed the nervous system and role of the brain in producing the experience we call emotion. Do emotions arise from nature or nurture? The answer is both and we explored this through the universality of facial expressions but also the existence of display rules in society. We also discussed how the expression of emotion is exemplified by the facial-feedback hypothesis and the existence of microexpressions. Three main theories of emotions were compared and contrasted and then a case was

made for how positive emotions are just as adaptive as negative emotions. Well, maybe the latter is a bit more important for survival, but positive emotions play their part too. Finally, we discussed disorders of mood and emotional intelligence and its uses for our life.

With this module now complete, it may be time for an exam depending on how your instructor is testing the material. Whether or not you will have an exam, I have set the stage in Part I and we will now move to a group of interesting, interrelated topics in Part II - goals, stress and coping, the economics of motivated behavior, and the motivation to change.

I sincerely hope you are enjoying learning about motivation and emotion so far and see how this topic is intertwined in all that you have learned about psychology so far in your academic career. If not, you will understand soon.

II

PART II: GOALS SETTING AND
DEALING WITH STRESS

Part II. Goal Setting and Dealing with Stress

Module 3: Goal Motivation

Module Overview

Most likely the term goal is not new to you. You likely have been taught from day one to set goals for yourself and then give it your all to achieve them. But how exactly do we do that? What is this 'all' that we need to give? Module 3 will tackle the issue of goal motivation by defining goals; sharing some features of goals; and discussing characteristics of goals such as how specific and difficult they are, what their level is in a hierarchy of goals, and what we need to do to stay the course. We then turn our attention to the effect of achieving the goal. Unfortunately, success will not always be the case so what do we do if we fail or just cannot finish the goal?

Module Outline

3.1. Defining Goals

3.2. Characteristics of Goals

3.3. Goal Achievement and Failure

Module Learning Outcomes

- Explain the importance of goals through their features, sources, and possible uses.
- Outline four characteristics of goals and how they interact with one another.
- Describe strategies to bring about goal achievement.
- Outline strategies to deal with goal failure.

3.1. DEFINING GOALS

Section Learning Objectives

- Define goal.
- Define value and contrast its meaning with goal.
- Clarify how goals are overprescribed.
- Outline features of goals.
- List and describe sources of goals.

3.1.1. What is a Goal?

The term goal is likely not new to you and I bet you have heard it numerous times already today. A friend, spouse, significant other, parent, etc. might have asked what your plans are for the day or what do you hope to accomplish. Outside of others attempting to motivate your behavior, you might have done this as well using to-do lists made on post-it notes or your planner. Going back further, growing up, our family, teachers, and friends ask us what we want to be when we get older. All of this represents what are called goals, or goal-directed behavior. But what is a goal?

A **goal** is an objective or result we desire that outlines how we will spend our time and exert energy. To be successful, we must be dedicated to it which means choosing a course of action and sticking to it. Goals and values are not the same thing. A **value** reflects what we care about most in life and may guide us through decisions we have to make. Sample values include peace, meaning, connection, belongingness, success, power, etc. You might even value being healthy and well but just because you value it does not mean you will do anything about it. Goals can help keep our values and behavior in line with one another by saying we will lose 50 pounds by the end of the year and work out 5 times a week. Our actions mirror what we care about most, or our values and goals are working to the same end.

What if you value knowledge or education? You might set a goal to obtain your bachelor's degree. You spend your time and energy studying, going to classes, writing papers, asking questions, etc. After four years, you will be happy to take your diploma which is the incentive (pull) motivating you. You might even be driven to obtain the highest grades you can earn so that you are competitive when you hit the job market or apply to graduate school. This achievement motivation is the push of motivation (more on this in Module 8). So the goal of obtaining your degree is affected by both push and pull.

Through our goals we can achieve more which leads to higher levels of self-confidence and pride in our work and accomplishments. Depending on what our goal is, our performance may even improve. Let's say our goal is to learn how to use Microsoft Publisher. The result of the goal is that we can now produce really nice-looking monthly newsletters which increases the value of what we contribute to the company we work for. But to be clear and fair, goals can be overprescribed or used too much such that we fail to realize the importance of nongoal tasks, develop an inhibition in learning, engage in increased unethical behavior focused on achieving our goal, and at times, experience a reduction in intrinsic motivation (Welsh & Ordóñez, 2014; Ordóñez et al., 2009).

Goals are rather interesting to consider. Not all goals are created equal. Some are large. Some are small. Getting a B.A. in Psychology involves a lot of time, responses, lost opportunities, and energy costs. Running a full marathon requires months of dedication, training, and eating well to be ready for the big day. How might this compare to sitting down to write a paper for this class? The paper is a smaller, or maybe simpler, goal, than earning a degree. The word simpler is important here because it shows that goals can be *complex* too. They may include both positive and negative features. If you are truly dedicated to getting the highest grade possible, this will come at the expense of time spent having fun but the rewards in the future have the potential to be greater for having done so. The lost time from other tasks so you can write the paper is called an *opportunity cost* in Module 5 but what you learn and earning an A on the assignment is positive. Another way to think about the positive and negative features is to consider what skills you need to have to achieve your goal (see Module 1). Most psychology programs require majors to take statistics. This is of course a daunting task for many students. If this is you, then recognizing your difficulties with math early on can help you to obtain the necessary help to be successful in the class. I guess you could view the extra work as a negative but if in the end you understand the material and complete the task, then it was a positive feature overall.

So how do you get to this success? Planning and more planning. To prepare for a marathon, you need to slowly build up the miles. A plan is needed. Let's say you start by running a total of 14 miles in the first week done over four alternating days. In Week 2 you follow the same schedule but run 15 miles. By Week 7 you are running 20 miles and 32 miles by Week 15. Add to that you went from running about 3 days a week to 5 days a week. You also add in weight training and stretching to your plan and work on losing weight. Wow. That is a lot of work...and dedication. You need something to help you keep going. That is where incentives come in, especially with something like earning a B.A. or Ph.D. Maybe your parents offer to get you a car if you keep your grades up through the first two years. You can reward your own hard work and success with some time off or buying something fun. In terms of the marathon preparation, give yourself an extra day off as you achieve goals.

In Module 4 we will discuss stress and coping. As you will see, the cause of our stress is not often from one source but multiple sources. So multiple demands are present at the same time to tax our resources. So too it goes with goals. Oftentimes, we have multiple goals we are trying to balance... and achieve. As a student you want to earn your bachelor's degree by successfully completing your classes. But you might also want to play on the baseball team, work for the school newspaper, or gain research experience. These are additional goals that compete for our time and resources. And our goals often lead to stress so the discussion of goals, stress and coping, and the economics of motivated behavior (Modules 3-5 in this book) go hand-in-hand and overlap in many ways as you will see.

3.1.2. Where Do Our Goals Come From?

We have established that all human beings have goals, and often more than one at a time. But where do these goals come from? In this section we will briefly explore potential sources of goals to include both

internal and external sources.

First, goals arise from our own **desires or efforts to improve ourselves**. In Module 6 you will get a taste of this and a preview of the area of psychology called behavior modification. When we engage in purposeful change in our own behavior through a specific plan, we call this *self-modification*. We might want to exercise more often, drink less soda, drink more water (or both goals at the same time), practice better time management skills, quit smoking, overcome a fear, cease negative cognitions about our ability to achieve success, etc. Once we realize we need to make change, we develop a plan, execute it, and then measure to see if it was successful. This process will be described in general in Section 3.3 and represents goal-directed or motivated behavior.

Second, our goals might arise from a **desire to satisfy our psychological needs** as we will see in Module 8. Some people are driven by power and so will engage in tasks that allow them to be the leader and exert their will on others. Others wish to be part of a group and spend time with people like them. Some, like myself, want to achieve success in all endeavors that are undertaken. Whatever form your psychological needs take, you will be motivated to create goals that help you satisfy them. At times, our needs are physiological in nature though, and in Module 14 we will explore goal-directed behavior meant to satisfy hunger or thirst, regulate our body temperature, or obtain rest.

Third, as human beings we try to gain a sense of whether we have the skills necessary to achieve the goal, called **self-efficacy**. Past successes and failures affect our self-efficacy which can then affect how motivated we are to engage in a specific goal-directed behavior. As you will see in Module 10, human beings are also motivated to evaluate their performance on a task by comparing their performance against the performance of others, called a *social comparison*. For instance, a high school baseball player will compare his stats against those of his teammates to see how good he is in relation to his peers. Self-efficacy affects goal motivation in terms of procrastinating getting the task done. Results of one study showed that students with a low perceived self-efficacy were more likely to procrastinate and had low goal achievement than those with high self-efficacy (Waschle et al., 2014).

Finally, our goals sometimes arise from **outside of us**. A supervisor may motivate his employees to sell more product by offering a gift card to a local restaurant to the top seller for the day. Think of this as dangling a carrot in front of a horse. In Module 12 we will discuss motivated behavior in terms of compliance behavior. Advertisers try to activate the goal-directed behavior of customers driving to their store to obtain some prized possession because a special price is being offered only for a short time, called the *deadline technique*. Does it work? Think about your own behavior and apps such as Hooked. If you have never used it, try it out. The app is named appropriately.

3.1.3. What Do We Use Goal Setting For?

So what are goals used for? Everything. Goal setting is helpful in rehabilitation (Wade, 2009), for

organizations (Latham, 2004), for students earning a bachelor's degree (Dobronyi, Oreopoulos, & Petronijevic, 2017), for those with intellectual disabilities (Garrels, 2016); for increasing physical activity in kids at summer camp (Wilson, Sibthorp, & Brusseau, 2017), for those suffering from chronic low back pain (Gardner et al., 2015), for helping children engage in weight-related behavior change (Fisher et al., 2018), for better managing diabetes (Miller & Bauman, 2014), etc. Really, the sky is the limit here and setting goals can be used to direct our behavior to positive ends.

3.2. CHARACTERISTICS OF GOALS

Section Learning Objectives

- Define and exemplify goal difficulty.
- Define and exemplify goal level.
- Define and exemplify goal specificity.
- Define and exemplify goal commitment.

Several features of goals are important to mention. We will discuss goal difficulty, level, specificity, and commitment or striving.

3.2.1. Goal Difficulty

First, **goal difficulty** is an indication of how hard it will be to obtain the goal. So which type of goal do you think would lead to a higher sense of pride in us - a simple or a difficult goal? More difficult goals have higher incentive value because they are harder to obtain. An example would be trying to earn your Ph.D. in Organic Chemistry. Of course, the likelihood that we may fail is greater too but if we are successful, we will feel a sense of achievement that is unmatched than say if we chose an easier major. The same goes for taking more challenging classes. We experience greater pride once we have successfully passed them (and our sense of relief is likely greater too!).

3.2.2. Goal Level

Our goals can be ranked in a hierarchy with higher level goals having more value than lower level ones.

This is called **goal level**. Its sort of like making a list of all the things we need to get done in a day, then ordering them from least to most important. Of course, getting done our really important goals will leave us happier and more content than easier, less important ones. Think about what you accomplished yesterday. Did you have a higher level goal that you achieved? How did you feel about finishing it? My goal today is to finish this module and as I near the end of writing and revising, I am feeling good about myself. Yesterday, cleaning was at the top of my list of goals to achieve with finishing work for a leadership certification course I am currently in being right below. It took me until later in the evening to finish it all, and once done, I rewarded myself with some time on the Xbox One (incentive).

3.2.3. Goal Specificity

To help us be more successful with achieving these higher-level goals we will want to be as precise as possible with defining the goal. Called **goal specificity**, the more specific our goal, the better our planning can be. If we know that we want to lose 10 pounds by the end of the summer and it is early May now, then we can engage in specific behaviors to achieve this goal. Let's take a step back. I have struggled with my weight all my life. I am the textbook example for rollercoaster weight - I lose, then gain, then lose, and gain....etc. Over the past few years I have been on the gain side of the hill and it seems to keep going up with no drop off. I knew I had to lose weight and that I would do so through exercise and eating better. This is specific, but not specific enough. Until I recently went to the doctor and had blood work done, I did not know that I was prediabetic and that the reason why I did not seem to be experiencing the benefits of the downward side of the hill was that my sugar levels were very out of whack. Basically, it did not matter how much exercise or how well I thought I was eating, I would not lose weight or if I did, I would likely not keep it off. I am still exercising but now have a specific plan to eat better thanks to my doctor - reducing sugar, managing overall carbs, eating a lot of protein, and watching, but not obsessing over, fat intake. The change is working and I feel better too. I was so sluggish and tired all the time but my energy levels have definitely increased.

3.2.4. Goal Commitment

Goal commitment/striving, or sticking to the goal, is generally higher when the goal is more difficult. Why? We need to invest more time and energy into the goal's completion and so maintain our focus/attention on the goal. To increase commitment, you could announce your goal publicly (Salancik, 1977). Every one of us makes New Year's resolutions but how many actually follow through with them? We might stick with going to the gym to get in shape and lose weight beyond January if we tell others about our goal. In fact, try and find someone who shares the same resolution/goal and go to the gym with them or engage in healthy eating together (Jirka & Holland, 2017).

Another interesting twist on staying committed to our goals relates to perfectionism. Eddington (2013)

contrasted socially-prescribed (SPP; external) and self-oriented (SOP; internal) perfectionism and goal adjustment in a sample of 388 students and found that students who had a SPP orientation were more depressed, less optimistic about goal success, and used maladaptive coping strategies. In contrast, SOP oriented students were more optimistic, had stronger emotional responses to success and failure, and were more likely to reengage with their goals as a form of adaptive coping if failure did occur.

Khenfer, Roux, Tafani, and Laurin (2017) found that for religious people, belief in divine control increased goal commitment when the individual's self-efficacy (i.e. belief in their ability to complete a task) was low. Nelissen (2017) found that giving participants negative feedback about their progress toward completing a goal resulted in lower levels of success and persistence, unless they experienced hope. As such, the author speculates that hope is an affective mechanism that helps the individual regulate energy expenditure when striving to complete a goal. Finally, internal or autonomous motivation predicted the actions of athletes to persist in the face of increased goal difficulty as well as to display positive affect, adaptive coping, and future interest in the task (Ntoumanis et al., 2013).

3.3. GOAL ACHIEVEMENT AND FAILURE

Section Learning Objectives

- Describe the process of developing a goal statement.
- Contrast distal and proximal goals and their use in completing complex goals.
- Clarify when we should implement our plan.
- Clarify how we assess our progress.
- Describe what failure looks like and why we fail.
- Suggest strategies to deal with failure.

3.3.1. Goal Achievement through Goal Setting

For your goal to be completed successfully and to avoid failure, you should ideally create a goal statement and then from this a plan. Next implement the plan and then check in to see how it is going. So how exactly do you do all of this?

3.3.1.1. Coming up with a goal statement. To be able to create a plan you have to know exactly what you are creating a plan for. This is akin to developing a research design to test your hypothesis. The hypothesis is your specific, testable prediction (see Module 1) and concerns some

aspect of behavior you wish to know more about. But what is that behavior? Well, we know what it is because we have operationally defined it or gave a specific description of what it is we are studying. Goal setting is no different.

We start by creating a *goal statement*. What specifically do you want to achieve? Does the goal involve anyone but yourself? Do you need to be in a certain location to obtain it or at a certain time? If you want to work out more, you will need to attend a gym and could do so in the morning as this is when you have the most time. Do you need certain items to work on your goal? In the gym example, this might be a journal to record your workouts or weight training gloves. The more specific you are, the more likely you will be successful.

Next, your goal should be realistic and attainable. Are you willing and able to obtain the goal? If your goal is high in terms of goal level, this does not mean it will not be attainable. In fact, you are more likely to achieve it since it is something you are passionate about. It would be a labor of love for you. Low level goals are not very motivational. When we select a goal we are excited about we adopt a can-do attitude, procure whatever resources might be necessary, and see ourselves as worthy of the goal.

The goal should be timely too. Be clear about how much time you are granting yourself to complete the goal. Some goals will take longer than others to achieve. For instance, a bachelor's degree cannot be obtained in a few months. Part of being realistic is knowing how much time you will need. Allow yourself four years for your degree but finishing a good book should not take that long. If your goal is to finish reading a 500 page book, allow yourself a month for instance. This translates to about 17 pages of reading a day which is realistic and completes the reading of the book in a fair amount of time. Keep in mind that if you do not assign a time frame for the goal's completion, you have no sense of urgency to get it done.

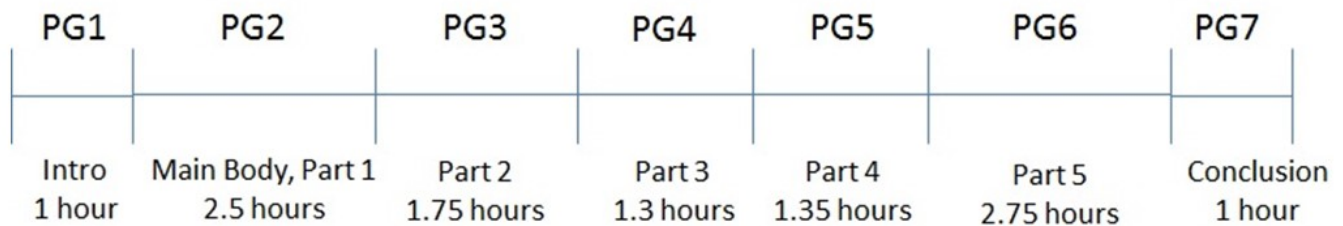
Its also a good idea to make your goal tangible. If you can sense it, or see it with your eyes, smell it with your nose, taste it with your mouth, touch it with your hands, or hear it with your ears, it becomes even more real. So how might you make obtaining your degree tangible? Imagine yourself holding the diploma in your hands, hearing your family cheer for you, and seeing their happy and proud faces.

3.3.1.2. Goal planning. Finally, your goal should be measurable. As with the hypothesis being tested with a research design, you have to know if your prediction was correct. To determine correctness, you have to measure the variable you operationally defined. In terms of your goals, if you wanted to work out five days a week, you can measure your success by looking at your journal or the app for your wearable device and counting the number of days you worked out each week. If this adds up to five or more days, your goal was achieved. This is where your plan comes in. In your plan you will specify the exact way you will record data, what the timeframe is to complete the goal, recognize if you are engaging in any behavior now to achieve the goal at least in part, determine where you go from there, and then figure out the steps to help you out.

What do I mean by *steps*? Recall that goals can be simple or complex. A simple goal such as writing a 1-

page reflection paper does not require steps to complete it, even if you are not very confident in your writing ability. Writing a 20-page research paper is a much more complex task and can be broken down into smaller steps to complete. The larger goal of writing the 20-page paper is a **distal goal** or one that is distant and far off in time. It will take us many days of working to finish the paper, so we likely cannot start it now and finish it in a few hours. If we decide to write the Introduction first, then part 1 of the main body, followed by part 2, and so forth, and then finish with the conclusion, we would have broken up the larger paper into maybe 7 smaller, manageable tasks. These are our subgoals or are also called **proximal goals**. Notice the word proximity in proximal. Proximity means close and in terms of time, proximal goals are completed sooner or closer in time. It may only take an hour or so to write the Introduction. The parts of the main body may take a few hours each. The conclusion, like the Introduction, can likely be written in about an hour. All of these subgoals work to the completion of the larger distal project or goal. Once achieved, the products of the subgoals can be combined to form the final product of a 20-page paper or distal goal. Consider one way to handle this paper in Figure 3.1.

Figure 3.1. Paper Writing Example



11.65 hours invested over 7 proximal goals (PG)

We can even use *incentives* to help us achieve the distal goal. How so? We might give ourselves a prize or reward (the incentive) after achieving each of the proximal goals. This might be the ability to watch one episode of our favorite television show after we finish part one of the main body (PG2). And the break from writing will help keep us fresh too.

3.3.1.3. Implementing the plan. Once your plan has been developed, it's time to put it to action. We will see how this can occur in relation to behavior modification in Module 6. One common reason many people fail to actually start their plan is that they are waiting for the ideal time. If you wait for the perfect time to implement the plan there will never be one. Start it on a designated date, record along the way, and then check in to see how you are doing. How so?

3.3.1.4. Assessing our progress. Without assessing your plan, you will not know if it is

working or not, or if you need to make changes to the plan. You can assess goal progress by looking at the data you have collected. You can also request feedback from others. As social support can serve as a reminder to make your goal-directed behavior, so too can it be used to compliment a job well done or offer advice on how to improve your plan. You might learn exactly where you are going wrong and what you can do to get back on track with achieving your goal. This may sound like good advice but the necessity to monitor goal progress is supported by research and is a necessary self-regulation strategy (Harkin et al., 2016).

3.3.1.5. Success. When we achieve a goal we feel satisfied, called **valence**. Our feeling of success is even greater when we complete a goal high up in our hierarchy and one we deemed to be difficult to achieve. An example would be obtaining your Ph.D. This would be at the highest level of educational goals and the difficulty, well, speaks for itself. If getting a doctorate was easy a lot more people would have one. Interestingly, when I successfully defended my dissertation thereby earning my Ph.D., I was happy, don't get me wrong. But in the moment, I felt more a sense of relief and closure. Over a decade of striving, persisting, modifying plans, studying, stressing, etc. was finally over. I was done!

3.3.2. Goal Failure

3.3.2.1. What does failure look like? We set our hearts on finishing our goal. We write a clear and actionable goal statement. We develop a plan. Its implemented....but we are no closer to achieving our goal now then we were when we started. Many of us face this very issue with weight loss, your author included. Late in the spring of 2018 I embarked upon a clear weight loss goal with what I thought were manageable, and realistic, subgoals. Things started off well, but as happens with weight loss, I plateaued for a while. I stuck with it and finally started losing again. And then....flatline. My weight loss goals were stymied. Is this goal failure? Possibly and as noted earlier, I sought medical advice to figure out what to do. In Module 1 I pointed out that to engage in motivated behavior we need to have the knowledge. I may have been motivated but was not aware of the effect sugar was having on my body. I have that knowledge now, am competent, and motivated.

3.3.2.2. Why do we fail? We could fail at our goal for numerous reasons and *The Huffington Post* had a great article on 4/29/2015 concerning why we fail at our goals. Simply, ten reasons were given to include:

- Making excuses - It is easier to come up with reasons why we cannot do something than why we can or should. For many, time is the biggest excuse and they might say they could not get to the gym that day because there just was not enough hours in the day.
- The why - Our motivation for the goal was not strong enough. Did we really want to achieve the goal or was an outside source driving us?
- Distractions and Priorities - Tied in with the excuses issue, we allow ourselves to be distracted at

times when we really are not motivated to engage in the behavior at hand. Take a look at the definition of unmotivated again from Module 1.

- No clear plan – As the article says, “When we fail to plan, we plan to fail.” Even if we have a plan, it may not be as clear or realistic as we hoped it was.
- When the tough get going...we give up – Wait. That’s not how the expression ends. Isn’t it that ‘the going get tough’? Apparently, but not for all. Some goals will tax our resources pretty heavily and we quit when we should keep pushing along.

For more reasons we quit, as these are just half of them, please visit the article at:

https://www.huffingtonpost.com/yvonne-kariba/10-reasons-we-fail-to-ach_b_7152688.html

3.3.2.3. A course correction? Now that we have established that we have actually failed and have an idea of why, what do we do? Well, we can always try again. If we fail again, then maybe it is time to quit and move on. Or maybe we do not want to abandon the goal but reduce its goal level so it is not something we are immediately trying to achieve. Finally, we could revise the goal. Maybe instead of obtaining the Ph.D. we settle for getting our Masters degree. In my case, maybe 50 lbs. of weight loss in 5 months, or 10 lbs. a month, was too much. Should I reset my goal to focus on less weight loss or extend the time to achieve it? Maybe instead of indicating a new target weight at the end of each month, I just indicate the target weight and no more. This goes against most of the advice given in this module as if I am not specific enough about a timeframe, I will not feel a sense of urgency and likely return to bad habits. I think for me, the best approach may not be to be specific about time but reduce how much weight I should be losing each month. I thought about 2.5 lbs. a week was reasonable but obviously it was not. So a course correction is in order and I have lost some weight, kept it off, and established good eating habits. Though my plan has not achieved the predicted success, it has achieved a different type of success that is worth focusing on. As goals go, remember that you may not always get what you were aiming for, but that does not mean it’s a total disaster. The glass is always half full, not half empty.

3.3.3. Final Thoughts...Task Completion - the Zeigarnik and Hemingway Effects

In the late 1920s, Bluma Zeigarnik and Maria Ovsiankina gave participants tasks to complete but interrupted them during some of the tasks. Zeigarnik (1927) found that the tasks that were remembered best were the ones participants were unable to complete and called it the **Zeigarnik effect**. This makes sense if you think about that to-do list you made for the day. At the end of the day you are more likely to focus on the tasks that were not completed, especially if they were of high importance and needed to be done. This can lead to rumination on the tasks and the loss of sleep (Syrek et al., 2017). Ovsiankina (1928) found that participants resumed these incomplete tasks even if there was no obvious benefit to

themselves and speculated that this occurred because an internal pressure was created that necessitated its resolution or resuming and completing the task.

Fast forward to the present and the “near miss” phenomenon which suggests that if we are close to being successful at achieving our goal but fail to do so, we will want to try again so that we can avoid the regret the failure will surely produce (Reid, 1986). Termed the **Hemingway effect**, Oyama, Manalo, and Nakatani (2018) found that people are motivated to continue with a task if they believe they are close to completing it and know what needs to be done to complete it. Both conditions are important. The first condition is related to the near miss phenomena while the latter links to the **expectancy-value theory** which states that our motivation to engage in a specific behavior is higher if we expect success at achieving a goal we value. The authors write, “...increased motivation to re-engage in the unfinished task would only occur when people can clearly see what more they need to do to finish it - thus supporting their *expectation to succeed* when they reinvest effort in completing the task.” Interesting.

MODULE RECAP

When it comes to our world, we are motivated to set goals and try to achieve them. Goals can be large in scope, complex, and take planning. To aid in our success incentives can be used and oftentimes we pursue more than one goal simultaneously. Goals may be ranked based on how important they are to us, how difficult they are, or how specific we can be about them. In the case of specificity, the more specific the better our planning can be. We are also more likely to achieve success if we are committed to our goal and break down larger goals into smaller components, called subgoals. Think of this as having the goal to write your term paper for a class. A term paper is a pretty time-consuming endeavor and just thinking about it can be unnerving for many students. But if we break the paper up into smaller components these are less psychologically daunting and we are more likely to finish the whole paper and give it maximum effort. As we meet our subgoals, we can reinforce our hard work and dedication by allowing ourselves to do something fun. Finally, the paper is complete and we feel success. Sometimes goals are a bit too lofty and we fail. This may require withdrawing or giving up on the goal, confronting the failure by formulating a new plan and/or acquiring some needed skill, or compromising and temporarily lower the goal in the hierarchy. No matter what strategy, research on the Zeigarnik effect shows that we will remember these incomplete tasks and the Hemingway effects shows that we will continue to try and achieve them if the end is near and we know what we need to complete.

With that, we are finished with our discussion of goal motivation. Well, it will come up repeatedly throughout this book and again in Module 4 on Stress and coping. Sometimes the stress we experience is self-imposed by having too many goals, too many high-level goals, feeling external pressure to

complete them, or even external pressure to achieve success linked to high achievement motivation. These self-imposed stressors are linked to goals and can reduce our ability to effectively cope with stress. Goals also are important to a discussion of behavioral change in Module 6. Keep goals in mind as we round out Part II of this book.

Module 4: Stress and Coping

Module Overview

We all have experience with stress. Why? Because we all have demands we are faced with daily. There is no way for us to eliminate daily hassles and stressors and so all we can do is learn how to cope with these demands and the inevitable strain and stress they will cause or wait them out. The good news is that all demands eventually come to an end. Module 4 will give you an overview of stress and coping as it relates to engaging in motivated behavior. This discussion builds on goals from Module 3 and will set us up for a discussion of the economics of motivated behavior in Module 5 and behavioral change in Module 6.

Module Outline

- 4.1. Responding to Life's Challenges - An Overview
- 4.2. Demands, Resources, and Strain
- 4.3. Problem Focused Coping
- 4.4. Stress
- 4.5. Emotion Focused Coping

Module Learning Outcomes

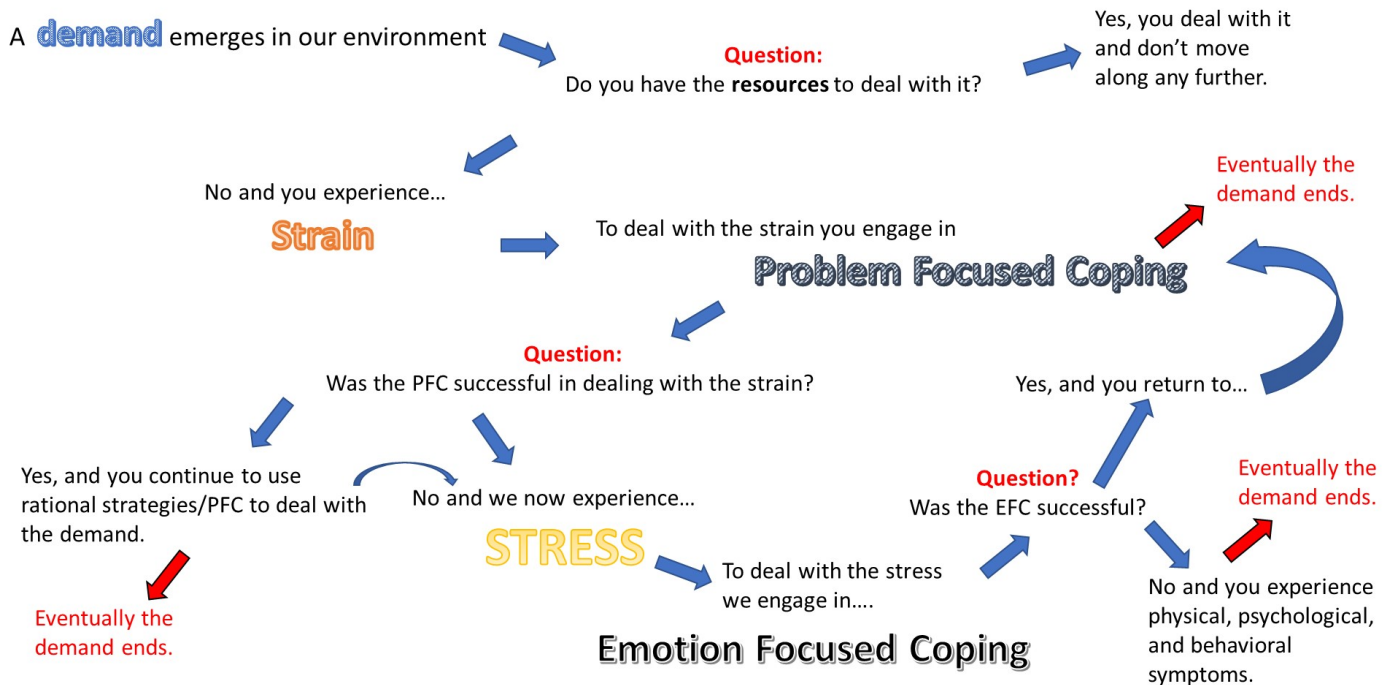
- Describe the stress and coping model in general.
- Clarify the relationship between demands, resources, and strain.
- Define stress and how it manifests.
- Describe ways to cope with life's demands and stress.

4.1. RESPONDING TO LIFE'S CHALLENGES - AN OVERVIEW

Section Learning Objectives

- Describe the stress and coping model.
- Apply the model to your own life.

Figure 4.1: A Model for Conceptualizing Stress and Coping



The model above is a useful way to understand the process of detecting, processing, interpreting and reacting to demands in our world. First, the individual detects a **demand**, or anything that has the potential to exceed a person's resources and cause stress if a solution is not found. These demands could be something as simple as dealing with traffic while going to work, having an irritable boss, realizing you have four papers due in a week, processing the loss of a loved one or your job, or any other of a myriad of possible hassles or stressors we experience on a near daily basis. Once we have registered the demand and determined it to be emotionally relevant, we begin to think about what **resources** we possess to handle it. Resources are anything we use to help us manage the demand and the exact resources we use will depend on what the demand is. For instance, the loss of a job might require you to look closer at how much money you have in savings and how long that money can realistically sustain you. Or if you have two exams and a paper due in one week, you might look at how

busy your schedule is and find ways to free up time so you can get the work done. In both cases, you could use your social support network to help you out. Our resources may be fine to deal with the demand and we don't progress any further through this process, or they may be inadequate to deal with the problem at the onset or run out if the problem persists for too long. When the latter occurs, we experience **strain** or the pressure the demand causes. This strain is uncomfortable and so we take steps to minimize it.

The best way to do this is to try and find a solution to the demand called **problem focused coping (PFC)**. If we have a paper and a test in the same week you may go to your boss and ask to trade a shift with a coworker. This gives you the additional time you need to complete the paper and study for the test. If the boss refuses, you could always ask your professor for an extra day or two with the paper. These strategies might work and if so, you continue to manage the demand through rational means. If these strategies fail to manage or remove the demand, we experience **stress**. You might think of stress as strain magnified enormously. Whereas strain may have left us a bit anxious, depressed, or exhausted, stress takes these symptoms to a whole new level. For some demands such as the loss of a loved one, the depression experienced in strain could reach clinical levels in stress. Now to effectively deal, you will need to consult a clinical psychologist. Or maybe when the big presentation in your Public Speaking class was a week away you only felt a bit anxious but now that it is ... TODAY!!!! and in an hour.... you are feeling very anxious. Not just that, you have a sick feeling in your stomach, your hands are shaking, you are breaking into a cold sweat, etc. Now your strain has manifested itself into something much more.

These physical, psychological, and behavioral reactions to stress have to be dealt with so you can either return to more rational strategies, if practical, or just 'weather the storm' and wait for the demand to pass. Hence, you employ any one of a series of **emotion focused coping (EFC)** strategies. Think of stress as an emotional reaction. Hold out your arms and make a circle around your head. It's a pretty big circle. Your initial reaction may be that big. If your EFC strategy works well your emotional reaction becomes smaller. Take those arms you likely still have in the air and start moving them in. As you do that, the circle becomes smaller. In the case of the presentation, you cannot take a '0' on it so you have to confront the demand head on and do the presentation. Better start imagining your audience in their underwear! Confronting the problem is a type of PFC and so by managing your stress successfully, you are able to return to rational approaches to dealing with the demand. Sometimes the demand is just too big and we cannot handle it. In this case, we begin to exhibit physical, psychological, and behavioral symptoms. Left unchecked and lasting for a prolonged period, these can kill us. It may also happen that we experience stress from not being able to manage the demand and then eventually the demand ends on its own. Excellent, and now we can prepare for the next stressor that will surely rear its ugly head sometime soon.

This is an overview of the process we generally go through. We will tackle each component in more depth in the remainder of this module. Also, be aware that in Module 5 I will add in another piece to the model.

4.2. DEMANDS, RESOURCES, AND STRAIN

Section Learning Objectives

- Understand the differences between everyday hassles and stressors.
- List, describe, and give examples of the three forms of everyday hassles.
- Define stressors and explain the differences between eustress and distress.
- Compare and contrast the three types of stressors.
- Identify and describe what a resource is and give personal examples.
- Explain strain and describe how it is experienced generally (general because the nature of how strain, and later stress, are experienced will depend on what the stressor was).

4.2.1. Demands

You might think of demands as being assigned to one of two major categories - daily hassles or stressors. Within these two categories are various subtypes which we will explore.

4.2.1.1. Daily hassles. The first major class of demands is daily hassles. **Daily hassles** are petty annoyances that over time take a toll on us. There are three types of daily hassles.

Pressure is when we feel forced to speed up, intensify, or shift direction in our behavior. What pressures do you experience in school? on your job? in your fraternity or sorority? from your coach? We all experience pressure on a daily basis...even faculty. I have felt the pressure to be to class on time, prepare my lecture and rehearse it, complete grading in a timely fashion, and be available for office hours. I love it though.

Frustration occurs when a person is prevented from reaching a goal because something or someone stands in the way. Examples of frustrations include money and delays. Some of you can relate to these if you have ever had to wait for your financial aid to post to your student account and did not have the money to buy textbooks before the first day of class. Then your professors are assigning readings in the first week but how do you complete them without a book? This is may be where having a friend helps out - assuming this friend is not waiting like you are! Of course, then there are open education resources like this book that solve the problem completely.

Conflict arises when we face two or more incompatible demands, opportunities, needs, or goals. We all

have experienced this one. Whether the conflict is with a roommate, significant other, boss, professor, parents, etc., these little conflicts alone are no big deal but if they keep occurring can cause problems. Did you ever have to break up with your boyfriend or girlfriend because these conflicts became the highlight of your relationship and never seemed to resolve themselves? Did you ever drop a class or quit a job for the same reason? If so, you understand the cumulative effects of conflict.

Think about the types of daily hassles discussed above. Isolated, they are not a big deal. But have you ever noticed that what was not a big deal at the beginning of the week really starts to get under your skin by the end of the week? For instance, on Monday, having to run class-to-class, drive to work and sit in traffic, wait in line for lunch, etc. are mere inconveniences that can be dealt with. By Friday they have become infuriating and annoying. In other words, over time daily hassles take a toll on us and we likely experience several at the same time (i.e. pressure to do well, not having enough money, and conflict with a roommate, for instance).

4.2.1.2. Stressors. The second major class of demands is stressors, a term you may have heard before. What are they? **Stressors** are environmental demands that create a state of tension or threat and require change or adaptation. A common misconception is that only *bad* things cause stress. But is this true? Can *good* things cause stress also? The answer is 'yes' and these good things are a special type of stressor called **eustressors** (Selye, 1976). When we think of things usually equated with stress, these are technically called **distressors**. Coming up with a list of distressors is easy. What are some good things that can create stress too? Might a new job be a eustressor? What about starting college? The birth of a baby? Any of these events qualify but keep in mind that what is a eustressor to me could be a distressor to you. There are three types of stressors, whether eustress or distress:

Change is anything, whether good or bad, that requires us to adapt. What change have you had to deal with recently? If you are a first-time college student you left home where your parents provided for you and structured at least some part of your day. You likely had rules to live by, chores to do, and siblings to deal with. Now you are on your own. You make the rules, still have chores to do but now you do them all, and instead of siblings have roommates. That is a lot of change. What about more 'seasoned in life' online students? Many of you have been away from the classroom environment for quite some time and so this represents a definite change you must adjust to. Here is the simple rule with change - the more you need, the greater the stress. Or maybe I should say the greater the potential stress.

Extreme Stressors are stressors that can move a person from demand to stress very fast. Examples include divorce, catastrophes, and combat. Hopefully you haven't had to deal with any extreme stressors recently but if you have, they would most likely take the form of the loss of a loved one or some type of catastrophe such as a natural disaster. Why? Because we live in a country that is fortunately not experiencing war firsthand, many of you are not married and so divorce or separation is not an issue, and even if you are working it is likely just for extra money and so unemployment is no real threat. In your life you will encounter at least one devastating situation and the distinguishing feature of extreme stressors is their ability to move you from demand to stress very quickly. In other words, many of them create stress immediately unless you had time to prepare. Maybe you knew your company was

going to be doing layoffs and so you spent the months leading up to your dismissal putting money on the side, preparing your resume, and applying for jobs. Or maybe you knew a loved one was dying, and it was just a matter of time. So you said your good-byes and made peace with their absence. It's when these events occur without warning that they are most detrimental to us.

In late June 2018 friends of the family were driving home from a fun day out. They were moving along the highway and came upon construction. As law-abiding citizens they slowed down. The problem was that behind them was a truck driver who was not paying attention to the slowing road conditions ahead and continued on into the slowed or stopped traffic at over 60 miles an hour. Their car was the first he hit from behind and in the back seat sat their 14-year-old daughter. Emergency crews rescued our friends and their daughter and sent them all to the hospital. Our friends had minor injuries, but their daughter had serious ones and had to be pulled from her machines two days later. There was no chance of her making any type of recovery and living a full life. She was brain dead. This was obviously an unexpected turn of events and represents an extreme stressor I hope no parent ever has to go through.

Okay so let's face it. For many of the students in the class you have hopes of going on to graduate school after you finish your bachelor's degree. The last four years were so fun you want to do it all again, but with the added obligations of research, serving on committees, and teaching. By setting this goal for yourself, you have created pressure to excel in the classes related to your major, or have generated **self-imposed stressors**. In fact, one strategy you likely came up with is to focus more time on these courses and less on those that do not matter as much. This could be a great strategy but be cautious that you do not let these other classes go too much and therefore cause yourself the distress of failing them, being put on academic probation, and/or having to take them again! The concept of self-imposed stressors related to our topic of goals from Module 3 but will come up in Modules 6 and 7 too. Keep it in mind as we continue on.

4.2.2. Resources

The next step in the process is to start figuring out something to do about the demand. The obvious task is to see what resources you have and as previously noted, these are specific to the demand. Think about what resources you would have at your disposal to handle the following:

- Daily Hassle -> Frustration -> Traffic
- Daily Hassle -> Conflict -> Constant arguing with your girl/boyfriend
- Eustressor - Birth of a new baby
- Extreme Stressor - Loss of your job
- Self-imposed Stressor - Student athlete with a swim meet in one week
- Distressors - Three exams and one paper in a week

You likely made a great list of resources for each of the demands listed above. These resources may be adequate to deal with the demand and so you have no problem. In the case of demands that arise from being a student, you are likely able to handle everything thrown at you early in the semester but as demands build on one another, your resources are exhausted and you experience strain. As you will learn in Module 5, time is one resource we all need. Writing a paper when you just have the one paper to write should not be a big deal. But what if you have two exams, a track meet, fraternity obligations, work, *and*....that paper to do in the same week. Time will be a precious commodity in this case.

I noted that in the next module we will expand upon our model and it is in relation to the topic of resources. To know exactly what resources you will need to deal with a demand, you have to know what the costs of motivated behavior are. As I noted, time is one such cost but there are others. Hold on to this thought for now.

4.2.3. Strain

Strain is the pressure the demand causes; occurs when our resources are insufficient to handle the demand. It may be experienced as exhaustion, anxiety, depression, discomfort, uneasiness, tension, or fatigue. This is short and sweet, but exactly what strain is. It manifests itself in different ways for all of us. Some may experience more or less of any of its symptoms and still be classified as strain.

4.3. PROBLEM FOCUSED COPING

Once we determine there is a demand we need to respond to, we do just that, respond or engage in motivated behavior. If our resources have been exhausted, we experience strain and begin to use **problem focused coping** which you might classify as another form of motivated behavior. Notice the name for a minute. Problem — focused coping does just that. It is a type of coping focused on the problem itself. This *problem* is the *demand* we are facing. This should help you distinguish it from emotion focusing coping which will be defined in a bit. There are three types of PFC:

1. **Confrontation** - When we attack a problem head on. This might include us dealing with having to learn a new skill in our job by taking the appropriate training class. Or if we are in need of money, we go to the bank to take out a loan. Recall our discussion of emotion from Module 2 and how we might respond initially. Our affective states definitely play a role here in how we view doing the training class, but also in terms of which PFC strategy we choose, if any.
2. **Compromise** - When we attempt to find a solution that works for all parties. A great example of

this is going to the movies. When we are deciding on which movie to see with our significant other, we may not always agree. Maybe I want to see the latest action adventure movie such as Avengers Infinity War while my wife wants to see the latest musical such as Mamma Mia 2. I may tell her we will see her movie this week and then next week we can go see my movie. This represents compromise and helps avoid or end any conflict. (FYI - To my surprise, I actually enjoyed Mamma Mia!)

3. **Withdrawal** - When we avoid a situation when other forms of coping are not practical. It may be a class you are taking is just too much for you to deal with. You likely have tried to find a way to stay in it and be successful but there are just times when we need to realize our limits (see Module 1 in relation to knowledge and competence) and step away from the class. In academia we call this withdrawing. In relationships, we withdraw from a stressful relationship by ending it. Though withdrawal may seem like giving in or accepting defeat, it is the best and most logical solution at time.

It seems fair to ask whether one strategy produces more favorable outcomes over the others. The answer is that no single strategy is better, and their effectiveness depends on the demand. For some demands, all PFC strategies may help whereas for others only one may be practical. In the example of having too much school work in a week, we might not be able to ask a professor for an extension because we have already used that card once this semester. The same could be true of requesting time off or switching shifts at work. Hence, compromise is out leaving us with confrontation and withdrawal, but the latter is not possible either since we need the class to graduate this semester. In the case of constant conflict in our relationship, all strategies would work. We might confront the problem head on or try and find a compromise. If this fails, then ending the relationship makes sense. Again, which strategies work depends on the demand(s) we are facing.

Where do we go from here? If the strategy is successful in dealing with the demand, we proceed no further along at that time. It could be that the demand persists for a long time and our resources and PFC strategy(ies) cease being effective. In that case, we move to stress. Or maybe the strategies were not effective from the start, or if the demand is too intense in nature then we might jump through the process right to stress, our next topic.

4.4. STRESS

Section Learning Objectives

- Define stress. State what stress is not.

- List and describe methods of measuring stress.
- Compare and contrast by defining and using examples for the three physiological stages of stress (General Adaptation Syndrome).
- Define adaptation energy.
- Define and provide examples of primary vs. secondary appraisal as they relate to a single demand.
- Define psychosomatic disorders and explain how these physical symptoms of stress are caused.
- Discuss the effect of stress on the immune system.
- List psychological symptoms of stress.
- List behavioral reactions of stress.

4.4.1. Defining Stress

Stress is one of those terms that everyone uses but no one can really define. Much of what we know about stress can be attributed to the work of Hungarian endocrinologist, Hans Selye (1907-1982). Selye (1973) defined **stress** as “the nonspecific response of the body to any demand made upon it” (pg. 692) and pointed out that the important part of the definition was the word *nonspecific*. Though each demand exerts a unique influence on our body, such as sweating due to heat and so in a sense is specific, all demands require adaptation regardless of what the problem is, making them nonspecific. Selye writes, “That is to say, in addition to their specific actions, all agents to which we are exposed produce a nonspecific increase in the need to perform certain adaptive functions and then to reestablish normalcy, which is independent of the specific activity that caused the rise in requirements” (pg. 693).

It is important to also state what stress is *not* since the term is used loosely. Selye says stress is not...

- simply nervous tension - Stress reactions occur in lower organisms with no nervous system and in plants.
- the result of damage - “Normal activities - a game of tennis or even a passionate kiss - can produce considerable stress without causing conspicuous damage” (pg. 693).
- something to be avoided - In fact, Selye says stress cannot be avoided as there will always be demands in our environment, even when sleeping as in the form of digesting that night’s dinner. Furthermore, adaptation and growth can occur from it.

4.4.2. Measuring Stress

Stress is measured in a few ways. One such method is to assess daily hassles or the irritating and frustrating situations in which we feel hassled on daily basis. Consisting of 117 items, the Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981) asks about crime, one’s weight (I definitely can relate to this one and my scale can attest to that), or having a myriad of tasks to do (I relate here too - what

about you?).

Another method involves the examination of life events and our perception of them. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) includes 14 items that measures whether the participant viewed events in the past month as uncontrollable and unpredictable. It assesses daily hassles, major events (stressors), and changes in our coping resources.

Finally, physiological measures can be used such as the release of the hormones epinephrine and norepinephrine and increases in heart rate, respiration rate, and blood pressure. Recall our earlier discussion of the sympathetic nervous system and how it responds to threatening stimuli in our environment (see Module 2). These measures are fairly reliable and quantifiable, but the use of equipment can produce artificial stress in participants, making the aforementioned scales the preferred choice of researchers.

4.4.3. The General Adaptation Syndrome

So how do we get to the point of stress? Selye (1973) talked about what he called the **General Adaptation Syndrome** or a series of three stages the body goes through when a demand is encountered in the world. These stages are:

1. **Alarm Reaction** - Begins when the body recognizes that it must fight off some physical or psychological danger. The Sympathetic Nervous System activates leading us to become more alert and sensitive, our respiration and heartbeat quicken, and we release hormones.
2. **Resistance** - This is the stage when the body is successfully controlling the stress. We move from a generalized response to one that is more localized and where the stressor impacts the body. Our body is more resistant to the original stressor but vulnerable to new stressors. Selye (1973, 1976) talked about what he called **adaptation energy** or your body's ability to deal with change or demands. We all have adaptation energy but it is finite and you could say we have differing amounts. Maybe think of this energy and the amount of it as your threshold. If you have a lot of adaptation energy you will have a higher threshold for stress. In other words, it will take you longer to react to stress or move into the third stage. If you have a little bit of adaptation energy, you have a low threshold. No matter how much you have, demands, whether daily hassles or stressors, use up this energy. At the start of the week you are ready to go and so your energy is at its highest. But what happens during the course of the week? This energy is being spent dealing with one demand after another and so by the end of the week you feel exhausted. This ties in with the idea of daily hassles taking a toll across time. Add stressors to this and this energy disappears quicker.
3. **Exhaustion** - When a person runs out of adaptation energy and the ability to combat stress, he or she becomes exhausted. Stressors can adversely affect medical conditions by intensifying, delaying recovery, interfering with treatment, or adding health risks. **Psychosomatic disorders** are another name given to these medical conditions and include asthma, headache, heart disease, hypertension,

and ulcers. They have real symptoms with a psychological cause or the demand we are facing. Consider your reaction to having to give an oral presentation if you are fearful of public speaking. You likely experience sweaty palms, nervousness, a queasy stomach, trembling hands, etc. What happens once the presentation is over? The symptoms go away since the demand has ended. Stressors alter the immune system, thereby increasing susceptibility to disease. Behavior changes may also affect the immune system since people under stress engage in bad health practices (i.e. alcohol use, poor diet, smoking more, and sleeping less). Psychological symptoms include depression, anxiety, reduced self-esteem, feeling worthless, anger, and frustration. Outside of the health defeating behaviors mentioned above, our behavioral reactions to stress may also include working out, watching funny movies, hanging out with friends, or seeking advice from family members.

Let's use an analogy to understand this process. Say our country was attacked by a foreign power. *Alarms* would go off so that we could mobilize the military to fight off the attacker. Initially, while the military prepared to deploy, our ability to fight off the attacker would be low. Once the Army, Navy, Air Force, and Marines were ready to fight back and deployed to the battlefield our ability to resist the attacker would increase. Over time, we would be responding well and adapt to the threat the attacker represents. We would be successfully *resisting* the attack. But if this battle took too long or another enemy force attacked us, our ability to fight back would eventually be *exhausted*. Why? The energy needed to fight back would be depleted and so our resistance would fall apart rapidly. This is where all the symptoms noted above begin to rear their ugly heads!

How might you relate this to your own life? Think of the last exam you had and how you moved through the three stages.

4.4.4. Appraisal

So how do we know if one of the demands discussed earlier is worth even getting worked up over? It is necessary to discuss **appraisal** or the process of interpreting the importance of a demand and how we might react to it (Folkman and Lazarus, 1985; Lazarus and Folkman, 1984). When a demand is detected we must decide if this is something we need to worry about. In other words, we need to ask ourselves is it relevant, benign, positive, or stressful? This process is called **primary appraisal (PA)** and is governed by the amygdala (Phelps & LeDoux, 2005; Ohman, 2002; LeDoux, 2000) which is used to determine the emotional importance of events so that we can either approach or withdraw. You might think of primary appraisal as answering the question with a one-word answer. If the question regards what the nature of the event is, we could answer with one of the words above (i.e. relevant, benign, positive, or stressful). If the question is whether this is something to worry about, then we might answer with a 'Yes' or 'No.' Either way, the answer is simple and a word or two are only required.

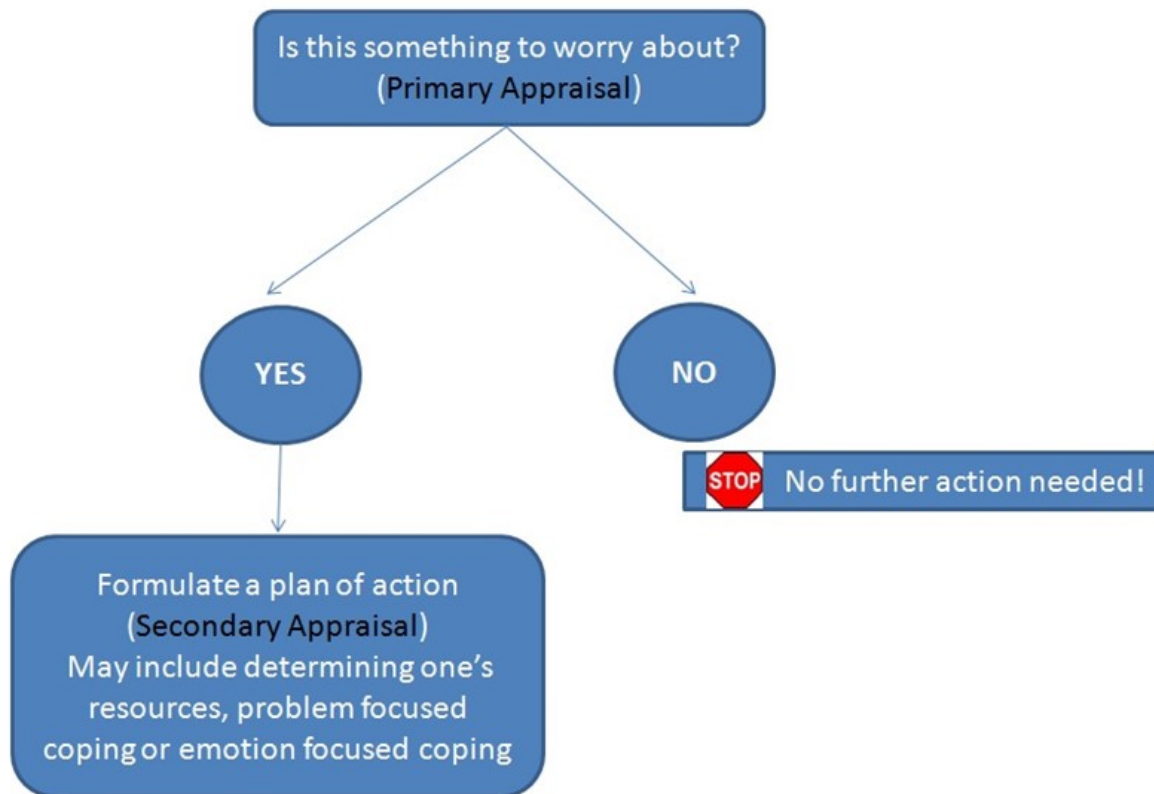
Let's say we decide it *is* something to worry about. So what do we do? That is where **secondary**

appraisal (SA) comes in. You might think of it as developing strategies to meet the demands that life presents us or forming a plan of action. This is controlled by the prefrontal cortex of the cerebrum (Ochsner et al., 2002; Miyake et al., 2000). These strategies range from assessing our resources, using problem focused coping, and then later using emotion focused coping.

A third type of appraisal is called **reappraisal**. Simply, this is when we change our initial appraisal due to the receipt of new information. The new information could greatly increase our stress, but it could also reduce it. Say for instance we heard that a family member was in a serious car accident. Our initial appraisal is that this is a problem (primary) and we decide to rush to the hospital to be there with them (secondary). Once there, we are told by the doctor that though our family member is hurt, they are not in any danger of dying and should make a full recovery. Our stress reduces as a result. We might arrive and find out he/she is in surgery and is clinging to life. In this case, our stress would increase.

The level at which the brain processes information gets more sophisticated as you move from one major area of the brain to the next. The initial detecting of environmental demands occurs due to the actions of the various sensory systems and then this information travels to the *thalamus* of the central core. From there, we need to determine if it is something to worry about and so it travels to the limbic system and the *amygdala*. Recall too that in the limbic system it is the *hippocampus* which governs memory. We also try and access memories of similar demands (or the same one) experienced in the past to know if we need to worry. Finally, we take the simple answer obtained in the amygdala and if it is something to truly worry about, a plan of action needs to be decided upon which involves the most sophisticated area of the brain or the cerebrum and the *prefrontal cortex* specifically. So how we handle this information and what we do with it becomes increasingly detailed as we move up from the lowest area of the brain to the highest.

Figure 4.2. Appraisal Decision Matrix



4.4.5. The Effects of Stress

In our discussion of the General Adaptation Syndrome, I noted some of the effects of stress. To be complete and to emphasize their importance as stress can kill if left unchecked, I want to reiterate them again. Stress can manifest itself as:

- Tension or vascular headaches
- Getting the cold or flu
- High blood pressure
- Cardiovascular disease
- Ulcers
- Upset stomach
- A rise in blood pressure
- Chest pain
- Fatigue
- Changes in sex drive
- Being anxious leading to the development of anxiety disorders such as PTSD

- Irritability
- Bouts of anger
- Depression
- Losing motivation
- Inability to focus
- Withdrawing from one's social world
- Over or undereating
- Feeling overwhelmed
- Development of diabetes
- Feeling restless

Check out the following article for more on the effects of stress:

- <https://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/stress-symptoms/art-20050987>

I noted earlier that stress can lead to an anxiety or mood disorder. Remember, anxiety and depression are not uncommon when strain occurs but if left unchecked, could progress to a disordered level. The DSM 5 has a class of psychological disorders called trauma- and stressor-related disorders. A stress disorder occurs when an individual has difficulty coping with or adjusting to a recent **stressor**. Stressors can be any event- either witnessed firsthand, experienced personally or experienced by a close family member- that increases physical or psychological demands on an individual. These events are significant enough that they pose a threat, whether real or imagined, to the individual. While many people experience similar stressors throughout their lives, only a small percentage of individuals experience significant maladjustment to the event that psychological intervention is warranted. These disorders take the following forms:

- **Posttraumatic Stress Disorder**, or more commonly known as PTSD, is identified by the development of physiological, psychological, and emotional symptoms following exposure to a traumatic event. Individuals could present with recurrent experiences of the traumatic event in the form of flashbacks, distinct memories, or even distressing dreams; negative alterations in cognitions or mood and will often have difficulty remembering an important aspect of the traumatic event; be quick tempered and act out in an aggressive manner, both verbally and physically; and have difficulty with memory or concentration.
- **Acute stress disorder** is very similar to PTSD except for the fact that symptoms must be present from 3 days to 1 month following exposure to one or more traumatic events.
- **Adjustment disorder** is the least intense of the three stress-related disorders and occurs following

an identifiable stressor within the past 3 months. This stressor can be a single event (loss of job) or a series of multiple stressors (marital discord that ends in a divorce). Additionally, the stressors can be recurrent or continuous (i.e. significant illness).

4.5. EMOTION FOCUSED COPING

Section Learning Objectives

- Clarify how others can buffer against the effects of stress.
- Define and explain the importance of one's locus of control on stress.
- Distinguish between problem-focused coping (PFC) and emotion-focused coping (EFC).
- Identify types of EFC.
- Describe behavioral interventions for dealing with stress.

4.5.1. Help from Others

Social support is one simple way of dealing with stress. Ask others for help or advice and these others could include friends or family, your professor, a pastor, or community group. Social support lessens or even eliminates the harmful effects of stress and so has been called the **buffering hypothesis**.

4.5.2. Locus of Control

Julian Rotter (1966) proposed the concept of **locus of control**, or the extent to which we believe we control the important events of our life. If we believe our fate is in our hands, Rotter said we have an *internal locus of control* but those who attribute luck or fate to the events of their life were said to have an *external locus of control*. Where stress is concerned, believing we have personal control over our life affects how well we cope with stress.

4.5.3. Emotion Focused Coping Strategies

When PFC does not work we experience stress. Recall earlier that stress was described as the giant circle around our heads (that is, if we held our hands up and formed a circle). The second type of coping, emotion focused coping (EFC), deals with the emotional response. This response could be

intense happiness as with eustressors, or frustration, anger, sadness, etc. To be able to deal with the demand and its stress from a rational perspective, we need to manage the emotional reaction we are having. This is where emotion — focused coping comes in. You can distinguish it from PFC if you recall that stress is our *emotional* reaction and we need to manage it.

There are six types of EFC:

1. **Wishful thinking** - When a person hopes that a bad situation goes away or a solution magically presents itself. In the case of being unemployed, we are hopeful that the next ring of the phone is someone calling to offer us a job, or our previous employer realizing a mistake was made and our services are needed again.
2. **Distancing** - When the person chooses not to deal with a situation for some time. If we know we have a major paper due in our psychology of gender class, but that it is not due until the final week of the semester, we may choose in week 2 to ignore the paper until maybe week 10. This strategy can eliminate stress caused by the paper until its due date is closer.
3. **Emphasizing the positive** - When we focus on good things related to a problem and downplay negative ones. In this case, you might say the glass is truly half full and not half empty. We call people who emphasize the positive optimists.
4. **Self-blame** - When we blame ourselves for the demand and subsequent stress we are experiencing. A student failing a class may attribute his/her lack of success to being stupid or ill-prepared for college.
5. **Tension reduction** - When a person engages in behaviors to reduce the stress caused by a demand. This strategy may include the aforementioned behaviors of using drugs or alcohol, eating comfort foods, or watching a funny movie.
6. **Self-isolation** - When a person intentionally removes himself from social situations to avoid having to face a demand. A student who is struggling in a class may choose not to go to the class anymore. If the problem goes beyond just this one class, he or she may completely stop going to class and stay in his/her room.

Bear in mind that at times, we may not be able to use any *rational* strategy to deal with a demand (PFC) and can only wait until it passes or ends. To be able to do this successfully, we need to manage the emotional reaction (EFC) while the demand is present.

4.5.4. Behavioral Interventions

And finally, outside of the techniques mentioned above, a few other strategies could be used to include:

- **Stress Inoculation** (Meichenbaum & Cameron, 1983) is a form of Cognitive Behavior Therapy in which a therapist works with an individual to identify problems (the conceptualization stage), learn and practice new coping strategies (the skills acquisition and rehearsal stage), and finally put these

newly acquired skills to use (the application and follow through stage).

- **Emotional disclosure** occurs when a therapist has a client talk or write about negative events that lead to the expression of strong emotions.
 - **Mindfulness** asks the individual to redirect their past- and future- directed thoughts to the present and the problem at hand.
 - **Relaxation Training** focuses on the use of deep muscle relaxation exercises.
-

Module Recap

Review the model presented at the beginning of the module one last time. Think about how your experience with the world makes you better suited to deal with some types of stressors encountered again at a later time. For instance, a study by Toray and Cooley (1998) compared first year and upper-class female students in terms of what coping strategies they used during finals week. Baseline measures showed that neither group differed in their level of stress at that time or in their perceived test-taking abilities but as the study showed, they differed in what coping strategies were utilized. The experimenters found that first year students used the EFC strategies of distancing and self-isolation whereas upper-class students used PFC and self-blame to manage the stress created by finals. This suggests that over their academic career, students learn which coping mechanisms best help them deal with the demands of college life. Reflect on this in terms of your own life.

Module 5: The Costs of Motivated Behavior

Module Overview

For motivated behavior to occur certain costs must be paid and we need to have the resources to cover them. If you go to the store to buy the latest movie or a CD these products cost money. Assume a movie costs \$20. When we go to pay the cashier, we present our bank card. In order for us to leave the store the proud owner of the latest and greatest we must have sufficient funds in our checking account. If this condition is not met meaning we do not have enough resources, our transaction is declined, we face potential embarrassment, and leave the store without the movie. Module 5 will show how costs relate to motivated behavior. We will also discuss how we are motivated to engage in the least effort possible for the same return on our behavior.

Module Outline

- 5.1. Expanding Our Model
- 5.2. Costs of Motivated Behavior
- 5.3. Resources to Cover the Costs
- 5.4. Least Effort

Module Learning Outcomes

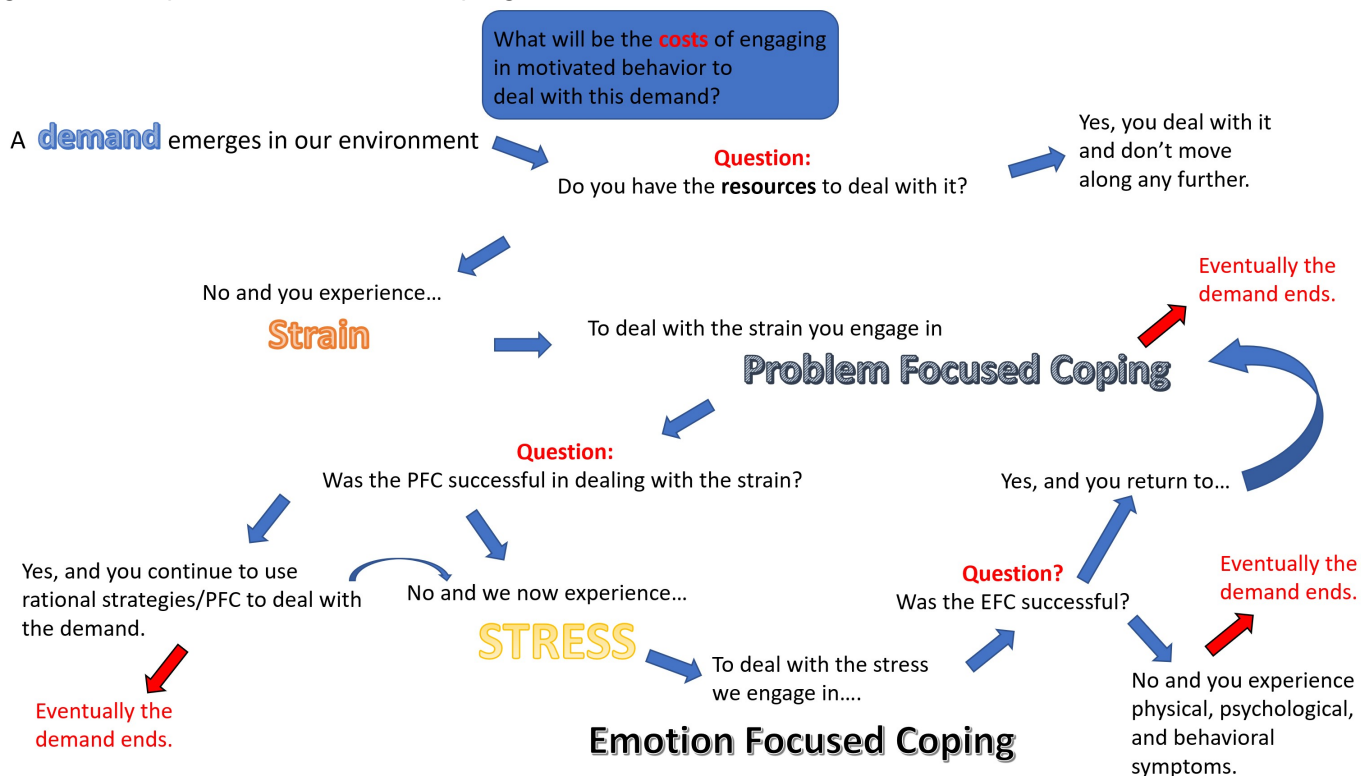
- Clarify how costs relate to motivated behavior.
- Explain the concept of the economics of motivated behavior.
- List and explain the five costs of motivated behavior.
- List and explain resources used to pay for motivated behavior.
- Define the principle of least effort.

5.1. EXPANDING OUR MODEL

Section Learning Objectives

- Clarify the importance of costs in the stress and coping model and other forms of motivated behavior.

Figure 5.1. Expanded Stress and Coping Model



In Module 4, I presented the stress and coping model as displayed above. I also indicated that I would expand upon it in Module 5. Notice in the figure the presence of the blue box at the top. When a demand presents itself in our environment we do assess our resources but to know which resources we need, we must first know what the costs of engaging in the motivated behavior are. In the case of the information presented in Module 4, these costs are associated with engaging in actions to deal with the demand as it first appears. At this stage we have only sensed the stimuli from our environment, determined it to be a threat, and then began to figure out a rational plan to deal with it (the processes of sensation, perception, and primary and secondary appraisal). Part of our efforts at secondary appraisal are determining what we need to deal with the issue. If it is a paper, our costs of motivated

behavior likely include time and psychological energy. Do we have the resources to cover the costs? I am sitting to write this module and know that though it is not a long one, it will likely take me about 3 hours to complete. This is the cost - 3 hours of my precious time. My resources show me that since it is 8:30 am now and I have until about 4:30 pm to work today, I have approximately 8 hours of time to dedicate to this endeavor. I need about 3 hours. I have 8 hours of time. The math shows that I have another 5 hours more than I may need. That's good because I often misjudge how long a module will take to write and need another hour or so. I know that I have 5 hours beyond the 3 I have budgeted and so if a fourth hour is needed, I am good. And I still have time for other tasks.

I don't want to give you the impression that costs and resources only are involved when we are dealing with a demand. They apply in all situations where motivated behavior is needed. Outside of responding to a demand in our environment, we might decide to pick up a book to read. This is another type of motivated behavior that may not be linked to a demand such as having to read the chapter for class tomorrow. Maybe it is bed time and we want to continue reading Harry Potter: The Order of the Phoenix for our own personal enjoyment and not because of a demand from a professor. The costs of engaging in the motivated behavior of reading for pleasure are about 30 minutes of time and having to dedicate our attention to the task. The costs would be about the same if the motivation for reading was driven by an external source and our professor, and not an internal source and our need to disengage from everyday life and immerse ourselves in a fantasy world. I believe Harry and You-Know-Who would agree.

5.2. COSTS OF MOTIVATED BEHAVIOR

Section Learning Objectives

- Clarify the effect of response costs on motivated behavior.
- Clarify how time serves as a cost of motivated behavior.
- Describe the need for physical energy in motivated behavior.
- Describe the need for psychological energy in motivated behavior.
- Clarify how opportunity costs lead to regret where motivated behavior is concerned.

Now that we understand that costs are involved where motivated behavior is concerned, and that resources are used to pay them, it's time to outline some of these costs.

First, **response costs** involve any behaviors that need to be made to achieve a goal. Think back to when

you had your introductory psychology course. In it, you learned about reinforcement schedules. Fixed Ratio and Variable Ratio schedules both involve making a response/behavior and then being reinforced for it. Fixed means that you are reinforced according to a schedule, say every 5 responses you receive a food pellet (that is, if you are a lab rat). Variable indicates some varying number of responses need to be made before reinforcement occurs. Slot machines are great examples of VR schedules. The response is pulling the handle and after some varying number of times doing that, you, or the lucky person after you, wins! FR and VR schedules are great examples of responses costs. We are motivated to engage in a behavior because of the reinforcement that follows (i.e. the goal is winning or receiving food).

Second, **time** is a cost that plagues most of us. We need time to write a paper. No problem. Oh wait. We have to take care of the kids, study for an exam, write another paper, read for each class, go to work, etc.... Where did all the time go? Jobs are a great example of time costs too. Some amount of time must pass before we are paid for doing what we were hired to do. In relation to the discussion of reinforcement schedules above, time is on an interval schedule and for most of us, we are paid according to a Fixed Interval schedule, usually every Friday or every two weeks. We are motivated to go to work and do our job to receive our paycheck on this regular basis. What happens if our employer stops paying us? Well, you know the answer to that.

Most motivated behavior requires the expenditure of **physical energy** in the form of calories and glucose. The **calorie** serves as a measure of energy, similar to a pound being a measure of weight or the minute being a measure of time. When we engage in motivated behavior we exert or spend these energy reserves. For instance, at my current age, height, and weight, if I brush my teeth for 5 minutes, I would burn approximately 28 calories. I have to mow the lawn later today and estimate that it will take about 30 minutes to do so. Engaging in this motivated behavior will burn approximately 292 calories. Check out how many calories you burn during different activities by visiting: <https://www.healthstatus.com/calculate/cbc/>. Keep in mind that intensity factors in too. The calculator just asks about duration.

When we engage in mental work, we expend glucose. **Glucose** is a monosaccharide or a simple sugar, the same as fructose or ribose, and is one of the body's preferred sources of fuel along with fat. The brain is an especially energy-demanding organ and uses half of all sugar energy in the body for functions such as learning, memory, and decision making. When glucose levels in the brain are insufficient, neural transmission breaks down and we might experience reduced cognitive function and issues maintaining our attention. As too little glucose is bad, too much can be too, and has been linked to memory and cognitive deficiencies (for more on glucose, please visit: <http://neuro.hms.harvard.edu/harvard-mahoney-neuroscience-institute/brain-newsletter/and-brain-series/sugar-and-brain>).

Outside of this type of energy we also need **psychological energy** in terms of dedication to the goal, sustained attention, planning, and self-control. Consider your motivated behavior of reading this module. Your goal is to finish reading the entire module and you also likely set aside a period of time to do so. Maybe you chose the time you did because you knew your kids would be at school or taking a nap

or your roommate was going to be out of the dorm for a few hours. By having this dedicated time, you almost guaranteed yourself quiet so you can focus your attention more effectively. This also represents careful planning. What about self-control? Well, you surely will want to check your phone, email, play a game, or watch a Youtube video during the reading time but keep yourself from doing so. You exert self-control or will power and avoid engaging in these distracting tasks. Thanks to having sufficient psychological energy, you finish reading the module (or will soon) and feel accomplished for the day. In Module 4 we also talked about adaption energy which is another form of psychological energy. Recall that this is the energy needed to deal with change. As long as we have enough of it we handle demands fine. When it runs out, we become exhausted and experience the physical, psychological, and behavioral effects of stress. So how much adaptation energy do we need and do we have enough of it in the moment?

Finally, writing a paper takes time away from other activities we might rather be doing such as playing with the kids or putting in time on Call of Duty. These lost endeavors are called **opportunity costs**. Reading this module means you are not working on a paper, studying for a test, hanging out with friends, or doing some other task. This might lead to a feeling of regret for passing up on these other activities. Researchers have found that the more choices you have, the greater the regret. Haynes (2009) presented participants with descriptions of 3 to 10 prizes and asked them to choose one to be entered into a drawing. Participants were also given a limited or extended amount of time to make their decision. Those given a limited time with many choices were frustrated and found the task to be difficult. Having more choices led participants to feel less satisfaction but not less regret with their decision. This is called **choice overload phenomenon**. Sagi and Friedland (2007) found that regret was magnified if people ruminated on the other options and how much satisfaction they may have gained from them. In terms of opportunity costs, if our friends are preoccupied for the night and there is nothing on television to watch, then we will feel less regret having to read this module since there are fewer missed opportunities to serve as costs of our motivated behavior. If there are numerous other tasks we could be engaging in (i.e. choices), then our regret will be higher, and could lead us to be unmotivated to read.

Now that we have covered the five main costs of motivated behavior, are there others that you would include? Consider money as one. You are a student engaging in motivated behavior on a daily basis, all geared at achieving the distal goal of earning your bachelor's degree. This creates stress for you which you manage using both problem and emotion focused coping strategies and rely on your peers as a form of social support. The degree will be worth it in the end, but how long will you have to pay your student loans off if you had to take them? In terms of the goal of getting the degree you face one key cost - money. Student loans, using your savings account, or just paying out of pocket each semester, represents the resources used to pay the bill/cost for your education.

Are there other costs we can add to the list?

5.3. RESOURCES TO COVER THE COSTS

Section Learning Objectives

- Clarify the role of resources in relation to costs.
- List and describe some of the resources to cover the costs of motivated behavior.

To engage in any motivated behavior, we have specific costs for which we need resources to cover them. Like the CD we wish to purchase at the department store, we must have the required resources. If it is \$15.99 we need at least that much in our wallet or checking account. If we don't, we cannot make the purchase and walk out empty handed. This economic model is exactly what paying for the costs of motivated behavior is like, but we need resources beyond just money. So what resources do we have?

First, *response resources* are the number of behaviors necessary to complete a goal. If your goal is to build a garden so you can plant strawberries, how many times will you need to push a shovel into the ground, lift out the dirt, and move it to another pile. If the answer is 100 times (the cost), then do you have the ability to make those 100 repetitive responses or engaging in this motivated behavior that many times (the resource)? If you are paid to complete surveys online, the pointing and clicking with your mouse while doing the survey are the responses necessary to complete the task.

Next are *physical energy resources*. Do you have enough energy/glucose so you can burn the calories necessary to build the garden or help you focus your attention on reading this module? Physical energy resources are especially problematic for a diabetic since their body is unable to convert sugar into energy which leads to feeling worn down or being extremely exhausted. Motivated behavior under these circumstances is almost impossible.

The third resource is *psychological energy resources*. How much self-control or self-regulation energy (Baumeister et al., 1998) do you have or are you impulsive in nature and act on a whim? Do you have enough adaptation energy (Selye, 1976) to deal with the demands you face as a student?

Finally, **grit** is a term coined by Duckworth, Peterson, and Matthews (2007) and states that to achieve difficult goals, we need more than just talent and opportunity, but the ability to focus and persevere over time. According to a 2013 Forbes article, grit has five main characteristics: the courage to manage your fear of failure, being achievement oriented and dependable or committing to "go for the fold rather than just show up for practice," follow through with your long-term goals, being optimistic and knowing that things will work themselves out in the end, and not seeking perfection but striving for excellence.

You might be wondering if self-control and grit are related to one another. They are related but also distinct terms. Self-control involves engaging in one activity while resisting the urge to partake in more-alluring alternatives while grit is passion and effort that are sustained over a long period of time. In relation to goals, Duckworth and Gross (2014) writes, “Self-control is required to adjudicate between lower-level goals entailing necessarily conflicting actions. One cannot eat one’s cake and have it later, too. In contrast, grit entails maintaining allegiance to a highest-level goal over long stretches of time and in the face of disappointments and setbacks.”

- Check out the Forbes article on Grit at:
<https://www.forbes.com/sites/margaretperlis/2013/10/29/5-characteristics-of-grit-what-it-is-why-you-need-it-and-do-you-have-it/#79163d2d4f7b>.
- Also, Duckworth talks about Grit: The Power of Passion and Perseverance on this Ted Talk:
https://www.ted.com/talks/angela_lee_duckworth_grit_the_power_of_passion_and_perseverance?utm_campaign=tedsread&utm_medium=referral&utm_source=tedcomshare

Before we move on, there appears to be some overlap where costs and resources are concerned and that the terms are interchangeable. They are not. Consider this. Physical energy is one cost of a motivated behavior such as working out at the gym. To do our workout, we need to have a specific *amount* of glucose in our blood or the workout ends pretty quickly. This *amount* is the cost. How much we have on hand at the time is the resource. If we have as much or more than the predicted cost we have enough to do the workout. If it is less than this amount, we cannot sustain the workout. Again, its as simple as the CD example given at the beginning of this section.

5.4. LEAST EFFORT

Section Learning Objectives

- Define and exemplify principle of least effort.

For many of our goals or motivated behaviors, the costs can be high and our resources tapped. As such, human beings are motivated to invest the least effort necessary to complete these goals. Tolman (1932) called this the **principle of least effort** meaning that when a person can choose between two incentives which have approximately the same incentive value, he/she will choose the one that is easiest

to achieve or that requires the least amount of effort. Like rats in a maze, we choose the shortest route to the goal box if a food pellet has been placed there. Think about your distal goal of obtaining your bachelor's degree. Of course, you need to take classes in your major and for many of you, this route is pre-determined by your department. But the university requires you to also take electives and you have some degree of freedom to choose classes that interest you. Have you ever filled your schedule with classes known to be easy and require little effort to pass? If you have, you exercised the principle of least effort. Why not? A credit is a credit, right? If you take a difficult elective and pass the course you earn the same three credits that you would if you took an easy class. So maybe you are best expending your limited number of resources on the courses that matter most for your career down the line and save on other classes that may not be as useful. This seems like a logical strategy!

Research has shown that if given the opportunity to save energy, people will take it but that this can have a negative impact on our health such that we need to target and change these automatic associative processes (Marteau, Hollands, & Fletcher, 2012). The authors suggest making the elevator less appealing than taking the stairs by increasing the effort needed to use it, making healthier options on a salad bar easier to reach than unhealthy ones, and making it harder to get to stores which sell alcohol, tobacco, and junk food. In a way, I suppose they are not suggesting we find ways to change this way of thinking, but to use it to our advantage so that people engage in health promoting behaviors naturally as part of least effort.

Module Recap

Setting goals, dealing with demands, and engaging in motivated behavior comes at a cost to us and we need to make sure we have the resources to cover it. Do you have enough time to write two papers and study for a test all while doing homework for other classes and working? What opportunities are you missing out on? How much physical and psychological energy will be required? What behaviors do you need to make? How good are your resources to cover these costs? If they are inadequate you experience strain and need to develop strategies to find new sources of time, energy, or responses. But no matter what you are doing, you are constantly motivated to put in the least amount of effort to achieve the goal. Why spend three hours studying for an exam if you can study one hour and achieve the same grade? This generally works but can backfire on us at times.

Module 6: The Need for Behavioral Change as a Motivator

Module Overview

Throughout this book, I have shown how goals lead to motivated behavior but also how they can create stress and the need to engage in a different type of motivated behavior called coping to deal with them. We also need to figure out what the costs of this behavior are and whether we have the resources to deal with them. Sometimes the demands that lead to stress arise from the crazy amount of pressure we put on ourselves to succeed. Where does this come from? It could come from our personality traits such as being highly conscientious (Module 7) or a high achievement or power need (Module 8). Or maybe we have realistic goals but are a procrastinator. Or do not know how to plan tasks. Maybe we do all that well but do not find effective ways to relieve stress and replenish our adaptation energy such as exercising, walking the dog, hanging with friends, etc. Maybe we have poor coping mechanisms such that we smoke when stressed or resort to alcohol and/or drugs to escape life. These types of maladaptive behaviors may need to be changed and is why I have chosen to add a module to this book on behavior modification which is a definite form of motivated behavior. In fact, we will discuss the motivation to change here in a bit.

I consider this an application of motivation but place it earlier in the book than the rest of the application chapters which start in Module 9. I felt it went nicely with the topics in Part II. But notice I have already referenced Modules 7 and 8 which follow this one. So, though it can go here, additional content to come will explain some aspects of why we engage in the behavior that we do and why change may be needed. It also may explain why some people are better at making the change stick than others, called maintenance. Still, I am comfortable with the placement of this module in the book.

Content Links to: PSYCH 328: Self-Control at Washington State University which covers behavior modification. Be advised that this is a snapshot of the course and not the whole course.

The material is also derived from my textbook/OER, Principle of Behavior Analysis and Modification (2017). The full text can be accessed by clicking [here](#).

Module Outline

6.1. Understanding Behavior

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- 6.2. A Willingness to Change
 - 6.3. Defining the Behavior and Goal Setting
 - 6.4. The ABCs of Behavior and Functional Assessment
 - 6.5. Strategies to Bring about Motivated Change
 - 6.6. Implementing the Plan
 - 6.7. Evaluating the Plan's Success
 - 6.8. Maintenance Phase and Relapse Prevention

Module Learning Outcomes

- Define and describe the characteristics of behavior.
- Clarify how the field of applied behavior analysis goes about changing behavior and describe the ABCs of behavior.
- Clarify stages people go through when deciding to bring about behavior change.
- State the utility of a pros and cons analysis.
- Clarify the role of self-efficacy in behavior change.
- Clarify what a behavioral definition is and why it is important to applied behavior analysts.
- State the importance of setting clear goals in terms of what behavior you want to change.
- Describe the who, what, when, where, and why of recording and data collection.
- Clarify what is learned through a functional assessment and describe how to conduct one.
- Clarify the importance of the baseline phase.
- Identify strategies to help bring about change.
- Discuss the importance of the treatment phase in a behavior modification plan.
- Discuss ways to evaluate and adjust your plan.
- State the importance of the maintenance phase.
- Explain the concept of relapse.

6.1. UNDERSTANDING BEHAVIOR

Section Learning Objectives

- Define and exemplify behavior.
- List and define the four dimensions of behavior.
- Differentiate overt and covert behavior.
- Describe how behavior impacts the environment
- Contrast basic and applied science.
- Describe the ABCs of behavior.
- Define self-management or self-modification.

The focus of psychology is the scientific study of behavior and what causes it (mental or cognitive processes), while the focus of applied behavior analysis or behavior modification is changing behavior. **Behavior** is what people do, say, or think/feel. See Table 6.1 for examples. Behavior has several dimensions that are important to mention. They include:

- *Frequency* - This is how often the behavior occurs.
- *Duration* - This is how long the behavior lasts.
- *Intensity* - This is how strongly the behavior occurs.
- *Latency* - This is the time from when a stimulus presents itself and a behavior follows.

For any behavior we engage in, some number of these dimensions are important. For instance, if we see ourselves as worthless, often a sign of depression, we need to figure out how long the feelings have gone on for and how intense they have become. If the thoughts (and related symptoms) occur for a short duration but are intense, this is characteristic of Major Depressive Disorder. If they last a long time (long duration) but are not very intense, this is characteristic of dysthymia or mild depression. What about running? We need to know how often we run each week, how long we run, and at what speed - the dimensions of frequency, duration, and intensity respectively. Finally, consider a father asking his son to take the trash out as I often do with my son. If it takes him 15 minutes to do so, then this is the latency.

Behavior can be overt or covert. **Overt** is behavior that is observable while **covert** behavior cannot be observed. We might even call covert behavior private events. When a behavior is observable, it can be described, recorded, and measured.

Behavior also impacts the environment or serves a function. If we go to the bathroom and turn on the water, we are then able to brush our teeth. If we scream at our daughter for walking into the street without looking, we could create fear in her or raise her awareness of proper street crossing procedure. In either situation, we have impacted the environment either physically as in the example of the faucet or socially as with the street incident. Here's one more example you might relate to - your professor enters the classroom and says, "Put away your books for a pop quiz."

Table 6.1. Types of Behavior People Engage In

Overt		Covert
What we DO	What we SAY	What we THINK/FEEL
Swing the bat and hit the ball when thrown by the pitcher	Thank the coach for the great tip	Have a sense of accomplishment and are encouraged to keep trying
Engage in self-injurious behavior	Tell our family we are not hurting anyone but ourselves	Are embarrassed by the act
Sit around and mope	Call ourselves stupid and say we are a loser	Feel worthless
Procrastinate finishing a project for our behavior modification class	I can get it done later this semester. I have time.	We are engaging in the emotion focused coping strategy of distancing
Go to the gym and workout.	I did a great job and am proud of myself.	Feel elation and that our goal setting strategy is working
Use corporal punishment with my children.	Berate the child verbally.	I am maintaining order.
Play a game when we wake up instead of going to the gym.	I can always go to the gym later.	Shame for not going to the gym.
Cry over the loss of a loved one due to suicide.	I should have been there. I should have seen the signs.	Engage in self-blame for no good reason.

Science has two forms - basic or pure/applied. **Basic science** is concerned with the acquisition of knowledge for the sake of the knowledge and nothing else while **applied science** desires to find solutions to real-world problems. You might think of it like this - the researcher decides on his own question to investigate in pure science, but an outside source identifies the research question/problem in applied science. Of course, this is not always the case. In terms of the study of learning, the pure/basic science approach is covered under the *experimental analysis of behavior*, while the applied science approach is represented by *applied behavior analysis* (ABA).

So what is applied behavior analysis all about? Simply, we must first undergo an analysis of the behavior in question to understand a few key pieces of information. We call these the ABCs of behavior and they include:

- **Antecedents** - These are the environmental events or stimuli that trigger a behavior. If your significant other does something nice for you and you say 'thank you,' the kind act is the antecedent.
- **Behaviors** - Again, this is what the person does, says, thinks/feels. In the previous example, you

saying 'Thank you' is the behavior or what you said. The behavior may be something we want to increase, and so is classified as a **behavioral deficit**, or something we need to decrease and is a **behavioral excess**. As we will discuss later, we will have desirable and undesirable behaviors we engage in. The undesirable serves as temptations and distract us from our end goal.

- **Consequence** - You might say a consequence is the outcome of a behavior that either encourages it to be made again in the future or discourages its future occurrence. If we always engage in a particular behavior when a specific stimulus is present, then there must be some favorable outcome that follows the behavior, thereby reinforcing its occurrence and making it highly likely that the behavior will occur the next time the antecedent is present. Hence why we say that the antecedent is a trigger for the behavior.

Behavior modification can be used to change the behavior of *others* but note that the same principles and procedures can be implemented by an *individual* to bring about their own change. This is called **self-management** or **self-modification**.

6.2. A WILLINGNESS TO CHANGE

Section Learning Objectives

- Outline the steps of change.
- Define self-efficacy.
- Contrast those high and low in self-efficacy.
- Clarify how self-efficacy affects the success of a behavior modification plan

6.2.1. Thinking About Changing

Prochaska, Norcross, and DiClemente (1995), in their book, *Changing for Good*, state that "Change is unavoidable, part of life. Few changes are under our control. But some things we can intentionally change." How so? We must initiate change to help modify thoughts, feelings, or behaviors. They also say, "In change, timing is everything" and nine processes are involved. A few of interest are *countering* in which we substitute healthy responses for unhealthy ones, *helping relationships* or asking for help from your loved ones so you don't have to go it alone, *rewards* or giving yourself a special prize when you achieve your goal and minimizing the use of punishment, *commitment* or accepting responsibility

for the change on a personal level and then “announcing to others your firm commitment to change,” and *conscious awareness* or bringing unconscious motivations to a conscious level.

Knowing when to change is key as if you are not ready, you will inevitably fail. Likewise, if you spend too much time trying to understand your problem you might put off change indefinitely. Change unfolds through a series of six stages and successful self-changers follow the same road for each problem they desire to modify. These stages include: precontemplation, contemplation, preparation, action, maintenance, and termination. Let’s look closely at each.

6.2.1.1. Precontemplation stage. This is when the person is not considering making a change and even resists the idea. Control of the problem is shifted to outside the person and he/she does not want to be nagged about the problem from family and friends. The individual even denies responsibility for the problem and justifies the behavior.

Prochaska, Norcross, and DiClemente (1995) suggest the individual answer the following questions to help them see the difference between problem behaviors and lifestyle choices:

- Do you discuss your behavior pattern?
- Are you well informed about your behavior?
- Are you willing to take responsibility for the consequence of your behavior?

Individuals move out of the precontemplative stage when they realize that their environment no longer supports their unhealthy lifestyle, when there is social pressure to make the change, or they receive direct requests from others such as employers.

6.2.1.2. Contemplation stage. This is when change is seriously considered, but within the next six months. Many people stay stuck in this stage for a long period of time due to a fear of failure and so postpone and procrastinate. We have made the decision to change, but when the time is right. Of course, we all know there is no such time. We also engage in wishful thinking and desire to live as we always have but with different consequences such as eating what we want and not gaining any additional weight.

The authors state that you know you are ready to move on when your focus is on the solution and not the problem. We need to engage in consciousness-raising by asking the right questions such as understanding how many calories we really need to consume each day or what the effects of smoking are on the body and how long it will take to recover from them, if we can at all. We might also set goals, collect data, and do a functional assessment. In any case, it is critical to engage in this task during the contemplation stage as it helps us to be more aware of our problem behavior, “gain insight into how your thinking and feeling maintain the problem, and begin to develop a personal conviction of the value of change” (Prochaska, Norcross, and DiClemente, 1995).

You can even engage in a process of self-reevaluation, which if successful, will show that your fundamental values conflict with the problem behavior. We might assess how unhappy we are with the habit or behavior in the present, and then engage in an appraisal of our happier, healthier changed selves in the future. We could also think before we act especially with problems involving overeating, smoking, or drinking; create a new image of a changed you; and evaluate the pros and cons of changing, which we will discuss in Section 3.2.

6.2.1.3. Preparation stage. This is when the person gets ready to change within the next month. Make your intention to change public and develop a firm, detailed plan for action. In terms of the plan, be specific about what steps you will take to solve the problem. Commitment involves a willingness to act and a “belief/faith in your ability to change” which we will discuss in Section 3.3. Engage in social support also at this time, even if you decide not to make your plan for change public.

6.2.1.4. Action stage. Now fully committed to change, we enter the action stage. This requires a great deal of time, energy, and sacrifice; and we must be aware that the action stage is “not the first or last stop in the cycle of change.” The action stage lasts for months and involves being aware of potential pitfalls we may encounter.

It is during this stage we engage in the process of change called *countering*, or substituting a problem behavior with a healthy behavior. Of course, all we may do is substitute one problem behavior for another but to minimize that possibility, we could engage in active diversion by keeping busy or refocusing energy into an enjoyable, healthy, and incompatible activity. We might exercise, relax, counterthink by replacing troubling thoughts with more positive ones, or be assertive especially if others in your life are triggering the problem behavior. Though resisting temptation is an accomplishment, it is not reward enough, and so we need to be rewarded when we counter, exercise, relax, counterthink, or be assertive. Helping relationships are also important to make our success more likely.

6.2.1.5. Maintenance stage. This is when change continues after the first goals have been achieved. To be successful, your change must last more than just a few days or months. It should last a lifetime. To be successful at maintenance Prochaska, Norcross, and DiClemente (1995) state that you should have long-term effort and a revised lifestyle. Relapse is a possibility if you are not strongly committed to your change.

How do you maintain your positive gains? Stay away from situations or environments that are tempting. Our former problems will still be attractive to us, especially in the case of addictive behaviors. What threatens us most are “social pressures, internal challenges, and special situations.” In terms of internal challenges the authors state that these include overconfidence, daily temptation, and self-blame. Creating a new lifestyle is key too. If we are under a great deal of stress, exercise or practice relaxation techniques instead of engaging in our former behavior of comfort eating or drinking alcohol.

6.2.1.6. Termination stage. This is when the ultimate goal has been achieved but relapse is still

possible. Actually, Prochaska, Norcross, and DiClemente (1995) note that, "Recycle is probably a more accurate and compassionate term than relapses. Recycling gives us opportunities to learn." How so? They note that people pass through the stages not in a linear fashion but more in a spiral. It may seem like we are not making progress, but the spiral is ever pushing upward. Also, few changers ever terminate the first time around unless they have professional help or a clear understanding of the process of change.

See also: McConaughy, DiClemente, Prochaska, and Velicer (1989) and

Prochaska and DiClemente (1992)

6.2.1.7. Determining your stage. So how do you know which stage you are in? Prochaska, Norcross, and DiClemente (1995) say to answer 'yes' or 'no' to the following four questions:

1. I solved my problem more than six months ago.
2. I have taken action on my problem within the past six months.
3. I am intending to take action in the next month.
4. I am intending to take action in the next six months.

Scoring:

- If you answered 'No' to all four questions - Precontemplation stage
- You answered 'Yes' to #4 and 'No' to 1-3 - Contemplation stage
- You answered 'Yes' to 3 and 4 and 'No' to 1 and 2 - Preparation stage
- You answered 'Yes' to #2 and 'No' to #1 - Action stage
- You answered 'Yes' to #1 - Maintenance stage

What were your results? Is this surprising to you?

6.2.2. Self-Efficacy

Change is not easy and the more change we have to make, the more difficult or stressful. This is where Albert Bandura's concept of self-efficacy (Bandura, 1982, 1986, 1991a, 199b) comes in. **Self-efficacy** is our sense of self-esteem and competence and feeling like we can deal with life's problems. It includes our beliefs about our ability to complete a task and affects how we think, feel, and motivate ourselves. When our self-efficacy is high, we feel like we can cope with life events and overcome obstacles. Difficult tasks are seen as challenges and we set challenging goals. In contrast, if it is low, we feel hopeless, helpless, and that we cannot handle what life throws at us. We avoid difficult tasks and throw in the towel quickly when things get tough. These individuals are easily depressed and stressed.

Consider this in relation to how successful we might be with achieving our goal of changing an unwanted behavior or establishing a positive behavior. The pros and cons of changing the behavior (Note: I skipped this for the purposes of this book. If you want to read a full account of how to determine if the pros outweigh the cons, please see Section 3.2), if weighing heavier on the side of making a change, give us the motivation or desire to make a change. But having the desire does not mean that change will occur. We have to have the ability also and possibly more important, we have to believe we can make the change. The change itself is the obstacle to overcome and is challenging for us. If it was not, we would have made the change already. Those high in self-efficacy will be more likely to move from the action stage to maintenance and termination of the treatment plan compared to those low in self-efficacy.

An example will hopefully help you to understand the relationship between willingness and ability. In terms of losing weight, many people genuinely desire to shed unwanted pounds. They engaged in a pros and cons analysis and the pros won out. But many do not understand how to lose weight in terms of making sense of caloric intake, the impact of specific foods they eat, consumption of sugars and protein, the role of sleep and water intake, etc. Armed with this knowledge they can be successful. Their ability would match their desire to make change. But many do not know these important facts and so lose some weight early on but then stagnate and give up. Losing the pounds is motivational or reinforces the weight reduction behaviors being used, leading to continued commitment to the plan. But when weight loss stagnates, we become frustrated and return to the behaviors that caused the problem in the first place.

6.3. DEFINING THE BEHAVIOR

Section Learning Objectives

- Define and exemplify behavioral definition
- Clarify how a criterion is used to move from one goal to the next.

6.3.1. Behavioral Definitions

It is critical to clearly define what the behavior is you wish to change. In behavioral modification, we call this a behavioral definition. A **behavioral definition** is a precise, objective, unambiguous description of the target behavior or a competing behavior. Our behavior may be an *excess* and something we need to decrease or a *deficit* and something we need to increase. No matter what type of

behavior we need to change, we must state it with enough precision that anyone can read our behavioral definition and be able to accurately measure the behavior when it occurs. Let's say you want to exercise more. You could define it as follows:

- 1 behavior = going to the gym and using a cardio machine (elliptical, treadmill, or stationary bike) for 20 minutes.

Okay, so if you went to the gym and worked out for 40 minutes, you would have made 2 behaviors. If you went to the gym for 60 minutes, you made 3 behaviors. What if you went to the gym for 30 minutes? Then you made 1.5 behaviors, correct? No. It does not make sense to count behaviors by the half.

Behavioral definitions should be simple. Don't make it reflect whatever your end goal will be. For instance, if your overall goal is to run for 60 minutes, do not make your behavioral definition to be 1 behavior = 60 minutes of running. Since we do not count partial behaviors, you will show no behaviors made until you finally reach 60 minutes of running. How low should you go then? If 60 is too high, do you define it as 1 behavior = 1 minute of running. Likely not. Think about what is the least amount of time you would run. If it is 5 minutes, you could set it at 1 behavior = 5 minutes of running. Then if you run 30 minutes you would have made 6 behaviors. With defining running as 20 minutes of continuous exercise you can only count 1 behavior and the other 10 minutes are unaccounted for. Think about what denomination of time is most practical for your situation and where you are starting out at. If you have never run before, a smaller increment of time might be better. If you run about 30 minutes a few days per week and want to simply double your time, then you could use a greater increment such as 10, 15, or 20 minutes.

We should always create behavioral definitions for the target behavior but also any competing behaviors that may occur. If we want to go to the gym more often we might discover when examining our antecedents that playing games on our phone in the morning or talking to our roommate in the afternoon leaves us with not enough time to work out. We would then define this **competing behavior**, or a behavior which interferes with the successful completion of a target behavior, and then when developing our plan, implement strategies that make the distractor less, well, distracting.

6.3.2. Goal Setting

Once you have an idea of exactly what the behavior is you want to change, the next task is to set goals about the behavior. This involves the same information we discussed in Module 3: Goal Motivation. In behavior modification, you have your distal goal and to get there, use proximal or subgoals.

But how do we know when to advance from one goal to the next. The specific "trigger" for when to advance from Goal 1 to Goal 2 is called the **criterion**. Our first goal states that we will run for 15 minutes 3 days a week. Achieved. When do we move to running 30 minutes for 3 days a week? That

depends on the behavior we are trying to change. In exercise related projects or plans, it is prudent to make sure you can truly engage in that level of behavior for at least two weeks. Listen to your body, a trainer or doctor, and then move to the next goal when it is safe to do so. For other projects such as pleasure reading, you could move to the next goal as soon as the current goal has been achieved. There is no need to wait as no serious harm can come from increasing the number of pages you read a night from 5 to 10, other than a few minutes of lost sleep.

6.4. DETERMINING THE ABCS OF BEHAVIOR VIA A FUNCTIONAL ASSESSMENT

Section Learning Objectives

- Define self-monitoring.
- Clarify what the observation period is.
- Differentiate between a natural setting and an analogue setting.
- Clarify the use of the ABC chart in data collection.
- Define functional assessment.
- Outline what information is gained from a functional assessment.
- Describe the importance of the baseline phase.

6.4.1. Collecting Data

6.4.1.1. Who does the recording? In terms of who does the measuring, this may be a professional or other individual routinely associated with the individual such as a teacher, work supervisor, counselor, school bus driver, caregiver, or sibling. In the case of self-management or self-modification, you are doing the measuring and recording which is called **self-monitoring**. One issue in behavior modification is what we call *reactivity*, or when the process of recording a behavior causes the behavior to change, even before treatment is applied. This may make obtaining baseline data to compare with treatment data difficult. If the nutritionist wants to reduce the consumption of high fat, salty foods in her client to help with weight loss she will need to know what the client eats normally. If the client alters his behavior upon knowing what the focus of the nutritionist is, then comparison data will not be possible. Of course, in the case of self-monitoring, the actual monitoring itself is part of the treatment and so we expect that keeping a food journal or using an app such as Fitbit will alter one's behavior.

6.4.1.2. When do we record? In terms of when we record, we will have a clearly defined **observation period** and should choose a time when the behavior is likely to occur.

6.4.1.3. Where do we record? In terms of where, we can choose a *natural setting* or place where the behavior typically occurs or an *analogue setting* or one that is not part of the person's daily routine. This is the equivalent to naturalistic and laboratory observation, respectively. Finally, we can choose structured or unstructured events to observe which refers to whether or not there is a specific event or activity to observe and record.

6.4.1.4. With what do we record? Recording can be done in many ways. You might record instances of the behavior using low tech options such as paper and pencil, moving coins from the left pocket to the right pocket, or tearing a sheet of paper. Alternatively, you can go high tech with a computer, phone, using barcodes, or tablet. Middle of the road alternatives include a pedometer, stopwatch, or golf stroke counter. No matter which method you use, you will ultimately want to record on what are called *ABC charts* (also called *structured diaries*). These tools record what environmental or internal events led to the occurrence of the behavior or the antecedent, what form the behavior took, and what happened afterwards or the consequences. ABC charts can look like the following:

Figure 6.1. ABC Chart

Date: _____

Time: _____ AM PM

Observer: _____

Location: _____

<p>Antecedents:</p> <p>(Describe any environmental or internal events that led to the occurrence or non-occurrence of the desired behavior)</p>	<p>Description:</p>
<p>Behavior:</p> <p>(Describe the behavior that was made and any relevant dimensions: frequency, duration, intensity)</p>	<p>Description:</p>
<p>Consequences:</p> <p>(Describe the results of the behavior using terminology learned in this course such as PR, NR, PP, and NP)</p>	<p>Description:</p>

6.4.2. What is Functional Assessment

A **functional assessment** is when we much more closely scrutinize the antecedents and consequences to see what affects the occurrence or nonoccurrence of a desired or problem behavior, all to maximize how effective our plan/strategies will be.

This scrutiny involves gathering several important types of information which include:

- The Behavior - what makes up the problem behavior or the desired behavior. It may be that in the case of a problem behavior, several sub-behaviors are included. For instance, earlier we described a student being disruptive in class. This is fairly general and could include the sub-behaviors of getting out of his seat without permission, talking without being called on, verbally or physically harassing other students, being uncooperative, ignoring directions from the teacher, or acting aggressively on the playground or during gym.
- The Antecedents - what stimuli in the environment, or thoughts/feelings in the person, lead to the behavior's occurrence/non-occurrence. These stimuli will actually *predict* the behavior in the future. To develop an effective plan, you must know what cues there are for the behavior but also make sure you go back far enough in time to find the true cue. If a person does not socialize, it could be due to worry about embarrassing him or herself, but examining deeper reveals a parent who told the individual he was worthless and no one would ever like him. This reason would obviously need more work undoing/correcting than simply worry about looking foolish. Either way, if is safe to say, or is predictable, that the individual will not strike up a conversation with another student waiting in line to pay for his textbooks early in the semester if there is concern about being embarrassed or subconsciously, you hear your parent's voice and condescension. You will also want to know if there are certain situations, events, times, etc. that lead to the desired behavior or the problem behavior.
- The Consequences - these are any events that follow the problem or desired behavior, and maintain it. Face it. If you don't derive some benefit from making the behavior, there is simply no reason to make it. This goes for problem or desirable behaviors. If you wake up in the morning, play games on your phone, and really enjoy it, you will not be as concerned about getting to the gym to workout. The consequences are particularly reinforcing for you and maintain the problem behavior. If during the process of deciding to engage in behavioral change (see Module 3) you decide that being in shape and losing weight is more important, you will encounter stronger reinforcers for working out then you do for playing games on your phone. You might even realize that while you are on the recumbent bike, you can spend a few minutes on your favorite game so you are not losing out on this fun activity while you get into shape. In short, motivation is key and centers on consequences.
- Previous Interventions - It may be this is not your first time attempting to change the behavior. Maybe years ago you changed it, maintained that success for several years, but then relapsed for any number of reasons. You will want your current applied behavior analyst to know what was part of your treatment plan before. Some elements may have worked while others may not have...then. Times change and so do people and you might find that video games were reinforcing 10 years ago but not so much today. Analyzing these interventions will help you to figure out what might work

again, all while acknowledging a new approach may be needed.

6.4.3. The Baseline Phase

The **baseline phase** is when we collect data but do not attempt to change our behavior. No strategies are in place. We are trying to find out how often, long, or intensely we engage in our target/desirable behavior or a problem behavior. In cases when we are not making the desirable behavior at all, such as going to the gym or using a planner to organize our school work, a baseline phase is still useful for determining why we do not engage in the desired behavior and/or why we make a problem behavior. Typically, we continue with the baseline phase until a clear pattern emerges and this can take a few days at least.

After your behavior modification plan has run its course, you will compare the level of your behavior after the strategies were used against the level of the behavior before they were used. As such, the baseline phase serves as a *comparison* with the treatment phase.

6.5. STRATEGIES TO BRING ABOUT MOTIVATED CHANGE

Section Learning Objectives

- Define discriminative stimuli.
- Clarify how stimuli or antecedents become cues.
- List and describe the 6 antecedent manipulations.
- Define prompts.
- List, describe, and exemplify the four types.
- Define fading.
- List and describe the two major types of fading and any subtypes.
- Clarify the use of self-instructions in behavior modification.
- Clarify the use of social support in behavior modification.
- Describe how shaping can be used to modify a behavior.
- Describe strategies used to modify fear and anxiety behaviors.
- Describe strategies used to modify habit behaviors.
- Describe strategies used to modify maladaptive cognitions.

- Clarify how to use differential reinforcement in a treatment plan.
- Describe and exemplify the use of the token economy in a treatment plan.
- List, describe, and exemplify punishment procedures.

6.5.1. Overview

To start, recall that antecedents are the stimuli that lead to our behavior. We have seen this presented as $S \rightarrow R \rightarrow C$ or $A \rightarrow B \rightarrow C$. The frameworks are the same. S and A are stimuli and antecedents and refer to environmental or internal causes of our behavior. R and B are the behavior(s) we are making and can include both the desirable behavior and any problem behavior(s). C is the consequence(s) of our behavior. When coming up with a treatment plan, you will likely use at least one for all three components. Antecedents are especially important because if you have all the right triggers or cues in place, you are more likely to make the desired behavior and avoid making undesirable ones.

6.5.2. Antecedent Focused Strategies

6.5.2.1. Antecedent manipulations. One critical step is to exert control over the cues for the behavior and when these cues bring about a specific behavior, we call them **discriminative stimuli** (also called a SD). So, what makes an antecedent a cue for a behavior? Simply, the behavior is reinforced in the presence of the specific stimulus and not reinforced when the stimulus or antecedent is not present. The strategies we will discuss center on two ideas: we can modify an existing antecedent or create a new one. With some abusive behaviors centered on alcohol, drugs, nicotine, or food, the best policy is to never even be tempted by the substance. If you do not smoke the first cigarette, eat the first donut, take the first drink, etc. you do not have to worry about making additional problem behaviors. It appears that abstinence is truly the best policy.

But what if this is not possible or necessary? The following strategies could be attempted:

- **Create a Cue for the Desirable Behavior** - If we want to wake up in the morning to go the gym, leave your gym clothes out and by the bed. You will see them when you wake up and be more likely to go to the gym. If you are trying to drink more water, take a refillable water with you to classes. Hiking around a campus all day can be tough and so having your water bottle will help you to stay hydrated.
- **Remove a Cue for the Undesirable or Problem Behavior** - In this case, we are modifying an existing antecedent/cue. Let's say you wake up in the morning, like I do, and get on your phone to check your favorite game. You initially only intend to spend a few minutes doing so but an hour later you have done all the leveling up, resource collecting, candy swiping, structure building, etc. that you can and now, you have taken your time to do a work out. In this case, the phone use is a

problem behavior because it interferes or competes with the execution of the desirable behavior of going to the gym. What do you do? There is a simple solution - don't leave your phone by your bed. If it is not in the room, it cannot be a reminder for you to engage in the problem behavior. The phone usage in the morning already exists as a behavior and the phone serves as a cue for playing games. You enjoy playing the games and so it is reinforcing. If the phone is not present then the behavior of playing the game cannot be reinforced and the cue loses its effectiveness. In the case of water, if we do not carry tea with us we cannot drink it, but can only drink our water bottle, thereby meeting our goal.

- **Increasing the Energy Needed to Make a Problem Behavior** - Since the problem behavior already exists and has been reinforced in the past, making its future occurrence likely in the presence of the stimulus, the best bet is to make it really hard to make this unwanted behavior. Back to the gym example. We already know that our phone is what distracts us and so we remove the stimuli. One thing we could do is place the phone in the nightstand. Out of sight. Out of mind, right? Maybe. Maybe not. Since we know the phone is in the nightstand, we could still pull it out in the morning. If that occurs, our strategy to remove the cue for phone usage fails. We can still remove it, but instead of placing it in the nightstand, place it in the living room and inside our school bag. So now it is out of sight, out of mind, but also far away which will require much more physical energy to go get than if it was in the nightstand beside us. Think about this for a minute. The strategy literally means that we expend more energy to do the bad behavior, than.....
- **Decreasing the Energy Needed to Engage in the Desirable Behavior** - ...we would for the good behavior. Having our clothes by our bed is both a cue to go to the gym, but also, by having them all arranged in one place, we don't have to spend the extra time and energy running around our bedroom looking for clothes. We might also place our gym bag and keys by the door which saves us energy early in the morning when we are rushing out to the gym. What about for drinking water? Instead of carrying a water bottle with us we could just drink water from the water fountains at school. Okay. But let's say that you are standing in the hallway and the nearest water fountain is all the way up the hallway and near the door to exit the building. You can walk up the hall, bend over, push button, drink the water, remove your hand from the fountain, walk back down the hall, re-enter the classroom, and then take your seat. Not too bad, right? WRONG. If you had your water bottle in your backpack, you would only need to reach down, pick it up, open the bottle, take a drink, cap the bottle, and sit it back down on the floor or on the desk. You never have to leave your seat which means you are making far fewer behaviors in the overall behavior of drinking water, and so expending much less energy. Now you can use this energy for other purposes such as taking notes in class and raising your hand to ask a question.

Another way you can look at antecedents is to focus on the consequences. We might focus on the motivating properties of the consequence so that in the future, we want to make the behavior when the same antecedent is present. Notice the emphasis on *want*. Remember, you are enhancing the motivating properties. How do we do this?

- First, we could use what are called **establishing operations** or when we enhance the reinforcing

value of the consequence of a desirable behavior so that the same behavior occurs in the future when the same antecedent is present. Weight loss is really tough for most especially when there are so many yummy temptations out there. One solution is to find a cook book or at least recipes that you really, really like. This will create excitement when dinner time comes and make it more likely that you stay on your diet...and want to. You have enhanced the reinforcing value of eating healthy and so in the future when your significant other says "What's for dinner?" you can pull out your handy dandy recipe book/box/internet site and cook up something wonderful...and healthy. How about grocery shopping? If you want to eat healthy, don't go to the store hungry or in a state of food deprivation. If you do, you are creating an establishing operation, but this time for the undesirable behavior. Think about that. If you can enhance the reinforcing value of a desirable behavior you can do so for an undesirable one too. Be careful.

- Second, we could use an **abolishing operation** and reduce the reinforcing value of an undesirable behavior. In the case of buying healthy foods, junk food is less desirable if we go to the grocery store full, or in a state of satiety. Really want to avoid eating pizza late night? Look up the nutritional information which most every restaurant has available on their website or onsite. It is alarming just how calorie dense and fattening some of our favorites are. Ignorance is not bliss in this case. If you are on a weight loss program recording your calories via an app like Fitbit or MyFitnessPal is not only a smart strategy, but necessary. Weight loss occurs when we take in less calories than we expend. Knowledge is power...and the power to make better choices.

6.5.2.2. Prompting and fading. Another great strategy that can be used is what is called **prompts**, or a stimulus that is added to the situation and increases the likelihood that the desirable response will be made when it is needed. The response is then reinforced. There are four main types of prompts:

- **Verbal** - Telling the person what to do
- **Gestural** - Making gestures with your body to indicate the correct action the person should engage in
- **Modeling** - Demonstrating for the person what to do
- **Physical** - Guiding the person through physical contact to make the correct response

These are all useful and it is a safe bet to say that you have experienced all of them at some point. How so? Let's say you just started a job at McDonald's. You were hired to work the cash register and take orders. On your first day you are assigned a trainer and she walks you through what you need to do. She might give you verbal instructions as to what needs to be done and when, and how to work the cash register. As you are taking your first order on your own, you cannot remember which menu the Big Mac meal fell under. She might point in the right area which would be making a gesture. Your trainer might even demonstrate the first few orders for you before you take over so that you can model or imitate her. And finally, if you are having problems, she could take your hand and touch the Big Mac meal key, though this may be a bit aversive for most and likely improper. The point is that the trainer could use all of these prompts to help you learn how to take orders from customers. Consider that the prompts are in

a sort of order from the easiest or least aversive (verbal) to the hardest or most aversive (physical). This will be important in a bit.

It is also prudent to reinforce the person when they engage in the correct behavior. If you told the person what to do, and they do it correctly, offer praise right away. The same goes for them complying with your gesture, imitating you correctly, or subjecting themselves to a physical and quite intrusive or aversive prompt.

When you use prompts, you also need to use what is called **fading**, which is the gradual removal of the prompt(s) once the behavior continues in the presence of the SD. Fading establishes a discrimination and in the absence of the prompt. Eventually, you transfer stimulus control from the prompt to the SD.

Prompts are not a part of everyday life. Yes, you use them when you are in training, but after a few weeks, your boss expects you to take orders without even a verbal prompt. To get rid of prompts, you can either fade or delay the prompts. **Prompt fading** is when the prompt is gradually removed as it is no longer needed. *Fading within a prompt* means that you use just one prompt and once the person has the procedure down, you stop giving them a reminder or nudge. Maybe you are a quick study and the trainer only needs to demonstrate the correct procedure once (modeling). The trainer would simply discontinue use of the prompt. You can also use what is called *fading across prompts*. This is used when two or more prompts are needed. Maybe you are trying to explain an algebraic procedure to your child who is gifted in math. You could start with a verbal prompt and then move to gestural or modeling if he/she has a bit of an issue. Once the procedure is learned, you would not use any additional prompts. You are fading from least to most intrusive. But your other child is definitely not math oriented. In this case, modeling would likely be needed first and then you could drop down to gestural and verbal. This type of fading across prompts moves from most to least intrusive. Finally, **prompt delay** can be used and is when you present the SD and then wait for the correct response to be made. You delay delivering any prompts to see if the person engages in the desirable behavior. If he or she does, then no prompt is needed, but if not, then you use whichever prompt is appropriate at the time. For instance, you might tell your child to do the next problem and then wait to see if he/she can figure it out on their own. If not, you use the appropriate prompt.

6.5.2.3. Self-instructions. Earlier, I indicated that leaving cues for you to make the desired behavior is an effective antecedent manipulation. I have also said that **self-instructions**, or statements you write or say to yourself as positive affirmations and motivational tools, could be used too. These statements should remind yourself of what the desirable behavior is, why you are doing it, and what you hope to gain from it (your final goal). This may seem like a simple strategy and it is. It is low cost, low stakes, but very important. People use motivational statements all the time and even buy posters with their words printed across and hang them up. This is no different and you can hang these self-instructions of what to do around your house, in your car, have them on your phone, etc. If you are developing a self-modification plan, write them yourself and if you are working with a client on a behavior modification/ intervention plan, have them develop the statements. Then hang them up. Use them to also replace self-defeating statements such as saying, "I am fat." Instead, say, "I can lose the

weight and be healthy.” When you need your statements, say them out loud. If you are having a moment of weakness in the grocery store (i.e. you forgot to go satiated), then use the statements to walk right by the junk food aisle).

6.5.2.4. Social support is a crucial strategy to implement in behavior modification. When executing a self-modification plan, we all will have moments of weakness and need reassurance from those closest to us. Or better yet, maybe we are doing really well and compliments and ‘likes’ on social media motivate us all the more. Social support has been shown to buffer against the negative effects of stress and when we make a public declaration of our goal, we are more likely to stick with it. Prompts require another person’s involvement in our plan and so go hand-in-hand with social support. Cues and self-instructions do not.

Be careful with social support though. It may be that the desired behavior we wish to make is being thwarted by tempting situations and people. In this case, you would likely not want to engage in social support, especially with the person bringing temptation into your plan. Maybe you want to stop eating Taco Bell late at night and do so because your roommate is always hungry late at night. This individual would likely not be a useful player in your behavior modification plan. *Be aware of the effect other people have on your behaviors.*

6.5.3. Behavior Focused Strategies

Now that we have covered procedures to use for controlling or manipulating the antecedent let’s move to what can be done about the behavior. This is really a set of unique procedures particular to special situations such as creating a behavior that a person or animal would not normally know to do, reducing fear and anxiety, stopping bad habits, and replacing or removing unproductive thoughts. We will cover a few.

6.5.3.1. Shaping. Sometimes there is a *new(ish)* behavior we want a person or animal to make but they will not necessarily know to make it, or how to make it. As such, we need to find a way to mold this behavior into what we want it to be. The following example might sound familiar to you. Let’s say you want a friend to turn on the lights in the kitchen. You decide not to tell them this by voice, but play a game with them. As they get closer to light switch you say “Hot.” If they turn away or do not proceed any further you say “Cold.” Eventually, your statements of “Hot” will lead them to the switch and they will turn it on which will lead to delivery of a great big statement of congratulations. “Hot” and “Thank you” are reinforcers and you had them make approximations of the final, desired behavior of turning on the light. We called this ‘hot potato-cold-potato’ when we were a kid but in applied behavior analysis this procedure is called **shaping by successive approximations** or **shaping** for short. For shaping to work, the successive approximations must mimic the target behavior so that they can serve as steps toward this behavior.

6.5.3.2. Modifying fear and anxiety behaviors. To reduce or eliminate fear and anxiety, a few strategies can be used to include relaxation techniques and systematic and in-vivo desensitization. I will also mention a respondent conditioning technique called flooding and an observational learning strategy called modeling.

Maybe the simplest, and most important technique, is to just relax. Relaxation is designed to decrease autonomic nervous system (ANS) arousal that occurs with fear and anxiety. It comes in many forms and you are best to select the one you are most comfortable with. You must be able to use it quickly when fear and anxiety arise. Three common techniques include:

1. **Diaphragmatic breathing** - also called deep breathing; person breathes in a deep, slow rhythmic fashion. Many students use this technique right before giving an oral presentation.
2. **Progressive Muscle Relaxation** or **tension-release method** - person systematically tenses and relaxes each of the major muscle groups in the body and so they become more relaxed than in their initial state.
3. **Attention Focused Exercises** - relaxation occurs when attention is directed to a neutral or pleasant stimulus. This removes attention from the anxiety producing stimulus. It includes meditation, guided imagery, and hypnosis. Before giving that presentation, you might imagine being at home, safe in your room, in your bed, and under your covers. Or you might imagine anywhere else you would rather be such as at the beach or amusement park. Heck, you might even use the common strategy of imagining the audience in their underwear.

These techniques are easy to learn but must be practiced. Once learned, the new behavior, essentially an alternative behavior, will be used to replace the problem behavior of fear/anxiety. It is important to practice using it as often as possible so that the response generalizes across environments and situations. When needed, it will be easily available to you as a coping mechanism to avoid anxiety or fear. Essentially, it can become NR and is used as a type of avoidance behavior (taking away something aversive which is the fear and anxiety which makes the behavior of relaxing more likely in the future when we experience fear and anxiety). It is a good idea to pair relaxation techniques with self-instructions such that the latter serves as a reminder to do the former. But the self-instructions should be positive statements to help undue the ill effects of self-defeating statements. These techniques can be used with more than just fear and anxiety procedures too. You will find yourself selecting them as a strategy for a variety of target behaviors encountered in our exercises.

Relaxation techniques are important for the second major treatment strategy - **desensitization**. It may be classified as *systematic* in which the client imagines fear or anxiety producing scenarios or *in-vivo* in which the client experiences the fear/anxiety producing situations firsthand. To use systematic or in-vivo desensitization, you must learn at least one relaxation technique mentioned above. Once you do this, develop a fear hierarchy from the least fearful/anxiety producing to the most. Then, the client practices making the relaxation technique while the therapist has him or her imagine the scene from the hierarchy or experiences each situation. To help you remember what the two terms indicate, know

that *in-vivo* is Latin for in life. Hence, *in vivo* is a real-life exposure while systematic is imagined.

Next, **flooding** is a respondent condition technique in which the person is exposed to the feared stimulus at full intensity for a prolonged period. If you have a fear of clowns, you would be thrown into a room of clowns in this method. Of course, initially, your anxiety would be greatly heightened. But over time, and with no negative events occurring, your anxiety would decrease through extinction.

Finally, another non-operant conditioning procedure is to use what observational learning theorists call **modeling**. To help a person become less fearful or anxious, you could show them a video or live demonstration of a model approaching the feared stimulus or engaging in a fear-producing activity, and having nothing bad happen to him or her. Upon seeing this, the client should feel more comfortable making the same behavior.

6.5.3.3. Habit behaviors. Dictionary.com defines **habit** as “an acquired behavior pattern regularly followed until it has become almost involuntary” (<http://www.dictionary.com/browse/habit>). The habits do not harm anyone, other than possibly the person making them, but can be annoying for others if they increase in frequency, duration, and/or intensity. When this occurs, we are said to have a **habit disorder**. Habit behaviors take three main forms: nervous habits, tics, and stuttering.

So how do we go about ending or reducing habit behaviors? Treatment includes the use of a habit reversal procedure with two main steps or components: awareness training and a competing or incompatible response.

To start, the client must be aware of exactly what the habit is, when it occurs, in what situations, and with whom around. A clear behavioral definition must be stated and explained to the client so that he or she can identify when the behavior is about to start or is occurring. This stage or step is called **awareness training**.

Next, a **competing response** must be identified that is incompatible with the habit and makes its occurrence nearly impossible or difficult. If you are trying to stop nail biting, you can use a clenched fist, sitting on one's hands, or holding a pencil as a competing response. You could even just groom your nails instead. If you have problems with motor tics, tense the affected body part and keep it still such as with head twitching. Tensing neck muscles and placing your chin against your chest will make head shaking or neck turning difficult to do. If you bite your lips, keep your lips and bottom teeth slightly separate. As a child, I stuttered and though today I do not daily, I find that there are certain trigger words that will elicit stuttering. Unfortunately, two of these trigger words are ones I at times use on a regular basis in classes - statistics and organizational (as in I/O psychology). Statistics is the main issue and to stop the stuttering before it starts, I will substitute statistics with stats, a one syllable word and much easier to say, or will pause in between saying the word such as 'Sta' and 'tistics." The pause is very brief and I do not make it noticeable. I then continue with my lecture as normal. This competing response allows me to say the word statistics in class and not endure any embarrassment from stuttering the word, which I have done in front of large lecture halls before. In terms of organizational, I

usually just say I/O psychology and have the full word, with acronym, on the slide being displayed. This way I can get away with the short hand and if a student asks what it means, I just point to it on the slide.

The competing response should be made by the same body part involved in the nervous habit or tic, and should be **practiced** in imagined situations. Imagine being in the situation that causes the habit, which you would have identified in your functional assessment, and rehearse making the competing response in your mind, called “mental practice.” This increases the likelihood of making the competing response when the habit occurs and so leads to generalization.

Now move to **making the competing response in real life**. Social support is key and significant others can offer the encouragement needed to make the competing response, reinforcement once you made it, but maybe more importantly, they can utilize prompts to do so. Keep your reasons for making the behavior change in mind and utilize self-instructions as reminders when your motivation is low. Provide your own reinforcers to encourage making the competing response, and if they are something you really enjoy or are looking forward to, they can serve as establishing operations.

Finally, review how things went with your **therapist**. Remember, he or she cannot be with you 24/7 and so you need to talk about both your successes and failures, and how they made you feel. If you were not able to make the competing response did the habit cause you embarrassment as stuttering or a tic might do, or just lead to frustration as any of the three might? Figure out if there are other antecedent triggers for the habit that might have been missed by the functional assessment. Then you can always practice making the competing response in these situations before doing it in real life.

6.5.3.4. Procedures for maladaptive cognitions. The final set of procedures focus specifically on what we think or feel, as part of the definition of behavior. The word **cognition** is used, which is the same as saying a thought. We will discuss several strategies that can be used to change these unwanted, maladaptive cognitions, whether they are present as an *excess* such as with paranoia, suicidal ideation, or feelings of worthlessness; or as a *deficit* such as with self-confidence and self-efficacy.

According to the National Alliance on Mental Illness (NAMI), **cognitive behavioral therapy** “focuses on exploring relationships among a person’s thoughts, feelings and behaviors. During CBT a therapist will actively work with a person to uncover unhealthy patterns of thought and how they may be causing self-destructive behaviors and beliefs.” CBT attempts to identifying negative or false beliefs and restructure them. They add, “Oftentimes someone being treated with CBT will have homework in between sessions where they practice replacing negative thoughts with more realistic thoughts based on prior experiences or record their negative thoughts in a journal.” For more on CBT, visit: <https://www.nami.org/Learn-More/Treatment/Psychotherapy>. Some commonly used strategies include cognitive restructuring, cognitive coping skills training, and acceptance techniques.

A second major strategy is to use what is called **cognitive coping skills training**. This strategy

teaches social skills, communication, and assertiveness through direct instruction, role playing, and modeling. For social skills, identify appropriate social behavior such as making eye contact, saying no to a request, or starting up a conversation with a stranger and whether the client is inhibited from making this behavior due to anxiety. For communication, determine if the problem is with speaking, listening, or both and then develop a plan for use in various interpersonal situations. Finally, assertiveness training aids the client protect their rights and obtain what they want from others. Those who are not assertive are often overly passive and never get what they want, or are overly aggressive and only get what they want. Treatment starts with determining situations in which assertiveness is lacking and coming up with a hierarchy of assertiveness opportunities. Least difficult situations are handled first, followed by more difficult situations, all while rehearsing and mastering all the situations present in the hierarchy. For more on these techniques, visit <http://cogbtherapy.com/cognitive-behavioral-therapy-exercises/>.

Finally, **acceptance techniques** can be used to reduce a client's worry and anxiety. Life involves a degree of uncertainty and at times we need to just accept this. Techniques might include weighing the pros of fighting uncertainty against the cons of doing so. The cons should outweigh the pros and help you to end the struggle and accept what is unknown. Chances are you are already accepting the unknown in some areas of life and identifying these can help you to see why it is helpful in these areas, and how you can also think like this in more difficult areas. Finally, does uncertainty unnecessarily lead to a negative end? We may think so but review of the evidence for and against this statement will show that it does not and reduce how threatening it seems.

6.5.4. Consequence Focused Strategies

We now turn our attention to the last part of the ABCs of behavior, and specifically, the consequence. Our discussion will cover reinforcers, differential reinforcement, the token economy, self-praise, and punishment. We will also turn our attention back to social support and how it relates to the aforementioned strategies.

6.5.4.1. Differential reinforcement. **Differential reinforcement** is when we attempt to get rid of undesirable or problem behaviors by using the positive reinforcement of desirable behaviors. Hence, both reinforcement and extinction are occurring, the former in terms of the desired behavior and the latter in terms of the undesirable or problem behavior. Differential reinforcement does not utilize punishment but is a positive approach to reward people for behaving in the desired manner.

Differential reinforcement takes on many different forms as described below:

- **DRA or Differential Reinforcement of Alternative Behavior** - this is when we reinforce the desired behavior and do not reinforce undesirable behavior. Hence, the desired behavior increases and the undesirable behavior decreases to the point of extinction. The main goal of DRA is to increase a desired behavior such as a student who frequently talks out of turn. The

teacher praises the child in front of the class when he raises his hand and waits to be called on and does not do anything if he talks out of turn. Though this may be a bit disruptive at first, if the functional assessment reveals that the reinforcer for talking out of turn is the attention the teacher gives, not responding to the child will take away his reinforcer. This strategy allows us to use the reinforcer for the problem behavior with the desirable behavior. Eventually, the child will stop talking out of turn making the problem behavior extinct.

- **DRO or Differential Reinforcement of Other Behavior** - What if we instead need to eliminate a problem behavior - i.e. reducing it down to no occurrences? DRO is the strategy when we deliver a reinforcer contingent on the absence of an undesirable behavior for some period. We will need to identify the reinforcer for the problem behavior and then pick one to use when this behavior does not occur. Determine how long the person must go without making the undesirable behavior and obtain a stopwatch to track the time. Do not reinforce the problem behavior and only reinforce the absence of it using whatever reinforcer was selected, and if it is gone for the full-time interval. If the problem behavior occurs during this time, the countdown resets. Eventually the person will stop making the undesirable behavior and when this occurs, increase the interval length so that the procedure can be removed. If a child squirms in his seat, the teacher might tell him if he sits still for 5 minutes he will receive praise and a star to put on the star chart to be cashed in at a later time (this is a token economy described in the next section). If he moves before the 5 minutes is up, he has to start over, but if he is doing well, then the interval will change to 10 minutes, then 20 minutes, then 30, then 45, and eventually 60 or more. At that point, the child is sitting still on his own and the behavior is not contingent on receiving the reinforcer. What I just described is how to use a DRO procedure and then how to get rid of it which will be critical in the maintenance phase.
- **DRL or Differential Reinforcement of Low Rates of Responding** - There are times when we don't necessarily want to completely stop a behavior, or take it to extinction, but reduce the occurrence of a behavior. Maybe we are the type of person who really enjoys fast food and eat it daily. This is of course not healthy but we also don't want to go cold turkey on it. We could use DRL and decide on how many times each week we will allow ourselves to visit a fast food chain. Instead of 7 times we decide that 3 is okay. If we use *full session DRL* we might say we cannot exceed four times going to McDonalds in a week (defined as Mon - Sun). If we eat at McDonalds, Burger King, Wendy's, etc. four times on Monday but do not go again the rest of the week we are fine. Full session simply means you do not exceed the allowable number of behaviors during the specified time period. Eating fast food four times in a day is definitely not healthy, and to be candid, gross, so a better approach could be to use *spaced DRL*. Now we say that we can go to a fast food restaurant every other day. We could go on Monday, Wednesday, Friday, and Sunday. This works because we have not exceeded 4 behaviors in the specified time of one week.
- **DRI or Differential Reinforcement of Incompatible Behavior** - Now what if we have to substitute the behavior of a child such that he has to sit appropriately in his seat instead of walking around the room. Sitting is incompatible with walking around. DRI delivers a

reinforcer when another behavior is used instead of the problem behavior. To say it another way, we reinforce behaviors that make the undesirable or problem behavior impossible to make. DRI is effective with habit behaviors such as thumb sucking. We reinforce the child keeping his hands in his pocket. Or what if a man tends to make disparaging remarks at drivers who cut him off or are driving too slow (by his standard). This might be a bad model for his kids and so the man's wife tells him to instead say something nice about the weather or hum a pleasant tune when he becomes frustrated with his fellow commuters. These alternative behaviors are incompatible with cursing and she rewards him with a kiss when he uses them.

Table 6.2: Expected Outcome and Type of Differential Reinforcement to Use

Expected Outcome	Differential Reinforcement Procedure Used
Increase a desired behavior	DRA
Eliminate a problem behavior	DRO
Reduce the occurrence of a problem behavior	DRL
Substitute a problem behavior	DRI

6.5.4.2. Token economy. The basic premise is that the individual is provided with something that represents desired reinforcers and takes that “something” and cashes it in later for those reinforcers. You do not receive the reinforcer right away, but at a later time, and like shopping at Walmart, you use your tokens, the money, to purchase something you really want, the reinforcer. The token economy can be used at home by parents trying to get a child to complete chores, take a bath before playing video games, eat breakfast, behave well with siblings, or leave with enough time to get the bus or arrive at school before the bell rings. In the classroom, a teacher can use a token economy to encourage students to study hard, stay in their seat during quiet time, put away class materials, talk with an inside voice, behave on the playground, throw away their trash at lunch time, or to walk and not run through the halls. At work, an employer may wish to reward employees for working safely, going above and beyond by serving on committees, being on time, exceeding performance standards, or positively approach all aspects of their job. In a recovery center, nursing home, or prison setting, tokens may be awarded when patients take their medications or are compliant with the direction of staff members.

A token economy is a fun system that allows the person to earn up tokens and then cash them in for some type of reinforcer - whether a consumable, activity, privilege, or tangible. The **tokens** are accrued

(and accumulated over time) once the target behavior occurs, as described clearly in the behavioral definition, and by themselves has no meaning. That said, it is fine to praise the person as they receive their tokens (a second PR, the first being the receipt of the tokens). Be clear on how many tokens are earned for engaging in the desired behavior(s).

Tokens gain meaning when they are associated with **backup reinforcers** or the regular reinforcers the person has in their life. This association occurs because the individual learns that he or she can take some number of tokens and cash them in for some amount of reinforcer. When we go to the store to purchase milk, we read the label and see that the gallon costs \$3.29. We pick it up, go to the cashier, and when prompted, hand the cashier our money to complete the purchase. The token economy operates in the same exact fashion. How many tokens are needed to purchase a backup reinforcer is called the **exchange rate**. What can serve as a *token*? Bingo chips, stars on a chart, points, check marks, or poker chips can all be used, and it must be clear how many tokens are earned for engaging in a certain level of the behavior.

6.5.4.3. Punishment. Probably the most well-known of all punishment procedures is the time out. Simply, a **time out** is when a person is removed from an activity because they are engaging in an undesirable or problem behavior. If effective, the time out should result in a reduction of the problem behavior in the future and so functions as a negative punishment (NP; taking away something good - the fun activity which serves as a reinforcement - making a behavior less likely in the future). Time outs take two forms - exclusionary or non-exclusionary. *Exclusionary time outs* are when the person is removed from the actual location where the problem behavior is occurring. The best example, and the one you might be thinking of, is when a teacher sends a child to the principal's office. Obviously then, a child is not removed from the situation in a *non-exclusionary time out* but cannot partake in the reinforcing activity.

6.5.4.4. Response cost. Simply, a **response cost** is a type of negative punisher in which some amount of a reinforcer is removed when a problem/undesirable behavior is engaged in.

6.5.4.5. Overcorrection procedures. Did you ever throw a tantrum and trash your room? Have you become so upset at someone that you yelled at them for a period of time? If so, you engaged in a problem behavior and likely were punished for doing so. If in the context of your childhood home, your parents may have made you clean your room up and make it look better than it did before, or be extra nice to your sibling. These are types of **overcorrection procedures** or when a person is expected to engage in effortful behavior for an extended period after the occurrence of an undesirable behavior. The example of cleaning the room is called *restitution*, or restoring the environment to a condition that is better than it was before the undesirable behavior, and being super nice is called *positive practice*, or engaging in the correct form of behavior over and over again.

6.6. IMPLEMENTING THE PLAN

Section Learning Objectives

- Define the treatment phase.

Now that you have a behavior modification plan to change your target behavior for the good, it is time to implement the plan and see how it works. The **treatment phase** is when you employ all antecedent, behavior, and consequence-focused strategies. In the grand scheme of scientific research and specifically experiments, the treatment phase, but more so the strategies, are your IV or independent variable. Remember, this is the one that is manipulated. You have chosen certain strategies and decided to use them in a specific way which is the essence of manipulation. No matter what, manipulation is at work but so is measurement. Recall that your behavior is measured via your goals and behavior counts, and is the dependent variable or DV.

6.7. EVALUATING THE PLAN'S SUCCESS

Section Learning Objectives

- Clarify what to do if you have to change your target behavior.

As you are going through your plan it is a good idea to see how you are doing. Fortunately, you are collecting a great deal of data and so have all you need to make a determination.

If you need to adjust your plan, you need to figure out what is making your plan difficult to achieve. Likely, you will have at least one issue with your antecedents, behavior, and/or consequences. Look

closely at the data you gathered and your notes in the journal. It might be that you set unrealistic goals, had a faulty criterion for when to move from one goal to the next, had issues with how to record your data, your strategies may not have worked, there were temptations in your environment you were not aware of, or your social support really was not supportive. Of course, there can be countless other issues that you may encounter.

Once you have figured out needed changes to your plan, implement them. Continue the process of evaluation and adjustment until your plan works or you just cannot seem to reduce the unwanted behavior or increase a desirable one.

Assuming your plan works and the behavior has changed in the hypothesized manner, you will proceed to the maintenance phase.

6.8. MAINTENANCE PHASE AND RELAPSE PREVENTION

Section Learning Objectives

- Describe the function of the maintenance phase.
- Differentiate a lapse and a relapse.

6.8.1. Maintenance Phase

When planning to change our behavior we cannot lose sight of the fact that eventually, we will obtain our final goal. At this point, the target behavior is now occurring habitually or without conscious effort, or due to use of the many strategies we selected. Once this occurs, we need to transition from treatment phase to maintenance phase. Recall that the treatment phase is when we manipulate variables, or in this case use the various antecedent, behavior, and consequence focused strategies we have settled on being the right combination to successfully change our behavior. These cannot remain in effect for the duration of our life, so we must phase them out...well, most of them. Some strategies you will want to keep in place.

As with all things in life, we hit bumps in the road. We hit them when planning our behavior modification plan, likely hit a few as we employed the treatment, and even in maintenance phase we may hit some. In fact, there are two types of issues we may encounter during the maintenance phase:

- **Maintenance Problem** – Though we have gone to great lengths to ensure our target behavior stays at our desired level, based on the final goal, at times we falter. This is not necessarily due to a return to problem or undesirable behavior, but maybe just a loss of motivation for walking your dog every night, reading at bed time, going to the gym, drinking water, studying more regularly, etc.
- **Transfer Problem** – Recall that we want to generalize our new behavior beyond just training situations/environments. If we establish good study habits when in our dorm, we want to do the same when studying in the student union or in the library. If we go to the gym regularly while at school we want to do so at home on break. Or maybe you are studying well in all places, but this positive behavior only occurs for classes in your major. In all other classes, your poor study habits have not changed. So you are performing as well as you want to in some instances, but not in all instances. The desirable behavior has not transferred or generalized as expected.

6.8.2. Relapse Prevention

Before understanding how to prevent relapse, we have to distinguish the terms lapse and relapse. Simply, a **lapse** is when we make a mistake or slip up. Consider the expression, “Having a lapse in judgment.” This implies that we generally make sound decisions but in this one instance we did not. We made a mistake. What we don’t want is an isolated incident becoming a pattern of behavior. When this occurs, we have a **relapse**. Don’t beat yourself up if a lapse occurs. Our problem behavior will inevitably return at some point. We just don’t want it sticking around for the long term.

There are people and things that tempt us and situations or places that lead us to temptation more than others. To avoid a lapse turning into a relapse, take special note of high-risk situations and environments, and the people who are present when we cave into temptation. Keeping good records of the ABCs of behavior, and your journal, will help you to identify these situations and people. Then you can develop new plans to deal with them, or to re-establish old ones.

For more information on relapse and how to prevent it, see Module 17 of the behavior modification textbook.

Module Recap

In Module 6, we discussed a willingness to change from the perspective of DiClimente’s process of change and an analysis of the pros and cons of changing or staying the same. We also discussed self-efficacy and how believing in ourselves will make success more likely. Of course, success is never guaranteed and everyone makes mistakes or gives in to temptation. These lost battles do not mean the

war is lost though.

We then discussed the need to precisely define our target and competing behaviors and gave examples of behaviors you might have chosen for your project. Once a precise definition is in place, we can formulate goals for how much we wish for the behavior to increase or decrease. We can also set short term or proximal goals to help us achieve the much larger or distal goal. Think about writing a 10-page paper. It is easier to say I am going to write the first section today, the next tomorrow, and then the final section the day after. Then I will revise and edit, and print the paper to be submitted. These subgoals make the much larger task more manageable and easier to achieve. As this works with writing a paper, so too it can work with changing behavior.

Next we discussed ways to collect data about the behavior, what causes it, and what maintains it. We also discussed the functional assessment and what information we can gain from it. The baseline phase is when we record occurrences of the behavior before any manipulation/strategies are employed.

We discussed the strategies used to change an unwanted behavior or to establish a new behavior. These focused on the antecedent and included goal setting, antecedent manipulations, discrimination and generalization, prompting and fading, programming, self-instructions, and social support. Then we discussed the strategies of shaping, fear and anxiety procedures, habit reversal, and cognitive behavior modification. We finished up by discussing consequence focused strategies focusing on the use of reinforcement and punishment.

As we wended down Module 6, we discussed the important issue of evaluating the plan and making adjustments as needed. Finally, we discussed the final stage of our behavior modification plan - maintenance. Knowing when to move to this stage is half the battle and the other half is knowing what to do when we have maintenance or transfer issues. Our bad behavior will rear its ugly head and this is to be expected, but what we need to do is prevent it from becoming the norm and not the exception. This is where relapse prevention comes in. Effective stress management can go a long way to helping us to avoid tempting people, things, situations, and environments, and to allow rational processes to govern our behavior.

This module was 50 pages in length. Be advised the textbook for PSYCH 328 is over 500 pages in length. So I gave you a quick overview of what you would cover in that class...and it was just about 10% of the full document.

III

PART III: PERSONALITY AND NEEDS

Part III. Personality and Needs

Module 7: Personality and Motivation

Module Overview

In Module 7, we will briefly discuss how personality can motivate behavior. To this end, we will focus on what personality is and review classic theories on how it develops or how traits manifest. We will next discuss how personality is used to deal with the world around us in terms of trait-environment correlation and trait-environment interaction. Finally, we will discuss what happens when personality goes awry. This discussion is not meant to be exhaustive but to at least allow you to see how motivation is sometimes determined by our personality. If you find this discussion to be interesting, I encourage you to take a class on personality theory during your academic career.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 321: Personality at Washington State University.

Module Outline

- 7.1. Defining Personality
- 7.2. Models of Personality
- 7.3. Personality and the Environment
- 7.4. Personality Disorders

Module Learning Outcomes

- Define personality and personality traits.
- Explain theories on personality and how it develops.
- Define and contrast trait-environment interaction and trait-environment correlation.
- Exemplify how personality disorders affect our motivated behavior.
- Demonstrate an awareness of when personality results in disordered or abnormal behavior.

7.1. DEFINING PERSONALITY

Section Learning Objectives

- Define personality.
- Define personality traits.
- Contrast personality and temperament.
- Describe characteristics of personality.
- Describe how personality is assessed.

7.1.1. Understanding Personality

To begin our discussion of personality, I will offer a definition but know that no universally accepted definition exists. For our purposes, **personality** is defined as an individual's unique pattern of thoughts, feelings, and behaviors that persists over time and across situations. **Personality traits** refer to a specific set of behaviors or habits that persist over time and across situations. Traits help us to understand why people respond the way they do when faced with a situation and why they approach certain situations and avoid others. We will define these two questions about behavior more specifically in Section 7.3.

Our personality changes across childhood and into adolescence and does so due to our **temperament** which is all of our behavioral and emotional predispositions present when we are born (McCrae et al, 2000). Temperament has been proposed to have nine dimensions to include: rhythmicity, intensity of reaction, distractibility, persistence, mood quality, activity level, responsiveness, approach/withdrawal, and ability to adapt to new experiences. (Thomas & Chess, 1977). From this, three types of temperament emerge. According to Thomas and Chess (1977) the types include *easy* children who deal with new events in a positive manner and are regular in their biological function. In contrast, *difficult* children cry more, are irritable, and generally negative when new events occur. They are also less regular in their biological function compared to easy children. Finally, *slow-to-warm-up* children display few intense reactions and are fairly positive once they have adapted to a new event or person. From these early styles of temperament our personality emerges over time. Temperament serves as a foundation of sorts.

7.1.2. Characteristics of Personality

It is not an overstatement to say that personality is *universal* meaning that everyone has one. Of course, our definition indicated that personality is unique, reflecting a great deal of *diversity*. Take a moment to describe your personality listing as many descriptive words that you can.....What did your list look like? How might it compare to your significant other? Your children? A classmate? A coworker? Your boss? A stranger on the street? I bet you have some personality traits in common. But what if you and another person both said you were affectionate or vindictive. Could there be differences in what these terms mean to the both of you? We might say personality falls on a continuum with not very affectionate on one end and very affectionate on the other end. You could assess this trait by asking yourself (and the other person) on a scale of 1-10 with 1 being not very and 10 being very, how affectionate are you? If you answered 8 and your counterpart answered 7, what does this mean? You both are affectionate but not to the same degree. Remember our earlier discussion of the dimensions of behavior from Module 6. Intensity was one such dimension. Does it apply in this scenario?

Personality is also *stable across time* meaning that it is consistent and persistent throughout life. As this is the case, it should also be predictable. We discussed this in Module 2 in relation to emotions. Affective traits are our more emotional personality traits and help to generally determine our response to different demands in our environment. This is not set in stone though as mood affects our emotional response. Though we might be affectionate in general, if our significant other makes a disparaging comment about us, we may not want to share a kiss or hug until the issue is resolved.

Is personality *inheritable* or is the *environment* responsible? A study from 2015 investigated this issue in animals and found that 52% of the variation was due to genetics and that this value is much higher for the heritability of personality compared to behaviors (Dochtermann, Schwab, & Sih, 2015). Do these cross-species findings hold up in humans? Twin studies typically attribute about half of the variance in personality to heritability/genes and the remaining half to the environment, but some studies suggest that this may not always be the case and parental relationships can enhance or diminish genetic and environmental influences (Krueger, South, Johnson, & Iacono, 2008). A recent meta-analysis confirmed this 2008 finding indicating that 40% of the variability in personality is genetic in origin and 60% is due to the environment (Vukasovic & Bratko, 2015). This said, childhood personality disorders have been found to have a substantial genetic component similar to heritability estimates in adults (Coolidge, Thede, & Jang, 2001) and that this earlier finding has been confirmed in more recent research of Cluster B personality disorders, defined in Section 7.4 (Torgersen et al., 2012).

7.1.3. Assessing Personality

Personality assessment involves the measurement of personality and is conducted by a wide range of psychologists from industrial/organizational psychologists who examine whether certain personality traits make a person more likely to succeed in a job, clinical psychologists who examine the personality traits of their clients to see if certain treatment methods will work better for them than others but also who measure to find maladaptive traits that may be causing problems in living, to the social

psychologist who measures authoritarianism or aggressive tendencies in participants.

Assessment involves making sure the personality test is **reliable** or provides consistent responses and **valid** meaning it measures what it says it measures. In the case of reliability, your score on a personality test today should be the same, or very close, tomorrow. In the case of validity, if a test is supposed to measure sensation seeking then if we compare it to a known test that has been confirmed to measure this trait, our results should be similar between the two tests. If for some reason the results for the new scale differ greatly from the old/existing scale, then our new scale is measuring some other aspect of personality and not the targeted trait of sensation seeking.

Personality assessments take on two main forms. First, **personality inventories** are objective tests that ask the participant questions about their behavior and feelings in different situations and uses numbered scales. They are also called self-report inventories and the Minnesota Multiphasic Personality Inventory or MMPI is one such example. A second example is the NEO-PI-R used to assess the Big Five traits.

Second, **projective tests** arose out of the work of Sigmund Freud and probe our unconscious mind. Individuals are presented with an ambiguous stimulus, such as an inkblot, and asked to interpret it. As the object is described, our innermost fears or needs are revealed. Examples include the Thematic Apperception Test (TAT; Morgan & Murray, 1935) which presents the client with an ambiguous picture to interpret and the Rorschach Inkblot Test, which presents inkblot cards to individuals one at a time.

7.2. MODELS OF PERSONALITY (AND DEVELOPMENT)

Section Learning Objectives

- Describe personality and how it develops according to Freud.
- Describe personality and how it develops according to Erikson.
- Describe personality according to Rogers.
- Describe personality according to Allport.
- Describe personality according to Cattell.
- Describe personality according to Eysenck.
- Describe personality according to the Five Factor Model.

In this section we will briefly explore models explaining personality and how it develops. This discussion

will cover psychodynamic theory, humanistic psychology, and trait theory.

7.2.1. Psychodynamic Theory

7.2.1.1. The work of Freud. Sigmund Freud's (1856-1939) psychoanalysis was unique in the history of psychology because it did not arise within universities as most of the major schools in our history did but so from medicine and psychiatry, it dealt with psychopathology, and examined the unconscious. Freud believed that consciousness had three levels - 1) **consciousness** which was the seat of our awareness, 2) **preconscious** that included all of our sensations, thoughts, memories, and feelings, and 3) the **unconscious** which was not available to us. The contents of the unconscious could move from the unconscious to preconscious, but to do so, it had to pass a Gate Keeper. Content that was turned away was said to be *repressed* by Freud.

According to Freud, our personality has three parts - the id, ego, and superego and from these our behavior arises. First, the **id** is the impulsive part that expresses our sexual and aggressive instincts. It is present at birth, completely unconscious, and operates on the *pleasure principle*, resulting in our selfishly seeking immediate gratification of our needs no matter what the cost. The second part of personality emerges after birth with early formative experiences and is called the **ego**. The ego attempts to mediate the desires of the id against the demands of reality, and eventually the moral limitations or guidelines of the superego. It operates on the *reality principle*, or an awareness of the need to adjust behavior to meet the demands of our environment. The last part of personality to develop is the **superego** which represents society's expectations, moral standards, rules, and our conscience. It leads us to adopt our parent's values as we come to realize that many of the id's impulses are unacceptable. Still, we violate these values at times which lead to feelings of guilt. The superego is partly conscious but mostly unconscious, and part of it becomes our conscience. The three parts of personality generally work together well and compromise, leading to a healthy personality, but if the conflict is not resolved, intrapsychic conflicts can arise and lead to mental disorders.

Personality develops over the course of five distinct stages in which the libido is focused on different parts of the body. First, **libido** is the psychic energy that drives a person to pleasurable thoughts and behaviors. Our life instincts, or **Eros**, are manifested through it and are the creative forces that sustain life. They include hunger, thirst, self-preservation, and sex. In contrast, **Thanatos**, or our death instinct, is either directed inward as in the case of suicide and masochism or outward via hatred and aggression. Both types of instincts are sources of stimulation in the body and create a state of tension which is unpleasant, thereby motivating us to reduce them. Consider hunger, and the associated rumbling of our stomach, fatigue, lack of energy, etc., that motivates us to find and eat food. If we are angry at someone we may engage in physical or relational aggression to alleviate this stimulation.

Freud's psychosexual stages of personality development are listed below. Please note that a person may become **fixated** at any stage, meaning they become stuck, thereby affecting later development and

possibly leading to abnormal functioning, or psychopathology.

1. **Oral Stage** - Beginning at birth and lasting to 24 months, the libido is focused on the mouth and sexual tension is relieved by sucking and swallowing at first, and then later by chewing and biting as baby teeth come in. Fixation is linked to a lack of confidence, argumentativeness, and sarcasm.
2. **Anal Stage** - Lasting from 2-3 years, the libido is focused on the anus as toilet training occurs. If parents are too lenient children may become messy or unorganized. If parents are too strict, children may become obstinate, stingy, or orderly.
3. **Phallic Stage** - Occurring from about age 3 to 5-6 years, the libido is focused on the genitals and children develop an attachment to the parent of the opposite sex and are jealous of the same sex parent. The *Oedipus complex* develops in boys and results in the son falling in love with his mother while fearing that his father will find out and castrate him. Similarly, girls fall in love with the father and fear that their mother will find out, called the *Electra complex*. A fixation at this stage may result in low self-esteem, feelings of worthlessness, and shyness.
4. **Latency Stage** - From 6-12 years of age, children lose interest in sexual behavior and boys play with boys and girls with girls. Neither sex pays much attention to the opposite sex.
5. **Genital Stage** - Beginning at puberty, sexual impulses reawaken and unfulfilled desires from infancy and childhood can be satisfied during lovemaking.

The ego has a challenging job to fulfill, balancing both the will of the id and the superego, and the overwhelming anxiety and panic this creates. **Ego-defense mechanisms** are in place to protect us from this pain but are considered maladaptive if they are misused and become our primary way of dealing with stress. They protect us from anxiety and operate unconsciously, also distorting reality. Defense mechanisms include the following:

- **Repression** - When unacceptable ideas, wishes, desires, or memories are blocked from consciousness such as forgetting a horrific car accident that you caused. Eventually though, it must be dealt with or else the repressed memory can cause problems later in life.
- **Reaction formation** - When an impulse is repressed and then expressed by its opposite such as we are angry with our boss but cannot lash out at him, and so are super friendly instead. Another example is having lustful thoughts to a coworker than you cannot express because you are married, and so you are extremely hateful to this person.
- **Displacement** - When we satisfy an impulse with a different object because focusing on the primary object may get us in trouble. A classic example is taking out your frustration with your boss on your wife and/or kids when you get home. If we lash out at our boss we could be fired. The substitute target is less dangerous than the primary target.
- **Projection** - When we attribute threatening desires or unacceptable motives to others. An example is when we do not have the skills necessary to complete a task but we blame the other members of our group for being incompetent and unreliable.
- **Sublimation** - When we find a socially acceptable way to express a desire. If we are stressed out or upset, we may go to the gym and box or lift weights. A person who desires to cut things may

become a surgeon.

- **Denial** - Sometimes life is so hard all we can do is deny how bad it is. An example is denying a diagnosis of lung cancer given by your doctor.
- **Identification** - This is when we find someone who has used a socially acceptable way to satisfy their unconscious wishes and desires and we model that behavior.
- **Regression** - When we move from a mature behavior to one that is infantile in nature. If your significant other is nagging you, you might regress and point your hands over your ears and say, "La la la la la la la la..."
- **Rationalization** - When we offer well thought out reasons for why we did what we did but in reality these are not the real reason. Students sometimes rationalize not doing well in a class by stating that they really are not interested in the subject or saying the instructor writes impossible to pass tests.
- **Intellectualization**- When we avoid emotion by focusing on intellectual aspects of a situation such as ignoring the sadness we are feeling after the death of our mother by focusing on planning the funeral.

7.2.1.2. The work of Erikson. Before I close out the section on psychodynamic theories, I thought I would discuss one of the neo-Freudians who espoused a psychosocial theory of personality development. Erikson proposed that personality development occurred across eight stages. The first four corresponded to Freud's stages of psychosexual development (oral, anal, phallic, and latency), although Erikson placed less emphasis on sex as the basis of the conflict in each stage than Freud did.

- *Trust vs. Mistrust* - Lasting from birth to 18 months of age, the child develops a sense of trust or mistrust based on how well their needs are met by their parents. If met, they develop a sense of hope but if not, they come to see the world as harsh and unfriendly and may have difficulties forming close bonds with others later.
- *Autonomy vs. Shame and Doubt* - Lasting from 18-36 months, the child develops independence and autonomy if parents encourage exploration and freedom. If children are restricted and overly protected, they will feel shame, self-doubt, and unhappiness.
- *Initiative vs. Guilt* - Lasting from 3-6 years of age, children's views of themselves change as they face conflicts between their desire to act independent of their parents and do things on their own, and the guilt that comes from failure when they do not succeed. They see themselves as persons in their own right and make decisions on their own.
- *Industry vs. Inferiority* - Lasting from 6-12 years of age, the stage is characterized by a focus on efforts to meet the challenges presented by parents, peers, school, etc. Success at this stage brings about feelings of mastery and proficiency and fosters a sense of competence. Failure, on the other hand, leads to feelings of failure and inadequacy and kids may withdraw from both academic pursuits and interactions with peers.
- *Identity vs. Role Confusion* - Erikson's 5th stage occurring during adolescence. Teens try to figure

out what is unique and distinct about themselves, as well as their strengths and weaknesses. If successful, teens learn what their unique capabilities are and believe in them and develop an accurate sense of who they are. If they fail, teens may adopt socially unacceptable ways of expressing what they do not want to be and may have difficulty forming and maintaining long-lasting close personal relationships.

- *Intimacy vs. Isolation* - Occurring during early adulthood, young adults attempt to obtain intimacy in their relationships. If successful the young adult can form relationships with others on a physical, emotional, and intellectual level. If unsuccessful, the young adult may feel lonely and isolated and be fearful of relationships with others.
- *Generativity vs. Stagnation* - Lasting through middle adulthood, individuals either sink into complacency and selfishness or experience creativity and renewal. Parenthood is the most common route to generativity but a person can also experience generativity by working with the younger generation. Those who focus on the triviality of their own activity may come to feel that they have made a limited contribution to the world and that their presence has counted for little.
- *Ego Integrity vs. Despair* - Occurring during late adulthood, we look back over our life, evaluate it, and come to terms with the life we lived. Older adults strive to reach the ultimate goals - wisdom, spiritual tranquility, and an acceptance of their lives. If the person is successful at this stage, he/she will experience a sense of satisfaction and accomplishment called integrity, feel that they have realized and fulfilled the possibilities that have come their way in life, and have few regrets. If unsuccessful, he/she may feel dissatisfied with life; believe she had missed opportunities and not accomplished what she wanted; and become unhappy, depressed, angry, or despondent over what she has failed to do with her life. In other words, the person will despair.

Look closely at Erikson's theory. What types of behavior are we motivated to engage in throughout the life span?

Be advised that the work of Carl Jung and Alfred Adler are pertinent to our discussion of personality also, but that I will cover them in Section 9.2 of this book.

7.2.2. Humanistic Psychology

The humanistic perspective, or third force psychology, emerged in the 1950s and 1960s as an alternative viewpoint to the largely negative view of personality expressed by psychoanalysis and the view of humans as machines advocated by behaviorism. Its key features include an emphasis on personal fulfillment, emphasis on the present and hedonism, self-disclosure, valuing feelings over intellect, belief in human perfectibility, and seeing humans as unique and basically good. Key figures in

this area were Abraham Maslow and Carl Rogers, the former we will discuss in Module 8.

In terms of what Rogers (1951) said about personality and how it motivates our behavior, he believed that humans strive toward **self-actualization** or maximizing their potential. Rogers said a person's primary tendency is to maintain, actualize, and expand oneself (Rogers, 1961). He encouraged people to fully experience their emotion which can lead to growth. Rogers said that people who have experienced positive development become a **fully functioning person**. This includes being open to experience, being very creative, living every moment to the fullest, assuming responsibility for their decisions, and finally not deriving their sense of self from others.

He said we have two basic needs (Rogers, 1959). First, we need **positive regard by others** or when a person is loved and accepted exactly as they are right now. This should ideally be unconditional or not linked to specific behaviors. Evaluations by parents, teachers, and even school administrators begin to affect how children see themselves. If the evaluation matches the view the child has of him or herself, it is said to be congruent, and he/she evaluates him/herself as good. If it is incongruent, this can lead to mental disorders and/or anxiety. This incongruence occurs when people in the child's life make the child believe that his/her personal worth is contingent on acting right or saying the right things. Rogers called these **conditions of worth**. Second, we need **positive self-regard** or when we see ourselves in a favorable light and feel accepted by others because we have received **unconditional positive regard** or evaluation by another person not linked to our behavior.

7.2.3. Trait Theory

Earlier in the module we discussed personality traits and defined them as a specific set of behaviors or habits that persists over time and across situations. When we are more likely to behave in one way over another, we are said to be high on that specific trait such as reliability. If we are always on time and follow through with our promises, we are high in reliability but if we are not, we are low on the trait. As you will see, the existence of traits are agreed upon by trait theorists though the exact traits that make up personality vary.

7.2.3.1. Allport. Gordon Allport (1897-1967) distinguished between what he called common traits and personal dispositions. **Common traits** are constructs that allow individuals within a given culture to be compared while a **personal disposition** is unique to the person and so comparisons cannot be made. Personal disposition takes on three forms - cardinal, central, and secondary traits. First, **cardinal traits** are those that dominate the person's whole life. The trait affects almost every behavior the person makes. The person can become known for these traits such as Mother Theresa being known as compassionate. **Central traits** are central characteristics that form the basis of personality. They are the adjectives we use to describe another person. Usually, five to ten such adjectives are necessary to describe the essential characteristics of the person. Finally, **secondary traits** are tendencies that only appear in certain situations and are less crucial to one's personality. We can have many of these. An

example is becoming nervous/anxious when delivering a speech.

7.2.3.2. Cattell. Raymond Cattell (1905-1998) distinguished surface and source traits in his work. **Surface traits** are clusters of observable traits that seem to go together. They include honesty, integrity, and self-discipline. **Source traits** are the underlying variables that appear to determine the surface manifestation. They are believed to be few and are thought to determine behavior since they are reflected in a number of surface traits. Cattell used *factor analysis* to study traits and from this derived 16 basic source traits.

Note: Factor analysis is a correlational procedure that reduces large amounts of data into smaller, more manageable units. It is based on the idea that if several variables correlate highly with one another then some common dimension underlies them.

7.2.3.3. Eysenck. Hans Eysenck's (1916-1997) personality theory was based on three universal traits. First, for *introversion/extroversion*, introverts are reserved and quiet individuals who focus on inner experiences while extraverts are sociable and focus attention on other people and their environment. Second, for *neuroticism/emotional stability*, neurotics are unstable individuals who are moody, touchy, and become upset and emotional while emotionally stable individuals are even-tempered and emotionally constant. They are carefree and reliable. Finally, is *psychoticism* in which psychotics have difficulty dealing with reality and may be antisocial, cold, impulsive, egocentric and aggressive. They have some degree of psychopathology such as asocial and impulsive behavior or egocentricity.

7.2.3.4. Five-Factor Model (FFM) of personality. According to the FFM, there are five main domains of personality: neuroticism, extraversion, openness, agreeableness, and conscientiousness. **Neuroticism** is characterized by being anxious, insecure, or engaging in self-pity. **Extraversion** involves being sociable, seeking out social activity, being fun-loving, and affectionate while **agreeableness** is characterized by being trusting and helpful. **Openness** involves being imaginative, curious, unconventional, and independent while **conscientiousness** can best be described as being organized, hardworking, reliable, disciplined, and careful.

Costa and McCrae (1990) developed the NEO PI-R which is a concise measure of the 5 major domains of the FFM but also includes 6 facets that define each domain. The NEO allows for a comprehensive assessment of adult personality, as well as psychopathology in relation to the personality disorders. The facets include (McCrae and Costa, 1987):

- Neuroticism - anxiety, angry-hostility, depression, self-consciousness, impulsiveness, and vulnerability
- Extraversion - warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotions
- Openness - fantasy, aesthetics, feeling, actions, ideas, and values
- Agreeableness - trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness
- Conscientiousness - competence, order, dutifulness, achievement striving, self-discipline, and

deliberation

So how do these traits motivate or affect our behavior? More on that in the next section.

7.3. PERSONALITY AND THE ENVIRONMENT

Section Learning Objectives

- Contrast trait-environment interaction and trait-environment correlation.
- Exemplify how personality affects behavior.

In this section of Module 7, I want to briefly discuss how our personality affects our environment, or more so, how we interact with our environment. Though I can give a ton of examples, I want to allow you to explore this for yourself in whatever way your instructor sees fit, whether a discussion board post or paper. Also, we will return to the subject often throughout the rest of the book.

First, the **trait-environment interaction** says our personality traits influence how we react to our world. For instance, you come home after a long day at school to find your room trashed. If you are high in the facet of Angry-hostility under Neuroticism you may respond with frustration and confront your roommate in the least cordial of ways. But if you are high in the facet of Tender-mindedness (Agreeableness) or Warmth and Positive emotions under (Extraversion) you may still be upset but handle the situation in a much different way.

Second, **trait-environment correlation** says our personality traits affect the situations or opportunities we choose. For instance, a person who is high in the facet of Excitement Seeking will be more likely to go bungee jumping than someone who is not, or more introverted overall.

So how do the two ways personality affect us interact? An individual high in Conscientiousness would be happy if asked to lead a group where he/she could demonstrate competence, exert order, and deliberate (interaction). This same person would also seek out opportunities to lead a group and so may become president of their honor society or extracurricular activity (correlation).

What does the research says about various behaviors and the domains of the Five Factor Model that underlie them?

- Use of Facebook - Seidman (2013) showed in a sample of 184 undergraduates that participants who were conscientious were cautious in how they presented themselves online, while those who were neurotic, agreeable, and extraverted tended to present one's actual self. Also, neuroticism was positively associated with the ideal and hidden self-aspects.
- Online Gaming Addiction - Mehroof and Griffiths (2010) found that in relation to being addicted to online gaming, neuroticism, sensation seeking, trait anxiety, state anxiety, and aggression were significantly associated.
- Job Stress and Related Behaviors - Wang et al. (2011) found that for men who were high in neuroticism, job stress resulted in more active and more negative social behavior which they called a spillover effect while those low in the trait talked less and displayed less negative emotion or withdraw from social interactions. The same pattern was not found for women.
- Aggressive and Violent Behavior - Researchers found that Big 5 personality traits were related to aggressive behavior but that the exact relationship depended on the type of aggressive behavior and the trait measured. Openness and Agreeableness were both directly and indirectly linked to physical aggression but only indirectly related to violent behavior. Neuroticism was found to be directly and indirectly linked to physical aggression but not to violent behavior (Barlett & Anderson, 2012).
- Helping Behavior in Online Bullying - Another study examined what will make a participant come to the rescue of a person being bullied in a live Facebook discussion. Results showed that individuals high in empathy and extroversion and holding positive attitudes toward the homosexual community, were more likely to help (Freis & Gurung, 2013).
- Engaging in Counterproductive Work Behaviors (CWBs) - Bowling et al. (2011) found that employees high in conscientiousness and/or agreeableness were less likely to engage in CWBs while those low in these traits and high in neuroticism engaged in such behaviors.
- Political Attitudes - Research has shown that Openness is associated with liberalism while Conscientiousness is linked to conservatism (Mondak & Halperin, 2008).

7.4. PERSONALITY DISORDERS

Section Learning Objectives

- Describe the essential features of personality disorders.
- Contrast the three clusters.
- Describe the disorders occurring in each cluster.

7.4.1. Overview of Personality Disorders

Personality disorders have four defining features which include distorted thinking patterns, problematic emotional responses, over- or under- regulated impulse control, and interpersonal difficulties. While these four core features are common among all ten personality disorders, the DSM-5 (APA, 2013) divides the personality disorders into three different clusters based on symptom similarities.

Cluster A is described as the odd/eccentric cluster and consists of Paranoid Personality Disorder, Schizoid Personality Disorder, and Schizotypal Personality Disorder. The common feature between these three disorders is social awkwardness and social withdrawal (APA, 2013). Often these behaviors are similar to those seen in schizophrenia, however, they tend to be not as extensive or impactful of daily functioning as seen in schizophrenia.

Cluster B is the dramatic, emotional, or erratic cluster and consists of Antisocial Personality Disorder, Borderline Personality Disorder, Histrionic Personality Disorder, and Narcissistic Personality Disorder. Individuals with these personality disorders often experience problems with impulse control and emotional regulation (APA, 2013). Due to the dramatic, emotional, and erratic nature of these disorders, it is nearly impossible for individuals to establish healthy relationships with others.

And finally, **Cluster C** is the anxious/fearful cluster and consists of Avoidant Personality Disorder, Dependent Personality Disorder, and Obsessive-Compulsive Personality Disorder. Cluster C disorders have an overlap with anxiety and depressive disorders in terms of symptomology.

As you read through the general descriptions of the disorders below, keep in mind how their clinical presentation affects motivated behavior for people suffering from them on a daily basis.

7.4.2. Cluster A

Paranoid personality disorder is characterized by distrust or suspicion of others. Individuals interpret and believe that other's motives and interactions are intended to harm them, and therefore, are skeptical about establishing close relationships outside of family members—although at times even family member's actions are also believed to be malevolent. Individuals with *schizoid personality disorder* display a persistent pattern of avoidance of social relationships in addition to a limited range of emotion in their social relationships. They are seen as loners and are indifferent to criticism or praise from others. *Schizotypal personality disorder* is characterized by a range of impairment in social and interpersonal relationships due to discomfort in relationships, along with odd cognitive and/or perceptual distortions and eccentric behaviors (APA, 2013).

7.4.3. Cluster B

The essential feature of *antisocial personality disorder* is a persistent pattern of disregard for, and violation of, the rights of others, and failing to conform to social norms. They show a lack of remorse for their actions no matter how severe they are. Individuals with *borderline personality disorder* display a pervasive pattern of instability in interpersonal relationships, self-image, and affect and try to avoid real or imagined abandonment. Individuals with *histrionic personality disorder* are often uncomfortable in social settings unless they are the center of attention. The individual is often very lively and dramatic and uses physical gestures and mannerisms along with grandiose language. In *narcissistic personality disorder*, individuals display a pattern of grandiosity along with a lack of empathy for others. They like to be the center of attention.

7.4.4. Cluster C

Individuals with *avoidant personality disorder* display a pervasive pattern of social anxiety due to feelings of inadequacy and increased sensitivity to negative evaluations. The fear of being rejected drives their reluctance to engage in social situations and try to prevent others from evaluating them negatively. *Dependent personality disorder* is characterized by pervasive and excessive need to be taken care of by others and leads to submissive and clinging behaviors as they fear they will be abandoned or separated from their parent, spouse, or other person whom they are in a dependent relationship with. *Obsessive-Compulsive personality disorder* involves an individual's preoccupation with orderliness, perfectionism, and ability to control situations so much so that they lose flexibility, openness, and efficiency in everyday life.

Note to Student: The discussion of personality disorders was very general. For more on these disorders, and others, I encourage you to take a class on abnormal behavior. At Washington State University, this is PSYCH 333.

Module Recap

Module 7 explored personality and how it relates to motivated behavior. We discussed what personality was, traits, and then contrasted personality with temperament. Our investigation of the topic then moved to models or theories as to what personality is, how traits manifest themselves, and how personality develops over time. A brief review of the literature showed how personality affects the decisions we make as to what behaviors we make or attitudes we display, and how we react to the world around us. As with all things in life, normal functioning is not always possible and so we examined

personality disorders.

The content of this module dove into core content in a motivation class, but also explored the content of classes in personality and abnormal behavior. In our next module we will examine the topic of psychological needs and how they motivate behavior. With personality and needs covered, we will finish out Unit 3 by discussing how we are motivated to action by a higher power.

Module 8: Psychological Needs and Motivation

Module Overview

With our discussion of personality now concluded, we turn our attention to psychological needs. Though needs can also be physiological in nature, we will focus on psychological ones in this module and then cover biological needs in Modules 13 and 14. Our discussion will cover affiliation, power, cognition, achievement, autonomy, competence, closure, and meaning needs.

Module Outline

- 8.1. Frameworks for Understanding Needs
- 8.2. Need for Affiliation
- 8.3. Need for Power
- 8.4. Need for Cognition
- 8.5. Need for Achievement
- 8.6. Need for Autonomy
- 8.7. Need for Competence
- 8.8. Need for Closure
- 8.9. Need for Meaning

Module Learning Outcomes

- Contrast Maslow's hierarchy of needs with Hull's drive theory of motivated behavior.
- List, define, and evaluate research on the eight needs covered in this module.

8.1. FRAMEWORKS FOR UNDERSTANDING NEEDS

Section Learning Objectives

- Revisit Maslow's hierarchy of needs.

- Explain Hull's drive theory of needs.

8.1.1. Maslow's Hierarchy of Needs

In Section 1.2.2.1 we discussed Maslow's hierarchy of needs as one way to understand motivation and specifically the push of motivated behavior. According to Maslow, there are five types of needs arranged in a hierarchy, or more so in a pyramid formation. Lower level needs must be fulfilled before higher level ones can be. At the bottom are the *physiological needs* which are what we need to survive. They include food, water, sex, temperature, oxygen, etc. At the next level are needs centered on our *safety and security*, or living in a safe environment, being safe from Mother Nature, and having enough money to pay the bills. With this level satisfied, we can next focus on feeling socially connected to others and being in mature relationships, what he called the *love and belongingness needs*. Fourth are our *self-esteem needs* or being independent, gaining mastery, how we feel about ourselves, and being responsible. At the pinnacle of the pyramid are our *self-actualization needs* which Carl Rogers and other humanistic psychologists (see Module 7) discussed. This level focuses on realizing our full potential, feeling fulfilled and satisfied, and seeking personal growth. We also pursue interests out of intrinsic interest and not extrinsic demands.

Maslow's conceptualization of human needs is not without criticism. As I noted in Module 1, many college students have issues satisfying the lower needs, especially as the semester goes along and they run out of adaptation energy (see Module 4) but can satisfy middle tier needs such as self-esteem and maybe love and belongingness needs. Despite this, and the point of this module, Maslow showed that our needs are not just psychological in nature, but that we have physiological needs too that must be met for us to survive. Remember, evolutionary theory says we will engage in behaviors that guarantee the continuation of the species and our own survival. So it makes sense that Maslow would make physiological drives the foundation of this theory. We will discuss physiological drives in Modules 13 and 14.

8.1.2. Hull's Drive Theory of Needs

I wanted also to call attention to the fact that Clark Leonard Hull (1943) presented a theory to explain how motivated behavior arises from biological needs, or our desire to satisfy deficiencies. These deficiencies are not pleasant states and cause tension or arousal and so the person or animal will engage in whatever behavior is necessary to reduce the tension, which Hull called a *drive*. He said that there were two types of drives. *Primary drives* are associated with innate need states such as food, water, oxygen, urination, activity, etc. and are needed to survive. *Secondary drives* are learned and through their association with the reduction of primary drives become drives themselves. Basically, a secondary drive elicits a response similar to those caused by primary drives. Let's say you touched a hot

stove and were subsequently burned. Our primary drive says that the pain experienced from the burn will result in motivated behavior to relieve the pain. Our secondary drive says that in the future, simply seeing the stove may result in our avoiding the stove all together. The mere sight of the stove is the stimulus for the fear we experience, which is a learned drive (we don't normally come into the world afraid of stoves). In this case, the secondary drive became a primary drive.

Behaviors that reduce the drive will be repeated since they serve as reinforcement for the behavior. Negative reinforcement is when we take away something aversive (in this case the drive) which leads to the same behavior in the future when the aversive stimulus is present again. Hull calls this the *law of primary reinforcement* and it involves primary reinforcers or 'things' in our environment that naturally have reinforcing properties and that we do not have to learn to respond to. Food and water are examples. Hull also mentioned what he called the *law of secondary reinforcement* or when a drive is reduced due to a secondary reinforcer such as money or praise which can be used to obtain primary reinforcers. In operant conditioning, secondary reinforcers are learned and not something we automatically respond to.

Critics point out that secondary reinforcers should not be part of the theory since they cannot reduce a drive alone and that Hull's theory does not explain why we, for instance, eat when we are not hungry. Have you ever been out with friends and ate simply because your friends were eating? According to Hull, you should not have engaged in this behavior.

And finally, Hull talked about what he called *habit strength* or strengthening the connections between stimulus and responses (called S-R units) due to the number of reinforcements that have occurred. Think about when you study. If you repeat a definition over and over again your recollection of the definition when presented with the term will be better than if you just repeated it one time to yourself. In Module 13 we will call this rote rehearsal.

Note: In the remainder of this module I will introduce you to several of our psychological needs and some of the research demonstrating their effect on motivated behavior. This will not be an exhaustive discussion but will give you a starting point for your own self-reflection and exploration. Our focus will be on articles published from 2010 only.

8.2. NEED FOR AFFILIATION

Section Learning Objectives

-
- Define the need for affiliation.
 - Report what the literature says about the need for affiliation.

The **need to affiliation/belong** is our motive to establish, maintain, or restore social relationships with others, whether individually or through groups (McClelland & Koestner, 1992). It is important to point out that we *affiliate* with people who accept us though are generally indifferent while we tend to *belong* to individuals who truly care about us and for whom we have an attachment. In terms of the former, you affiliate with your classmates and people you work with while you belong to your family or a committed relationship with your significant other or best friend. The literature shows that:

- Leaders high in the need for affiliation are more concerned about the needs of their followers and engaged in more transformational leadership due to affiliation moderating the interplay of achievement and power needs (Steinmann, Otting, & Maier, 2016).
- Who wants to take online courses? Seiver and Troja (2014) found that those high in the need for affiliation were less, and that those high in the need for autonomy were more, likely to want to take another online course. Their sample included college students enrolled in classroom courses who had taken at least one online course in the past.
- Though our need for affiliation is universal, it does not occur in every situation and individual differences and characteristics of the target can factor in. One such difference is religiosity and van Cappellen et al. (2017) found that religiosity was positively related to social affiliation except when the identity of the affiliation target was manipulated to be a threatening out-group member (an atheist). In this case, religiosity did not predict affiliation behaviors.
- Risk of exclusion from a group (not being affiliated) led individuals high in a need for inclusion/affiliation to engage in pro-group, but not pro-self, unethical behaviors (Thau et al., 2015).
- When affiliation goals are of central importance to a person, they perceive the estimated interpersonal distance between them and other people as smaller compared to participants primed with control words (Stel & van Koningsbruggen, 2015).

8.3. NEED FOR POWER

Section Learning Objectives

- Define the need for power.
- Report what the literature says about the need for power.

The **need for power** is a desire to exert influence over others, to be in charge, to be noticed, and to achieve high status (Winter, 1988). But why do people desire power? Is it really to be a master over others as the need would imply, or could another motive be at work? An interesting study by Lammers et al. (2016) showed that the motive to have power stems from a desire to master of one's own domain or to control their fate, and not a desire to rule over others. The effect held across cultures/continents too (Europe, the US, and India). What else does the literature show?

- People high in a need for power have higher recognition accuracy for angry faces than for neutral faces and the need modulates anger face processing from encoding to retrieval (Wang et al., 2017).
- Research into the implicit power motive, or unconsciously deriving pleasure from having control over others, shows that the those high in the motive make decisions favoring dominant-looking persons as in-group leaders and submissive-looking individuals as out-group leaders (Study 1), and choose dominant-looking persons as the in-group leader and submissive-looking individuals as in-group members (Study 2). The authors explain that behavior is generally predicted by the perceived instrumentality for attaining influence over others (Stoeckart et al., 2018).
- Leaders who are high in the need for power are perceived as strong leaders (Winter, 2010).
- Ramsay et al. (2016) asked 149 undergraduate students to complete questionnaires measuring their intention to embark on entrepreneurial, professional, or leadership careers, and their implicit motivation. Results showed that a need for power positively predicted entrepreneurial intent while negatively predicting professional intent, and that higher need for power was positively associated with leadership and entrepreneurial career choices.
- Is it possible that some individuals high in the need for power display submissive and not dominant behavior when they are also high in the need to belong/affiliate? Rios, Fast, and Gruenfeld (2015) explored this question and found that the social distinctiveness associated with power was threatening to individuals who desired to affiliate and motivated them to engage in submissive behaviors that downplayed their power thereby reducing their distinctiveness.

8.4. NEED FOR COGNITION

Section Learning Objectives

- Define the need for cognition.
- Report what the literature says about the need for cognition.

The **need for cognition** is a desire to understand and make reasonable the world of experience (Cacioppo & Petty, 1982; Cohen et al., 1955). Those with a high need for cognition enjoy analytical thinking and are less likely to be persuaded by others. Watt and Blanchard (1994) also found that they are less susceptible to boredom. The need is assessed via the Need for Cognition Scale (Cacioppo & Petty, 1982). What does the literature show?

- How might other reader's reactions to news on internet sites affect a person's perception of public opinion, belief about the impact of media influence, and their personal opinion? Lee and Jang (2010) found that high need for cognition individuals relied more on approval ratings than individual postings to estimate the influence of the media on the general public. Other's comments had the greatest impact on the participant's personal opinion when they were low in the need for cognition.
- Leaders higher in the need for cognition were found to be less susceptible to decision bias in a study of high-level leaders given decision-making competence and personality scales (Carnevale, Inbar, & Lerner, 2011).
- Feist (2012) found that interest in science was predicted by the personality traits of openness to experience, conscientiousness, and introversion, and by a high need for cognition, though the latter explained more variance than the three personality traits combined.
- Students with a high need for cognition tended to engage in deep learning activities and used strategies such as critical processing, relating, and structuring compared to students with a low need for cognition who engaged in memorizing and rehearsing only (Cazan & Indreica, 2014).
- Students were asked to report their self-uncertainty and need for cognition before evaluating a prospective prototypical or non-prototypical student leader. Results showed that students high in the need for cognition relied less on prototypicality as a heuristic compared to their low need for cognition counterparts when uncertainty was elevated (Rast, Hogg, & Tomory, 2014).
- The need for cognition has been shown to be relatively stable across the life span and was found to be related to the personality trait of openness to experience (Soubelet & Salthouse, 2016).

8.5. NEED FOR ACHIEVEMENT

Section Learning Objectives

- Define the need for achievement.
- Report what the literature says about the need for achievement.

The **need for achievement** is defined as the desire to do things well, outperform others, and overcome obstacles (McClelland et al., 1953). It centers on our own internal standard of excellence (McClelland, 1961) and those who are high in the need wish to do well on all tasks.

Three factors affect the need for achievement. First, the motive to succeed is the extent to which you want to be successful. Success is relative though, meaning it depends on the individual. Second, the expectation of success is one's perceived likelihood of succeeding at a task. Finally, the incentive value of success indicates that an incentive stems from the importance of and the level of difficulty of the task. The interesting thing about incentive value is that it is inversely related to task difficulty. Atkinson (1957/1983) said the more difficult the task, the higher its incentive value. Consider playing a video game. When you start the game, you are prompted to choose the difficulty level. Most games allow for easy, normal, or hard. If you choose to play the game on easy, you will not feel as fulfilled and accomplished than if you played the game on normal or hard.

So what else does the literature suggest about the need for achievement?

- Undergraduate students high in the need for achievement were less likely to experience emotional exhaustion, cynicism, and reduced efficacy, all indicators of burnout, and thereby were less likely to leave their program of study (Moneta, 2011).
- Chen, Su, and Wu (2012) examined how the need for achievement and education affect risk taking. Results showed that entrepreneurs with a high Ms and who received a higher education were more willing to take risks than those with a low Maf and who had not received a higher education.
- The need for achievement has also been found to predict cortisol response when a difficult task is presented to an individual since difficulty is a cue to mastery reward (Schultheiss, Wiemers, & Wolf, 2014).

8.6. NEED FOR AUTONOMY

Section Learning Objectives

- Define the need for autonomy.
- Report what the literature says about the need for autonomy.

The **need for autonomy** is the desire to feel in control of our own actions rather than at the whim of outside forces, being independent, and self-reliant. Van Yperen, Wortler, and De Jonge (2016)

investigated the conditions under which work overload may occur to include the perceived opportunity to both work from home and in the office. Using a sample of 657 workers from a variety of industries, they found that workers high in the need for autonomy did not mind increasing job demands and maintained an intrinsic work motivation if there was a chance their employer would allow them to work from home at least part of the time. The authors propose that this is an effective coping resource, at least for those high in autonomy.

8.7. NEED FOR COMPETENCE

Section Learning Objectives

- Define the need for competence.
- Report what the literature says about the need for competence.

The **need for competence** is the desire to feel that we are able to handle tasks and when we do so, to feel satisfaction. Competence is linked to *self-efficacy* or believing that we can accomplish our goals, and *mastery* or the knowledge that we can gain the necessary skills and overcome all obstacles to achieve our goals.

One study examined the need for competence in employees and found that the more tasks went unfinished during the week, the lower level of competence need satisfaction the employees felt. As competence went down, work-related rumination during the weekend went up. The detrimental effects of the unfinished tasks on competence needs satisfaction were reduced when the employee engaged in proactive work behaviors. In other words, they engaged less in rumination (Weigelt, Syrek, Schimtt, & Urbach, 2018).

In another study, Sailer, Hense, Mayr, and Mandl (2016) found that for gamers, badges, leaderboards, and performance graphs affected competence needs satisfaction positively, while meaningful stories, having teammates, and avatars had a positive effect on individuals high in social **relatedness**, or the need to have warm relations with other people. The authors suggest that specific game design elements have specific psychological elements worth researching. If you wish to know, as a gamer myself, I find this study particularly interesting and true. I have a high need for competence which motivates my behavior in games and I love, for instance, seeing the percent of trophies completed as I play the game. What about you?

8.8. NEED FOR COGNITIVE CLOSURE

Section Learning Objectives

- Define the need for cognitive closure.
- Report what the literature says about the need for cognitive closure.

The **need for cognitive closure** reflects our desire to have answers, predictability, order and structure, be decisive, and avoid uncertainty, and is measured by the Need for Closure Scale (Webster & Kruglanski, 1994). How might an employee's need for cognitive closure interact with a supervisor's power need? Belanger et al. (2015) investigated this using a sample of 290 employees from six different Italian organizations. Results showed that employees high in the need used more solution-oriented conflict management strategies to deal with supervisors utilizing harsh power tactics while those low in the need for closure used the same strategies but when the manager relied on soft power tactics. The results also showed that when the supervisor used harsh power tactics, their employees relied on control-oriented conflict management strategies, especially if they were low in the need for closure.

In another study, researchers found that when uncertainty was made salient, discrimination against outgroup members increased among individuals low in the need but not among those high in cognitive closure. High cognitive closure individuals were already more discriminatory regardless of uncertainty. The authors conclude that uncertainty salience causes those low in cognitive closure to act more like those high in the need (Brizi, Mannetti, & Kruglanski, 2015).

8.9. NEED FOR MEANING

Section Learning Objectives

- Define the need for meaning.
- Report what the literature says about the need for meaning.

And finally, the **need for meaning** is our desire to make sense of our life and can be made salient by personal tragedies. As you might expect, religiosity (the topic of Module 9) is positively associated with meaning. When our meaning is threatened, religiosity increases (Abeyta & Routledge, 2018), but we also have a greater tendency to make magical evil attributions with higher levels of religiosity (likewise when our level of perceived meaning is low; Routledge, Abeyta, & Roylance, 2016).

Module Recap

Like biological needs, psychological needs can be deficient, and a drive created to restore the balance. We discussed several psychological needs and ways behavior is motivated by them. These included affiliation, power, cognitive, achievement, autonomy, competence, closure, and meaning needs. You will see many of them discussed again and hence why I provided an overview with some research on the needs. I encourage you to further explore any or all of them now if you cannot wait to read about them again.

With this module now complete, we will move to an application of needs - the psychology of religion and man's quest for meaning. We will see how religion motivates behavior and this will conclude Part III of this book.

Please let your instructor know if you have any questions.

Module 9: Moved to Action by a Higher Power: The Psychology of Religion and Motivated Behavior

Module Overview

In Module 9 we will discuss motivated behavior related to religiosity. Our discussion will tackle why people subscribe to religious belief, when and why conversion and deconversion occur, religiously motivated moral behavior, coping with life's demands through religion, attachment to God, and finally religion and death. Our focus will be on what the literature reveals to us thanks to the use of the scientific method and we will link to content already covered and hint at topics to be discussed in Modules 10-15. Enjoy.

Module Outline

- 9.1. What is Religion and to What Extent Are People Motivated by or Toward It?
- 9.2. Why Are People Motivated to Religious Ends?
- 9.3. What Is Religious Conversion and Deconversion?
- 9.4. Does Religion Motivate Moral Behavior?
- 9.5. How Does Religion Aid with Coping and Adjustment?
- 9.6. Is There a Link Between Religion and Attachment?
- 9.7. Religion and Death

Module Learning Outcomes

- Define religion and describe the dimensions of religious belief.
- State possible reasons why someone may become religious.
- State reasons why someone may convert to a different religion or deconvert from religion.
- Clarify how religion motivates moral behavior.
- Demonstrate how religion helps with coping and adjustment.
- Clarify whether religion affects attachment.
- Elaborate on religion's role in death and mortality salience focusing on TMT and NDEs.

9.1. WHAT IS RELIGION AND TO WHAT EXTENT ARE PEOPLE MOTIVATED BY OR TOWARD IT?

Section Learning Objectives

- Estimate how pervasive religion is in the world.
- Define spirituality.
- Define religion.
- List and describe dimensional approaches to religious belief.
- Describe the three orientations related to religious belief.

9.1.1. The Universality of Religious Belief?

Religious belief is one of the most important and personal belief systems a person may be motivated to adopt and maintain. It should be of no surprise that it is one of, if not the most important, social institution across societies, whether the person lives in a western nation like the United States, Asia, or an African tribe. According to estimates from 2010 and published in The World Factbook by the Central Intelligence Agency, 83.6% of the world's population maintains some religious belief. Of this group of faithful, 31.4% are Christian, 23.2% are Muslim, 15% are Hindu, 7.1% are Buddhist, 5.9% subscribe to folk religions, 0.8% are listed as other, and 0.2% are Jewish. Another 16.4% are listed as unaffiliated. (Note: For a more specific country-by-country breakdown, please see the World Factbook report - web address below.) In the United States, estimates in this report from 2014 show the following pattern: 46.5% are Protestant, 20.8% are Roman Catholic, 1.9% are Jewish, 1.6% are Mormon, 0.9% are considered other Christian, 0.9% are Muslim, 0.8% are Jehovah's Witness, 0.7% are Buddhist, 0.7% are Hindu, 1.8% listed as other, and finally 22.8% who are unaffiliated. The Pew Research Center breaks down the number of unaffiliated further as such: 3.1% atheist, 4.0% agnostic, and 15.8% subscribing to no particular belief (<http://www.pewforum.org/religious-landscape-study/>). These numbers clearly illustrate the global presence of religion.

For more information on religious statistics worldwide, see The World Factbook:

<https://www.cia.gov/library/publications/the-world-factbook/fields/2122.html>

9.1.2. Defining Religion

This leads to the question of what is religion. If we consider the sheer number of ways religion can be expressed one quickly realizes there is not a blanket definition to fit all forms it can take. Religion is quite complex, composed of many parts that help to make it what it is. This includes rituals, holy books, emotions, holidays, and doctrine to name a few. The many combinations of these elements make it impossible to put one's finger on a concrete form of religion. One thing that is certain about religion is that it is not reserved for the 'civilized' world, but can be found in various forms everywhere on our planet. In that respect it is a universal element of all human experience. Further, it must be distinguished from spirituality, in that religion has spirituality as its base. **Spirituality** may be considered a belief in supernatural forces used to answer questions of how the universe works, man's place and purpose, the existence of a higher power and a soul, and the origin of evil and suffering.

Although it is difficult to pinpoint an exact definition of religion, a very broad one may be sufficient. **Religion** can be considered a universal attempt by philosophically or spiritually like-minded people to set out to explain the cosmology of the universe and their concept of a divine power through common conceptions and beliefs. This highlights the social and universal aspects of religion. It is social, in that, other people are part of the search to understand a higher power, and universal implying that virtually all humans endeavor to find this creator being or force.

Having a religion necessitates someone be religious. Being religious implies that a person has found common ground with others on what the deity is, what the purpose of life is, and how we should live our lives. It also implies that all doubts have been cancelled, either because the person sees the religion as proof that there is a deity or holy books validate their beliefs.

9.1.3. Dimensional Approaches to Religious Belief

Religion can be seen to include different dimensions. According to Verbit (1970) six components make up religion to include *community* or being involved with others who share the same beliefs, *knowledge* or being familiar on an intellectual level with the tenets of one's faith, *ritual* or ceremonial behavior that is undertaken either publically or privately, *emotion* or feeling love or fear, *doctrine* or statements about one's relationship with the higher power, and *ethics* or a set of rules which govern our behavior on a daily basis and help us to identify right from wrong. Verbit also notes that these components vary along four dimensions to include *intensity* or how deeply committed one is, *frequency* or how often the components are engaged in, *content* or the component's essential nature such as specific rituals or knowledge, and *centrality* or the salience of the component.

Glock (1962) produced a list of five dimensions of religiousness to include beliefs, feelings, practices, knowledge, and effects. *Beliefs* include the actual ideology the person subscribes to, its tenets, the degree to which the person holds this attitude, and the salience of the belief. *Feelings* refer to the inner emotional world of the individual and includes one's fear about not being religious or committing immoral acts that could lead to an afterlife in Hell or the joy that one develops in his/her well-being for being believing and being a devoted follower. Feelings reflect an experiential dimension. *Practices* include any ritualistic behavior the person engages in due to the religion itself and may include praying, attending church service on Sunday, fasting, engaging in communion, or other practices unique to a specific faith. *Knowledge* includes what information the person has concerning their faith such as the history of their religion. This dimension is not required to be committed to the faith and many adherents subscribe to the tenets of the religion without knowing where they came from. Finally, *effects* refer to the consequences of one's steadfast belief in the tenets of his/her faith in other life domains. For instance, an individual may choose not to lie or take advantage of others due to his/her religion. You could say that expressions such as 'What would Jesus do' demonstrate this. Jesus's actions in a given situation are not actually part of the religious practice of Christianity but we can use this as a guide to figure out how to live our life in a manner consistent with our faith.

Hunt (1972) indicated that religion can take three forms. *Literal religion* occurs when the individual takes a religious statement at face value and does not question it. *Antiliteral religion* reflects a rejection of the statements made by literalists. Finally, *mythological religion* is when we reinterpret religious statements in an effort to discover their deeper symbolic meaning(s). Finally, Fromm (1950) described *humanistic religion* as involving man and his strength, virtue as self-realization, and a rejection of obedience which contrasts with *authoritarian religion* and its emphasis on obedience.

These are just a few examples of ways to describe or classify what it means to be part of a religion or to be religious.

9.1.4. Religious Orientation

A person can express one of three different religious orientations: intrinsic, extrinsic, or quest. First, **intrinsic religiosity** (Allport, 1959) is a deep, personal religious belief and the individual can best be described as unselfish, altruistic, centered on faith, believing in a loving and forgiving God, anti-prejudicial, seeing people as individuals, and accepting without any reservations. Second, **extrinsic religiosity** (Allport, 1959) is called upon when needed as in times of crisis, is not part of the person's daily life, the individual sees faith and belief as superficial, religion is viewed as a means to an end, God is seen as punitive and stern, and the person believes they are under external control. The focus of the extrinsically religious might be on such things as going to lunch after church, being with other people, and participating in church activities. Finally, the **quest orientation**, originated by Daniel C. Batson at the University of Kansas (1993), describes a person who is ready to face existential questions and looks for 'truth,' views religious doubt as positive, is open to change, and is humanitarian. Although these

questions are faced, no reduction in the complexity of life is arrived at.

So how might these religious orientations relate to personality traits as defined by the five-factor model as discussed in Module 7? Cook, McDaniel, & Doyle-Portillo (2018) found that individuals high in intrinsic religiosity were generally more agreeable and conscientious and less neurotic. Those high in quest orientation were less agreeable and conscientious and more neurotic. Other research shows that intrinsic religiosity is associated with lower levels of body dissatisfaction and eating disorders compared to extrinsic religiosity (Weinberger-Litman, 2016) as well as better mental health (Mahmoodabad et al., 2016), quest orientation is linked to mystical orientation (Francis, Village, & Powell, 2017), extrinsic religiosity can protect against the effects of depressive symptoms and individuals are therefore less likely to use tobacco when depressed (Parenteau, 2018), quality of life of male addicts can be improved by strengthening the extrinsic motivation for religion (Nafiseh et al., 2016), and finally sleep quality is better in college students who express intrinsic religiosity (Hasan et al., 2017).

9.2. WHY ARE PEOPLE MOTIVATED TO RELIGIOUS ENDS?

Section Learning Objectives

- Define faith and describe its salience in light of the question of why people are religious.
- Differentiate the function of the personal and collective unconscious and the effect on religious belief.
- Describe specific archetypes.
- Describe how religion could be viewed as deprivation by examining psychoanalysts.
- Clarify how religious belief may be motivated by fear.
- Clarify how religious belief may be motivated by a desire to be more.
- Clarify how religious belief may be motivated by survival.
- Contrast research on religion as nature and religion as nurture.

Probably the most fundamental question we can ask about religion is why people are religious in the first place. Consider that religious belief hinges on **faith**, which can be defined as belief in the absence of proof. If mankind is a rational being, then belief when no proof exists (at least at the time) is illogical and contradictory to our nature. Still, humans believe in that which they cannot see. This begs the question of *why* and a few possible answers are proposed.

9.2.1. The Collective Unconscious and Archetypes

It might be that human beings express religiosity to better understand the universe they live in. Carl Jung divided the psyche into three distinct parts. The first is the **ego** which he says is the conscious mind and chooses which thoughts, feelings, or memories can enter consciousness. The second part is the **personal unconscious** which includes anything which is unconscious, but can be brought into consciousness. It includes memories which can be easily remembered and those that have been repressed. Jung talks about complexes which are groups of experiences in the personal unconscious. The complex can include thoughts, feelings, and memories concerning a particular concept such as the mother (Jung, 1934). The final, and maybe the most important part, is the **collective unconscious** (Jung, 1936). It is the innate knowledge that we come into this world with. It might be called our psychic inheritance. We are never aware of it despite it influencing all our experiences and behaviors. It is shared by all members of a culture or universally by all human. The collective unconscious is not a personal acquisition and cannot be regarded as such.

The collective unconscious consists of **archetypes** (Jung, 1936) which are unlearned tendencies that allow us to experience life in a specific way. They act as organizing principles despite not having a form of their own. Archetypes can best be understood as images, patterns, and symbols that can be found in dreams, religion, ritual, art, literature, mythology, and fairy tales. The way in which archetypes are sensed is unique to the person and draws off their total experience, despite the archetype being universal. Some archetypes are:

- *Mother Archetype* - All of us born into this world came in looking for a nurturing figure to guide us through the early years of our life. This is true of present day man, all the way back to the first baby that was born. Of course, this figure is our mother. In mythology, it is symbolized by the “earth mother” or my Eve in western religion. Also, less personal examples as the church, a nation, forest, or the ocean can be included. Jung suggested that the person who did not have the support of their mother as they grew up may seek comfort in the church, in a life at sea, or identifying with the “motherland.”
- *Shadow Archetype* - The shadow comes from our pre-human, animal past, when our only goal was survival and reproduction. As well, during this time we possessed no self-conscious emotions. It is neither good or bad and is symbolized as a snake, dragon, demon, or a monster.
- *Anima/Animus Archetypes* - The anima is the female aspect of males and the animus is the male aspect of women. Greek myth has suggested that we spend our lives looking for our other half. When we experience love at first sight it is because we have found the person who fills the missing half.
- *Child Archetype* - The child archetype is represented in mythology mostly by infants, but also by small creatures. The Christ child is a manifestation of the child archetype.
- *Animal Archetype* - The animal archetype represents the bond humanity shares with the animal kingdom. Snakes, often thought to be particularly wise, are an example of this archetype.
- *God Archetype* - Man’s need to comprehend the universe and to assign a meaning to all that

happens is said to be a byproduct of the God archetype. In doing so, we seek to know the purpose and direction behind all actions

The God archetype is of particular interest. Religion helps elucidate some of the more nebulous questions about life (i.e. what is the nature of the universe, is there really a God, do we have a soul that lives on, and what is the source of evil and suffering?). By making the unclear clear, religion gives people a sense of meaning and purpose, and the universality of religion as shown at the beginning of this module makes sense in light of the collective unconscious and archetypes. But this is just one explanation.

9.2.2. Religious Belief, Motivated by Deprivation?

Sigmund Freud, father of psychoanalysis, viewed religion as an illusion and an attempt at wish fulfillment. He thought that the adoption of religion was a reversion to childish patterns of thought due to feeling helpless and guilty. Human beings strive to feel secure and to forgive and acquire both by inventing the idea of God. He examined religion at the cultural level and said it attempts to subdue our antisocial tendencies and control our selfish and aggressive impulses. A personal level was also important to Freud and through it, we can control our inappropriate social behaviors, but this control creates neurosis since these behaviors are natural tendencies we are limiting the expression of.

Alfred Adler (1927; 1954) discussed what he called *inferiority feelings* and said they serve as a motivating force in behavior. Originating in infancy, a child depends on caregivers for everything which leads to a state of helplessness and dependency on others. This awakens a sense of inferiority and the child is aware of the need to overcome it but at the same time is driven to the betterment of the self. Inferiority feelings operate to the advantage of the individual and society as they lead to continuous improvement. So, we are motivated by a goal for superiority, or to be competent in all that we do. Failure to compensate for inferiority feelings can lead to the development of an *inferiority complex* which renders the person incapable of coping with life's problems. We could develop a *superiority complex* in which we exaggerate our own importance. Both complexes involve overcompensation in which the person denies the real-life situation rather than accept it. The person may also develop a belief in an omnipotent god to relieve some of this inferiority and to serve as a source of great power.

Finally, Karen Horney (1945) saw the challenge of life to be relating effectively to others. *Basic anxiety* is a feeling of pervasive loneliness and helplessness which is the foundation of neuroses and she said that all the negative factors in a child's environment that can cause such insecurity are **basic evils**. These conditions include dominance, lack of protection and love, erratic behavior, parental discord, and hostility and they undermine the child's security and lead to *basic hostility*. Children are driven to seek security, safety, and freedom from fear in a threatening world, and one potential source of this security

could be a higher power.

9.2.3. Religious Belief, Motivated by Fear?

Uncertainty about the world has been shown to lead to worrying (Dugas, Gosselin, & Ladouceur, 2001). It is fair to say that the thought of our death and whether an afterlife exists, can lead to fear of the unknown or worry. This fear creates an uncomfortable feeling which we are motivated to get rid of. If thought of God and Heaven occur and this fear subsides, then according to operant conditioning theory, we will bring these concepts to mind the next time such fear arises. Simply, this is the essence of *negative reinforcement*, or if an action (i.e. thinking about God and Heaven) takes away something aversive (i.e. fear/worry about death and the afterlife) we will be more likely to engage in that behavior in the future if the aversive stimulus presents itself. In negative reinforcement, we can *escape* this aversive stimulus or think about God when worrying about dying or we can *avoid* the fear/worry by just thinking about God and Heaven.

So is there truth to this? Flannelly (2017) reports that Americans who display an internal religious motivation, or see religion as an end in itself, have lower death anxiety than those who adopt an external religious motivation and see religion as a way to achieve social goals. Furthermore, belief in an afterlife is negatively associated with fear of death. Krause (2015) found that people who go to church receive more support from fellow churchgoers and as a result are more likely to trust God and feel forgiven by him. This leads to the individual experiencing less death anxiety. Finally, age is a critical factor and death anxiety has been shown to be greater among younger and middle age adults, but a religious sense of hope reduces this anxiety as people get older (Krause, Pargament, & Ironson, 2017).

9.2.4. Religious Belief, Motivated to Be More?

In Module 8, we discussed Abraham Maslow's concept of the hierarchy of needs and how at the top of the pyramid were self-actualization needs which recall are B-needs or being needs. According to Maslow (1970), self-actualization was expressed during moments of intellectual and emotional enlightenment, called *peak experiences*. It is from these experiences that religions can be built and so his position is one of growth, opposite of Freud's view of religion as arising out of deprivation.

We might even say that where religion is concerned, we are motivated to know more. How so? Maslow (1970) suggested the existence of the needs to *know* and *understand* in which the former is more potent than the latter and occurs prior to it. Recall the discussion of uncertainty about the unknown in Section 9.2.3. and how it can lead to fear which we are motivated to reduce or avoid. You might say belief in God and the afterlife avoids this uncertainty (and subsequent fear) because it creates knowledge. If we are knowledgeable than we cannot be uncertain, resolving this problem.

9.2.5. Religious Belief, Motivated by Survival?

Edward O. Wilson proposed the concept of sociobiology, defined as “the systematic study of the biological basis of all forms of social behavior, in all kinds of organisms, including man” (Wilson, 1978). He believed that religion was an “enabling mechanism for survival” and any practices that make the survival of the species more likely will lead to physiological controls that favor the acquisition of those practices. Prosocial behavior is an example of a practice that leads to the survival of the group and has been linked to psychological flourishing (Nelson et al., 2016), improved physical health (Brown & Brown, 2015), fewer problem behaviors in teens (Padilla-Walker, Carlo, & Bielson, 2015), reduced stress levels (Raposa, Laws, & Ansell, 2015), and increased longevity (Hilbrand et al., 2017).

9.2.6. Religion as Nature

Is it possible that people are predisposed to religious belief due to actions of genes, reflecting the role of nature? Bouchard et al. (1990) investigated this issue by following more than 100 sets of twins reared apart and a larger sample of twins raised together. Results showed a strong heritable component to religiosity and that family environments (nurture) tended not to be very influential on this belief. Koenig and Bouchard (2006) found that 40 to 60% of the observed variation in the personality traits of religiousness, authoritarianism, and conservatism came from genotypic variation. But these findings are controversial at best, and in fact, most research points to the fact that our experiences shape who we are as we grow up.

9.2.7. Religion as Nurture

Zhang (2003) used a study of 232 senior high school students and their parents from Mainland China to explore the question of whether parent’s and children’s thinking styles are related. The results of the study showed that children’s scores on thinking styles were significantly correlated with both socialization factors reported by the children and the thinking styles of their parents. This was the case on six of eleven thinking styles. Zhang notes that, “Parents could pay more attention to how they deal with the various issues and tasks in daily life, as their close relationship influences how their children deal with the outside world” (Zhang, 2003, pp. 627-628). This study shows that a definite socialization process is ongoing between parents and their children. Just as thinking styles can be socialized, so too can religious beliefs.

Grusec and Goodnow (1994) present a model of how the socialization process may work. First, children must perceive parent’s values either accurately or inaccurately. Second, children either reject or accept these values. Not only do religious beliefs need to be transmitted to the child, but also the child needs

to acquire an accurate perception of these beliefs. If they are inaccurately taken in, internalization may be more difficult. Knafo and Schwartz (2003) propose three processes that may affect accuracy including: (1) availability of parental messages, (2) the understandability of these messages, and (3) the adolescent's motivation to attend to them.

Availability implies that parents make messages available to their children by capturing their attention and by communicating the importance of a disciplinary message to them. This may be assessed by frequency of value discussion. The more frequently parents impart their values on their children, the greater the chance that this message will be accurately taken in.

Understandability is possible if the message is clear, concise, redundant, and consistent. Most importantly, it must match the child's current cognitive level. This means that parents may communicate more concrete aspects of religious beliefs to their children and save more abstract ones for a time when the child is able to process it. Another strategy for dealing with abstract concepts is to place them in a world of fantasy where reason is not needed. The child will at least have knowledge of the concepts without having to find cognitive explanations for them. Understandability is affected by conflict and perception of parental agreement, both of which can impede the ability of the child to accurately perceive the message.

Finally, motivation to attend to the message is enhanced by parental consistency, the lack of an overt value conflict between parents, and perceived parental agreement. If parents are consistent, the child will be more likely to listen to the message. Also, conflict is likely to reduce the accuracy of the perception and since it elicits negative emotional reactions, it may reduce the adolescent's motivation to listen. Finally, children who perceive their parents to be in agreement are more likely to identify with the parents. Perceived parental disagreement may cause confusion and upset the child, thereby interfering with both motivation and understanding (Knafo & Schwartz, 2003).

Hunsberger and Brown (1984) demonstrated the power of parental influence by looking at surveys from 878 Introduction to Psychology students. Differences among students from different religious traditions revealed that higher percentages of Greek or Russian Orthodox and Jewish students saw "Home" as the strongest influence on them while Roman Catholics and Anglicans chose "School." Other Protestants and Personal Religion groups chose "Other" as having the greatest influence. Finally, agnostics put "School" first and "Home" at a very close second while atheists tied between "Home" and "School" as having the greatest influence. Although there were denominational differences, "Home," represented by parents, was reported to exert the greatest influence by 44% of all respondents. The next closest group was friends at 15%. A similar finding was reported by Hunsberger (1983) who learned that the top three who had the most influence on a person's religious beliefs were mother first, church second, and father third. Francis and Gibson (1993) learned that mothers had more influence on their children's religious beliefs than fathers, though there was some inclination toward stronger same-sex influence for both parents.

The study by Francis and Gibson (1993) brought up an interesting twist on the parental influence

quandary: Does the father have more influence on the child than the mother? Dudley and Dudley (1986) found that the values of mothers are the best predictors of the values of their children. However, when there is disagreement between parents on religious values, children are more likely to agree with the father than the mother. Clark, Worthington, and Danser (1988) found that a father's religious beliefs and practices, and his parenting styles were associated with father-son similarities in beliefs. If fathers attend church, discuss religion at home, and are committed to their religion, their sons will attend church with similar frequency to the fathers. This was also replicated in a study by Kieren and Munro (1987) who showed fathers to have more of an impact.

Hayes and Pittlekow (1993) showed that the effect of the mother and the father varies. For both sons and daughters, the mother who is religiously devout tends to produce children who are equally devout. Mothers also influence their sons through disciplinary supervision. Hence, sons of strict mothers tend to be more religious later in life. For sons, fathers influence their religious beliefs through his own religious belief (similar to Clark, Worthington, & Danser, 1988). For females, the moral supervision of the father and the influence of traditional family networks and the community are important.

Upon surveying Catholic high school seniors, Benson et al. (1986) discovered that the importance of religion for parents, home religious activity, and positive family environment were the three main factors that predicted adolescent religiousness. Friedman (1985) and Slaughter-Defoe (1995) note that one's family of origin and extended family can be very critical in affecting socialization and functioning in many different systems like religion. Furthermore, studies by Kluegel (1980), Hadaway (1980), and others have elucidated the fact that children raised within a specific familial religious denomination tend to continue identifying with this group throughout adolescence and young adulthood. Flor and Knapp (2001) reported that as parental modeling of religious behavior, parent desire for the child to be religious, and discussions of issues of faith increase, so does child religious behavior.

Okagaki and Bevis (1999) drew five main conclusions from a study they conducted. First, daughters have more accurate perceptions if their parents discuss their beliefs often and if the parents agree. Second, daughter's perceptions of the warmth of the parent-child relationship was related to the agreement between daughter's beliefs and their perceptions of the parent's beliefs. Third, a daughter will more likely adopt her father's beliefs if she believes they are important to him. Fourth, parent's beliefs and daughter's beliefs are mediated by daughter's perceptions of parental beliefs. Fifth, perceived agreement between parent and daughter is generally not related to the differences between daughter's beliefs and parental beliefs.

Hoge, Petrillo, and Smith (1982) learned that creedal assent, the agreement between parents and child on religious beliefs, is greater when there are fewer parent-child disagreements in the house, the parents are younger, the parents agree on their beliefs and have definite beliefs, and carry out conscious religious socialization in the home. This relationship may not be as simple as Hoge and colleagues have shown though. Dudley and Dudley (1986) concluded in a study they conducted that a generation gap exists between youth and parents. Adolescents as a group are likely to assert their independence from their parents and become less traditional in the religious values they hold than what

their parents are, but youths do still resemble their parents in religious values held.

We will discuss other aspects of socialization in this module and throughout this book. At this point, I wanted to present a historical overview of what we know to show that though nature may have a role, nurture has a much greater one.

What Do You Think?

David Elkind (1978) discovered that most children before the age of 11 to 12 are unable to understand religious concepts as adults understand them. For instance, a little girl from Connecticut read the Lord's Prayer as such, "Our Father who art in New Haven, Harold be thy name" (pp. 26-27). Prior to adolescence, these terms are understood in relation to the child's own level of comprehension.

Luella Cole and Irma Hall (1970) observed that small children often show a free, unconventional imagination in their thinking about religion. Children tend to accept religious concepts told to them by their elders without any doubt about their correctness. Also, they do not question their nature. Once older, many adolescents investigate religion again as a possible source of intellectual and emotional stimulation and satisfaction. Beyond the age of 15, children become critical of their earlier beliefs but in the end, they settle down to a rather indifferent and tolerant attitude. Children, Cole and Hall say, do not use religion as adults do. For instance, religion is not used for adult values since they cannot understand them but may be used for a sense of security and relief from feelings of guilt. Adolescents do attempt to find something in religion but usually do not.

9.3. What Is Religious Conversion and Deconversion?

Section Learning Objectives

- Define religious conversion and proselyte.
- Contrast sudden and gradual conversion.
- Define deconversion and contrast it with apostasy.
- Report statistics for the extent to which people convert and deconvert.
- State reasons why people convert and deconvert.

9.3.1. Defining Terms

Religious conversion is the process of changing one's religious beliefs. What you might have

subscribed to in childhood now changes to another set of beliefs, or you could have gone from not being religious to being religious. The person who undergoes conversion is said to be a convert or **proselyte**. This change occurs either suddenly or gradually (Richardson, 1985).

As you would expect, in **sudden conversion** the change comes quickly and the person either adopts a faith they have not previously subscribed to or make of central importance their current faith that was not important previously. Sudden conversion tends to be more emotional than rational, is permanent when it occurs, and external forces may play a key role (the effect of external motivation).

In contrast, **gradual conversion** takes time, as little as a few days up to several years, and may not even be noticed. Despite this, it results in the same transformation of self as the sudden conversion. It tends to be rationally driven and linked to a search for meaning and purpose in life. The person may ponder basic life questions and the answers provided by religion for them. This could be driven by a need for cognition (see Module 8). Also, internal forces are at work such that the convert is actively seeking. The conversion may not be permanent and could occur several times (Richardson, 1985).

Finally, what is deconversion? **Deconversion** is the process of leaving one's faith. It should be distinguished from **apostasy** which is when a person completely abandons their faith and becomes nonreligious. A person who undergoes deconversion may not necessarily abandon their beliefs.

9.3.2. How Prevalent is Conversion and Deconversion?

The Pew Research Center's Forum on Religion & Public Life conducted the 2007 Landscape Survey and did a follow up in 2011 and found that 44% of their sample of 2,867 respondents did not currently belong to their childhood faith. Of that 44%, 4% raised Catholic and 7% raised Protestant were now unaffiliated. Five percent of Catholics converted to Protestantism while 15% of Protestants changed to another denomination of Protestantism. Four percent that were not raised in any faith were now affiliated. In terms of being in the same faith as childhood, 56% fell into this category but 9% reported that they did change their faith at some point but returned to their childhood one. Remarkably, 47% made no such change and remained true to the childhood religious beliefs.

The Pew Research Center points out that most people who convert do so before age 24 and many change their religion more than once. In terms of when Catholics leave their childhood faith, 79% of respondents became unaffiliated by age 24 with another 18% of 24-35-year olds making the change. In terms of being raised Catholic but changing to Protestantism, 66% were under 24 and 26% were between 24-35 when this occurred. For Protestants who became unaffiliated, 85% were under 24 and 11% were 24-35, while for those who switched to another Protestant denomination 56% were under 24, 29% were aged 24-35, and 12% were 36-50. Finally, for those raised unaffiliated and became affiliated, 72% did this by age 24 with 19% making the change from 24-35, and 7% between age 36-50. As you can see, religious change is not very common after age 50.

9.3.3. The Motivation for Changing One's Religion

So why do people change their religious beliefs? The 2011 survey included items to probe this question. These items consisted of closed-ended (yes-no) questions asking whether or not certain reasons were important to them but also open-ended questions where the respondent could share reasons not on the list. What were the highly endorsed common reasons?

- Catholics who are now unaffiliated - Gradually drifted away from the religion
- Catholics who became Protestants - Their spiritual need was not being met
- Protestants who are now unaffiliated - Gradually drifted away from the religion
- Protestants who switched denominations - Found a religion they liked more (58%) but note that 51% said their spiritual needs were not being met
- Unaffiliated in childhood who are now affiliated - Only two answers were selected - 51% said their spiritual needs were not being met while 46% said they found a religion they liked more

As for the open-ended questions, reasons that were given for switching religions included not believing in their former religion or any religion, scandal within their faith such as the molestation of children, looking for something deeper, and life cycle changes such as family or marriage.

Many who deconverted said they did so because they thought religious people were hypocritical and insincere and that religious organization place too much emphasis on rules and not spirituality. Despite this, about four in ten state that religion is somewhat important in their life and leave open the possibility of joining a religion at a later time.

For more on this report, please visit the Pew Research Center's website at: <http://www.pewforum.org/2009/04/27/faith-in-flux/>

9.4. DOES RELIGION MOTIVATE MORAL BEHAVIOR?

Section Learning Objectives

- Describe the effect of religiosity on various moral attitudes.

- Describe how moral development proceeds according to Kohlberg.
- Establish whether there is a link between moral behavior and religiosity in relation to cheating/dishonesty.

9.4.1. Moral Attitudes

A link between religion and moral attitudes should not really be surprising. One study examined individual religiosity and found that it was positively related to moral attitudes but that the effect was stronger in more religious countries than secular ones (Scheepers, Te Grotenhusi, & Van Der Slik, 2002). Religion has specifically been linked to support for environmental spending (Greeley, 1993), opposition to homosexuality (Deak & Saroglou, 2015; Adamczyk & Pitt, 2009), negative attitudes toward euthanasia (Bulmer, Bohnke, & Lewis, 2017; Danyliv & O'Neill, 2015), seeing suicide as unacceptable (Osafo et al., 2013; Knizek et al., 2011; Domino & Miller, 1992), moral disapproval for pornography use (Baltazar et al., 2018; Grubbs et al., 2014), disagreement over employer coverage of contraception (Patton, Hall, & Dalton, 2015), more negative attitudes toward individuals not in their faith (in this case, non-Christian groups; LaBouff et al., 2012), the use of corporal punishment by parents with their kids (Taylor et al., 2013), and showing favorable attitudes toward capital punishment (i.e. the death penalty) but only when angry and judgmental images of God are used and not when loving and engaged in the world images are presented (Bader et al., 2010).

Interestingly, Cobb-Leonard & Scott-Jones (2010) found that among a sample of high school students, the majority who reported that religion was important to them, most engaged in sexual behavior despite being aware of religious proscriptions against premarital sex, and cited relationships and physical health as the basis of their standards for being sexually active. The authors suggest that adolescents may be accepting of premarital sex if there is a committed romantic relationship. In another study sampling only female adolescents aged 13 to 21, religiosity was a protective factor in relation to sexual behavior with those reporting being sexually active were less likely to have been pregnant, have an STD, or have multiple sexual partners (Gold et al., 2010).

9.4.2. Moral Development

Most of what we know about moral development in children comes from the pioneering work of Lawrence Kohlberg. Kohlberg (1964) said that a person's moral stage is determined by the answers they give to hypothetical dilemmas. But for him, the reasoning behind the answers was more important than the answers themselves. He said moral development proceeded through three levels, each with two substages. How so?

- Preconventional Morality

- Infants up to age 10
 - Stage 1: Children obey rules because they fear being punished if they disobey
 - Stage 2: Obey because they think it is in their best interest to obey – they will receive some reward
- Conventional Morality
 - Begins around age 10
 - Stage 3: Obey rules, first based on conformity and loyalty to others
 - Stage 4: Eventually their reasoning shifts to a “law-and-order” orientation based on an understanding of law and justice; it is what society expects
 - Most people remain here
- Postconventional Morality
 - Most people never reach this level.
 - Stage 5: Some adults realize that certain laws are themselves immoral and must be changed.
 - Stage 6: Follows laws because they are based on universal ethical principles; any that violate these are disobeyed.

Before we move on, it should be pointed out that research shows that the sequence Kohlberg suggested occurs as he hypothesized, and that people do not skip stages (Walker, 1989).

9.4.3. Moral Behavior

Now that we know what form moral attitudes take and how moral development proceeds, let's discuss moral behavior and related to honesty and cheating. Before we get to religion and its link to moral behavior, we need to address whether moral identity predicts moral behavior. The results of a meta-analysis of 111 studies from fields such as business, psychology, marketing, and sociology suggest that it does. The study showed that moral identity predicted engaging in prosocial and ethical behavior and abstaining from antisocial behavior (Hertz & Krettenauer, 2016).

You would then expect that being religious will lead to moral behavior and specifically, acting honestly (or not cheating). Shariff (2015) asked the simple question of whether religion increases moral behavior and his results produced an answer in the affirmative and showed that the religious see morality as a set of objective truths. Arbel et al. (2014) found that honesty was highest among young religious females and lowest in secular females. Another study showed the general trend also but only when the

participant viewed God as punishing and not loving (Shariff & Norenzayan, 2011). Stavrova and Siegers (2014) found that those professing to be religious disapproved of lying in their own interests and were less likely to engage in fraudulent behaviors, all while being more likely to engage in charity work. These findings related to countries in which there is no social pressure to follow a specific faith but weaken and eventually disappear as the national level of the social enforcement of religiosity increased.

Is the relationship really this simple? Aydemir and Egilmez (2010) found that ethical behavior and honesty are positively associated with being intrinsically religiously motivated but for those who demonstrate extrinsic religiosity, the associate was negatively related.

How do we learn what moral behaviors are appropriate? As children, we were often read moral stories such as Pinocchio and The Boy Who Cried Wolf with the expectation being that they would lead to honest behavior. But is that truly the case? Lee et al. (2014) found that these stories did not reduce lying in a group of 3 to 7-year olds but the story, *George Washington and the Cherry Tree*, did. Why was that? Simply, the former stories focused on the negative consequences of dishonesty while the latter story focused on the positive consequences. When the cherry tree story was changed to focus on negative consequences, it failed to promote honesty.

9.5. How Does Religion Aid with Coping and Adjustment?

Section Learning Objectives

- Revisit the stress and coping model and indicate how it relates to the discussion of religion.
- Identify the two forms religious coping takes.
- Clarify how much religious coping is too much.
- Justify the utility of religious coping.
- Describe the development of prayer.

9.5.1. A Return to Our Stress and Coping Model from Module 4

In Module 4, and then expanded in Module 5, I presented a model for stress and coping which showed us moving from a demand to assessing the costs of motivated behavior to deal with it/them and seeing if we had the resources to cover these costs, to experiencing strain if the resources are not sufficient, using problem focused coping to deal with the demand, the experience of stress if PFC does not suffice, and finally, use of emotion focused coping to manage the stress. With the stress controlled, we can either ride out our time until the demand is over or use PFC strategies to help deal with it. I presented

various EFC strategies we can use and, in this section, will talk briefly about how religion can help us cope.

9.5.2. Religious Coping

So how might we use religion to help us deal with life's demands, whether daily hassles or stressors? Religious coping can take two forms - positive or negative (Pargament et al., 1998). In *positive religious coping* we might say that the event happened, or is happening, because it was part of God's plan; we could ask God for guidance or reassurance that we will be okay; we can seek advice from a pastor, rabbi, minister, priest, etc.; and we can see God as a partner. In *negative religious coping* we might see the event as punishment from God, the work of Satan and evil, or might passively rely on God to fix the problem for us. Positive religious coping reflects a secure relationship or attachment with God while negative religious coping demonstrates an insecure relationship (Pargament et al., 2011). More on attachment and God later in this module.

But how much religion do you need to cope? Believe it or not, too much reliance on religion can be bad. In a 2003 study lead by Alexis Abernethy of the Fuller Theological Seminary, researchers evaluated 156 spouses of cancer patients for religious coping, symptomology related to depression, social support, self-efficacy, and how much they believed they controlled the events of their life. Results showed that levels of depression were the lowest for the spouses who used religious coping in moderation. Using religious coping excessively could lead to ignoring other useful coping mechanisms, the lead author speculated. For more on this research see the In Brief article in *Monitor on Psychology* (2003, Vol. 34, No 1.) by visiting:

<http://www.apa.org/monitor/jan03/religion.aspx>

Pargament et al. (2000) identified five major functions of religious coping to include gaining control over the situation, finding meaning, feeling a closeness with God which provides comfort, achieving closeness to others, and transforming life. It provides the most benefit for those with a stronger religious orientation (Pargament et al., 2001).

Religious coping has been shown to be helpful for those suffering from geriatric depression (Bosworth et al., 2003), provide hope to Muslim war refugees from Kosovo and Bosnia (Ai, Peterson, & Huang, 2009), aid with the management of chronic pain in older adults (Dunn and Horgas, 2004), support good mental health (Fabricatore, Handal, Rubio, & Gilner, 2009), lead to a reduction in stress symptoms related to extreme stressors such as 9/11 (Meisenhelder & Marcum, 2004), help patients adjust to a diagnosis of prostate cancer (Gall, 2004), aid in marital adjustment (Pollard, Riggs, & Hook, 2014), and finally help patients live with HIV (Pargament et al., 2004).

9.5.3. Prayer

Another form religious coping takes is prayer. Individuals pray to help find meaning in a situation, to change events, gain control, seek help from God, and build one's sense of self-worth. Basically, the same set of reasons discussed earlier.

So how and when does prayer develop as a form of religious coping (i.e. a type of motivated behavior to deal with demands)? Long, Elkind, and Spilka (1967) identified three stages prayer develops through in childhood. Stage I children (aged 5-7) had a vague and indistinct notion of prayer. They were only somewhat aware that prayers are linked with the term "God" and did not exhibit a great deal of real comprehension. Children who were unaware about the nature of prayer also did not know whether dogs and cats prayed.

Stage II (7-9) prayer was now concrete. It was conceived in terms of a specific and appropriate activity. Seven-year-old Jimmy reported that prayer is used to obtain such things as water, food, rain, and snow and that it is asked of God. One interesting finding is that children did not believe that God could handle multiple prayer requests because he had a limited capacity.

Stage III (10 and up) marks the belief that prayer is a private conversation with God and was not discussed with others. Children did not believe that dogs and cats pray because they are not that smart, and they felt that all children do not pray either because they do not believe or because they do not know about the Christian religion.

Prayer begins as just a word that is meaningless to the child. Over time it develops into a mental activity associated with a specific system of religious belief not shared by all people in the world. Another change is the shift from using prayer to gratify personal desires, to thanking God for things already received. Older children were noted to ask God for peace or to help the poor or the sick.

Affectively, young children associated prayer only with a fixed time as in before going to bed, at church, or before eating. Older children used it to respond to specific feelings. For example, they may have been worried, upset, lonely, or troubled. Negative feelings elicited prayer more than positive ones. Younger children were often upset if these prayers were not answered while older ones were more resigned, also seeing God as a helper (Long, Elkind, and Spilka, 1967).

What do you think? Does prayer work for you?

9.6. IS THERE A LINK BETWEEN RELIGION AND ATTACHMENT?

Section Learning Objectives

- Define and describe parenting styles.
- Clarify the link between parenting styles and religion.
- Define and describe attachment styles.
- Clarify the link between attachment and religion.

9.6.1. Parenting Styles and Religion

9.6.1.1. Defining parenting style. Parenting styles are important because parents play a key role in the lives of their children. Children use them as attachment figures and learn about the world they live in through their tutelage. Darling and Steinberg (1993) defined *parenting styles* as all the attitudes, practices, and nonverbal expressions of the parents that characterize the nature of parent-child interactions in different situations. The authors' further note that the effect of parenting styles is to alter the effectiveness of family socialization practices and, more importantly, the degree of receptiveness the child exhibits toward these practices.

9.6.1.2. Specific parenting styles. Contemporary research stems from the pioneering work of Diana Baumrind (1966). She cited the existence of three main parenting styles: authoritarian, authoritative, and permissive. Maccoby and Martin (1983) redefined this typology by identifying two underlying dimensions. The first is demandingness which is composed of control, supervision, and maturity demands. Next is responsiveness which reflects warmth, involvement, and acceptance. From these two dimensions a fourfold typology emerges. The discussion below of each parenting style will blend Baumrind's (1966) and Maccoby and Martin's (1983) research, and add the fourth parenting style - uninvolved. .

First is the **authoritarian parenting style** which is characterized by a controlling, rigid, and cold parent. In this setting, the parent's word is the law and he or she is willing to be punitive to enforce it. Strict, unquestioning obedience by their children is valued and an expression of disobedience is considered intolerable. These characteristics reflect high demandingness and low responsiveness (Maccoby & Martin, 1983). Baumrind (1966) adds that the authoritarian parent attempts to shape and control the child's behavior to conform to a set standard of conduct which is usually absolute and theologically motivated and at times created by a higher authority. The child should also accept the parent's word for what is right. Children of these types of parents tend to be withdrawn, unfriendly, and have relatively few social skills. Additionally, they behave uneasily around peers. Girls of authoritarian parents remain dependent on their parents while boys express hostility.

The second parenting style is the **authoritative parenting style** and these parents set firm, clear

limits on their child's behavior. Unlike the authoritarian parent, authoritative parents are willing to hear disagreement from the children and give reasons for their rules. If the child is punished, the parent states a rationale for the punishment that is imposed. These parents exhibit high demandingness and high responsiveness (Maccoby & Martin, 1983). Baumrind (1966) adds that the parent directs the child's behavior in a rational, issue-oriented manner and that she recognizes that the child has her own interests and peculiarities. Children of these types of parents are encouraged to be independent and are often self-assertive and cooperative. They tend also to be friendly with their peers and possess a strong motivation to achieve.

The third parenting style is **permissive or indulgent**. These parents provide inconsistent and lax feedback. As such, they require little of their children and do not feel like they have much to do with how their children turn out (Feldman, 1997). Baumrind (1966) says that permissive parents make few demands for household responsibilities and they present themselves as a resource for the child to use as she wishes. These parents exhibit low demandingness and high responsiveness (Maccoby & Martin, 1983).

And finally, is the **uninvolved or neglectful parenting style**, characterized by being unusually uninvolved in the child's life and shows no real concern for the well-being of the child. These parents exhibit low demandingness and low responsiveness (Maccoby & Martin, 1983). Their children are often moody and, like permissive-indulgent children, often have low self-esteem and low social skills, both of which have been linked to drug use, delinquency, and poor academic achievement (Radziszewska, Richardson, Dent, and Flay, 1996).

9.6.1.3. A parenting style and religious behavior link? Some early studies by researchers such as Bateman and Jensen (1958) do indicate a potential link between parenting and religiosity. The authoritarian parenting style is similar to the Biblical injunctions to emphasize obedience among children. It warns parents not to spare the rod (Zern, 1987). This has also been noted by Fugate (1980) and Meier (1977) who said that those who adopt a literal belief in the Bible often utilize corporal punishment at both home and school. Nunn (1964) suggests that some parents use the image of a punishing God to control their children's behavior. Nelson and Kroliczak (1984) attempted to replicate Nunn's study using Minnesota Elementary Schools and obtained different results. They discovered like Nunn, that when parents did use this controlling image of a deity, children produced higher self-blame scores and a greater need to be obedient. But overall, parents do not generally use such coalitions with God to control a child's behavior. Hence, the image of a punishing God has been dying out for about three decades now.

9.6.2. Attachment and Religion

9.6.2.1. Defining attachment and styles. **Attachment** is an emotional bond established between two individuals and involving one's sense of security. Our attachments during infancy have

repercussions on how we relate to others the rest of our lives. Mary Ainsworth (1978) identified three attachment styles an infant possess. The first is a *secure attachment* and results in the use of a mother as a home base to explore the world. The child will occasionally return to her. She also becomes upset when she leaves and goes to the mother when she returns. Next is the *avoidantly attached* child who does not seek closeness with her and avoids the mother after she returns. Finally is the *ambivalent attachment* in which the child displays a mixture of positive and negative emotions toward the mother. She remains relatively close to her which limits how much she explores the world. If the mother leaves, the child will seek closeness with the mother all the while kicking and hitting her.

A fourth style has been added due to recent research. This is the *disorganized-disoriented attachment style* which is characterized by inconsistent, often contradictory behaviors, confusion, and dazed behavior (Main & Solomon, 1990). An example might be the child approaching the mother when she returns, but not making eye contact with her.

The interplay of a caregiver's parenting style and the child's subsequent attachment to this parent has long been considered a factor on the psychological health of the person throughout life. For instance, father's psychological autonomy has been shown to lead to greater academic performance and fewer signs of depression in 4th graders (Mattanah, 2001). Attachment is also important when the child is leaving home for the first time to go to college. Mattanah, Hancock, and Brand (2004) showed in a sample of four hundred four students at a university in the Northeastern United States that separation individuation mediated the link between secure attachment and college adjustment. The nature of adult romantic relationships has been associated with attachment style in infancy (Kirkpatrick, 1997). One final way this appears in adulthood is through a person's relationship with a god figure.

9.6.2.2. Attachment and religion. An extrapolation of attachment research is that we can perceive God's love for the individual in terms of a mother's love for her child, but this attachment is not always to God. For instance, Protestants, seeing God as distant, use Jesus to form an attachment relationship while Catholics utilize Mary as their ideal attachment figure. It could be that negative emotions and insecurity in relation to God do not always signify the lack of an attachment relationship, but maybe a different type of pattern or style (Kirkpatrick, 1995). Consider that an abused child still develops an attachment to an abusive mother or father. The same could occur with God and may well explain why images of vindictive and frightening gods have survived through human history.

One important thing to note is that in human relationships, the other person's actions can affect the relationship, for better or worse. Perceived relationships with God do not have this quality. As God cannot affect us, we cannot affect Him. This allows the person to invent or reinvent the relationship with God in secure terms without allowing counterproductive behaviors to retard progress. Hence, Kirkpatrick (1995) says people "with insecure attachment histories might be able to find in God...the kind of secure attachment relationship they never had in human interpersonal relationships (p. 62)." The best human attachment figures are ultimately fallible while God is not limited by this.

Pargament (1997) defined three styles of attachment to God. First is the 'secure' attachment in which

God is viewed as warm, receptive, supportive, and protective, and the person is very satisfied with the relationship. Next is the 'avoidant attachment' in which God is seen as impersonal, distant, and disinterested, and the person characterizes the relationship as one in which God does not care about him or her. Finally is the 'anxious/ambivalent' attachment. Here, God seems to be inconsistent in his reaction to the person, sometimes warm and receptive and sometimes not. The person is not sure if God loves him or not. We might say that the God of the secure attachment is the authoritative parent, the God of the avoidant attachment is authoritarian, and the God of the anxious/ambivalent attachment is permissive.

Kirkpatrick and Shaver (1990) note that attachment and religion may be linked in important ways. They offer a "**compensation hypothesis**" which states that insecurely attached individuals are motivated to compensate for the absence of this secure relationship by believing in a loving God. Their study evaluated the self-reports of 213 respondents (180 females and 33 males) and found that the avoidant parent-child attachment relationship yielded greater levels of adult religiousness while those with secure attachment had lower scores. The avoidant respondents were also four times as likely to have experienced a sudden religious conversion.

They also remind the reader that the child uses the attachment figure as a haven and secure base and go on to note that there is ample evidence to suggest the same function for God. Bereaved persons become more religious, soldiers pray in foxholes, and many who are in emotional distress turn to God. Further, Christianity has a plethora of references to God being by one's side always and the person having a friend in Jesus.

Pargament (1997) expanded upon the compensation hypothesis and showed that the relationship between attachment history and religious beliefs is far from simple. He summarized four relationships between parental and religious attachments extrapolated from Kirkpatrick's research. First, if a child had a secure attachment to the parent, he may develop a secure attachment to religion, called '*positive correspondence*.' In this scenario, the result of a loving and trusting relationship with one's parents is transferred to God as well. This is contrary to the findings of Kirkpatrick and Shaver (1990) which said that securely attached individuals displayed lower levels of religiosity. More in line with their view is Pargament's second category, secure attachment to parent and insecure attachment to religion, called '*religious alienation*.' Here the person who had a secure attachment to parents may not feel the need to believe in God. He does not need to compensate for any deficiencies.

The third category is also in line with Kirkpatrick and Shaver's study. Modeled after their hypothesis, '*religious compensation*' results from an insecure attachment to parent and a secure attachment to religion. Finally, an insecure attachment to parents may yield an insecure attachment to religion called '*negative correspondence*' (see Table 9.1). These insecure parental ties have left the person unequipped to build neither strong adult attachments nor a secure spiritual relationship. The person may cling to "false gods" like drug and alcohol addiction, food addiction, religious dogmatism, a religious cult, or a codependent relationship.

Table 9.1

Four Attachment Models for Parent and Religious Attachment

	Parent	
Religion	Secure Attachment	Insecure Attachment
Secure Attachment	Positive Correspondence	Religious Compensation
Insecure Attachment	Religious Alienation	Negative Correspondence

9.7. RELIGION AND DEATH

Section Learning Objectives

- Clarify to what extent Americans believe in an afterlife.
- Define and describe terror management theory.
- Describe a typical MS study.
- Examine the link between TMT and worldview defense.
- Examine the link between TMT and self-esteem.
- Examine the link between TMT and in-group bias.
- Examine the link between TMT and prosocial behavior.
- Examine the link between TMT and religious.
- Describe the salient features of an NDE.
- Appraise the research on NDEs.

9.7.1. Belief in the Afterlife

So what happens when we die? And the answer is..... we really don't know. Religions speculate as to what happens when we die in terms of our soul and not really the physical body and for many, this tenet of the faith is very strongly held onto. On June 15, 2015 The Huffington Post published an article called *Paradise Polled: Americans and the Afterlife* in which author Kathleen Weldon reported that American's belief in an afterlife has remained relatively steady since 1944. She reports the results of a 2014 CBS News poll showing that 66% of respondents believed in heaven and hell, 11% in just heaven, and 17% in neither. It is no surprise that 36% atheists and agnostics report believing in heaven and hell and 7% in heaven only.

With a belief in heaven (and hell) firmly established in the U.S., the next question is who is able to enter heaven. The results are interesting. A 2006 poll showed that 69% of respondents said Christians and non-Christians can go to Heaven, with 24% saying only Christians. Another poll that year and asking if a person not of one's faith could go to heaven and attain salvation and found that 84% of those polled said these people could. Only 9% said no.

So the question now turns to what do people do about the anxiety a fear of one's death causes. Terror Management Theory provides us a potential answer.

Check out the Huffington Post article by visiting:

https://www.huffingtonpost.com/kathleen-weldon/paradise-polled-americans_b_7587538.html

9.7.2. Managing Death Anxiety - Terror Management Theory (TMT)

9.7.2.1. What is TMT? Ernest Becker (1962, 1973, & 1975) stated that it is the human capacity for intelligence, to be able to make decisions, think creatively, and infer cause and effect, that leads us to an awareness that we will someday die. This awareness manifests itself as terror and any cultural worldviews that are created need to provide ways to deal with this terror, create concepts and structures to understand our world, answer cosmological questions, and give us a sense of meaning in the world.

Based on this notion, **Terror Management Theory** (TMT; Greenberg, Pyszczynski, and Solomon, 1986) posits that worldviews serve as a buffer against the anxiety we experience from knowing we will die someday. This cultural anxiety buffer has two main parts. First, we must have faith in our worldviews and be willing to defend them. Second, we derive self-esteem from living up to these worldviews and behaving in culturally approved ways. So, culture supports a belief in a just world and meeting the standards of value of the culture provides us with immortality in one of two ways. Literal immortality is arrived at via religious concepts such as the soul and the afterlife. Symbolic immortality is provided by linking our identity to something higher such as the nation or corporation and by leaving something

behind such as children or cultural valued products. It has also been linked to the appeal of fame (Greenberg, Kosloff, Solomon, Cohen, and Landau, 2010).

Finally, based on whether death thoughts are in focal attention or are unconscious, we employ either proximal or distal defenses. *Proximal defenses* involve the suppression of death-related thoughts, a denial of one's vulnerability, or participating in behavior that will reduce the threat of demise (i.e. exercise) and occur when thought of death is in focal attention. On the other hand, *distal defenses* are called upon when death thoughts are unconscious and involve strivings for self-esteem and faith in one's worldview and assuage these unconscious mortality concerns through the symbolic protection a sense of meaning offers.

9.7.2.2. The typical mortality salience study. In a typical MS study, participants are told they are to take part in an investigation of the relationship between personality traits and interpersonal judgments. They complete a few standardized personality assessments which are actually filler items to sustain the cover story. Embedded in the personality assessments is a projective personality test which consists of two open ended questions which vary based on which condition the participant is in. Participants in the MS condition are asked to write about what they think will happen to them when they die and the emotions that the thought of their own death arouses in them. Individuals in the control condition are asked to write about concerns such as eating a meal, watching television, experiencing dental pain, or taking an exam. Next, they complete a self-report measure of affect, typically the PANAS, to determine the effect of MS manipulation on their mood. Finally, they are asked to make judgments about individuals who either directly or indirectly threaten or bolster their cultural worldviews.

9.7.2.3. Worldview defense. General findings on TMT have shown that when mortality is made salient, we generally display unfavorable attitudes toward those who threaten our worldview and celebrate those who uphold our view. This effect has been demonstrated in relation to anxious individuals even when part of one's in-group (Martens, Greenberg, Schimel, Kosloff, and Weise, 2010) such that mortality reminders led participants to react more negatively toward an anxious police liaison from their community (Study 1) or to a fellow university student who was anxious (Study 2). Mortality salience has also been found to elevate preference for political candidates who are charismatic and espouse the same values associated with the participant's political worldview, whether conservative or liberal (Kosloff, Greenberg, Weise, and Solomon, 2010).

Rosenblatt, Greenberg, Solomon, Pyszczynski, and Lyon (1989) examined reactions of participants to those who violated or upheld cultural worldviews across a series of six experiments. In general, they hypothesized that when people are reminded of their own mortality, they are motivated to maintain their cultural anxiety buffer and are punitive toward those who violate it and benevolent to those who uphold it. Experiments 1 and 3 provided support for the hypothesis in that subjects induced to think about their own mortality increased their desire to punish the moral transgressor (i.e. to recommend higher bonds for an accused prostitute) while rewarding the hero (Experiment 3). Experiment 2 replicated the findings of Experiment 1 and extended them by showing that increasing MS does not lead

subjects to derogate just any target as it had no effect on evaluations of the experimenter. Also, MS increased punishment of the transgressor only among subjects who believed the target's behavior was truly immoral.

Experiments 4 - 6 tested alternative explanations for the findings. First, self-awareness could lead individuals to behave in a manner consistent with their attitudes and standards. The results of Study 4 showed that unlike MS, self-awareness does not encourage harsher bond recommendations and in fact, heightened self-awareness reduces how harshly a prostitute is treated among individuals with positive attitudes toward prostitution. In Study 5, physiological arousal was monitored and MS was found not to arise from mere heightened arousal. Finally, Experiment 6 showed that particular features of the open-ended death questionnaire did not lead to the findings of Studies 1-5, but rather to requiring subjects to think about their own deaths.

McGregor, Lieberman, Greenberg, Solomon, Arndt, Simon, and Pyszcznski (1998) tested the hypothesis that MS increases aggression against those who threaten one's worldview by measuring the amount of hot sauce allocated to the author of a derogatory essay. In the study, politically conservative and liberal participants were asked to think about their own death (MS) or their next important exam (control). They were then asked to read an essay that was derogatory toward either conservatives or liberals. Finally, participants allocated a quantity of very spicy hot sauce to the author of the essay, knowing that the author did not like spicy foods and would have to consume the entire sample of hot sauce. As expected, MS participants allocated significantly more hot sauce to the author of the worldview-threatening essay than did control participants.

In a second study, participants thought about their own mortality or dental pain and were given an opportunity to aggress against someone who threatened their worldview. Half of the MS participants allocated the hot sauce before evaluating the target while the other half evaluated the target before allocating the hot sauce. Results of Study 2 showed that MS participants allocated significantly more hot sauce when they were not able to verbally derogate the targets prior to the administration of hot sauce. However, when MS participants were able to first express their attitudes toward the target, the amount of hot sauce allocated was not significantly greater than for the controls. This finding suggests that people will choose the first mode of worldview defense provided to them.

9.7.2.4. Self-esteem. According to the anxiety buffer hypothesis, if a psychological structure provides protection against anxiety, then strengthening that structure should make an individual less prone to displays of anxiety or anxiety related behavior in response to threats while weakening that structure should make a person more prone to exhibit anxiety or anxiety related behavior in response to threats. In support of this, Greenberg et al. (1992) showed that by increasing self-esteem, self-reported anxiety in response to death images and physiological arousal in response to the threat of pain could be reduced. Furthermore, the authors found no evidence that this effect was mediated by positive affect. Additional support for the function of self-esteem in reducing anxiety was provided by Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon, and McGregor (1997) who showed that individuals with high self-esteem, whether induced experimentally (Experiment 1) or dispositionally (Experiment 2), did not

respond to MS with increased worldview defense and that this occurred due to the suppression of death constructs (Experiment 3).

9.7.2.5. TMT and in-group bias. Recall that Rosenblatt et al. (1989) found that when mortality is salient, we have a tendency to derogate those who attack our worldview (Study 1) and that this effect does not generalize to just anyone (Study 2) as the experimenter was not viewed negatively. Also, when mortality is salient, those who defend our worldview are seen as a hero. Likewise, Greenberg, Pyszczynski, Solomon, Rosenblatt, Veeder, Kirkland, and Lyon (1990) demonstrated that under MS, we have a tendency to derogate an out-group member (Jewish person) compared to an in-group member (Christian). This tendency to derogate occurs even if we are presented with information concerning their credibility and background. Interestingly, the effects of MS in relation to out-group member evaluation can be reversed if we prime a tolerance norm (Greenberg, Simon, Pyszczynski, Solomon, and Chatel, 1992).

This tendency to favor our in-group was further demonstrated in relation to nationalistic bias (Nelson, Moore, Olivetti, and Scott, 1997). Participants were first shown a video of car crashes with disturbing images or an innocuous driver's education video. Next, participants were asked to do a thought listing procedure in which they write down all their thoughts about their own death. Finally, they were given a scenario describing a person who was hurt in an accident and was suing the company. For half of the subjects, the company was American and for the other half the company was Japanese. Results showed that when thoughts of death were focused on the participant themselves, the American participants tended to assign more blame on the person when the company was American but assigned more blame to the company when it was Japanese. When thoughts of death were more general or on other family members, assignment of blame fell to the company and less on the person, possibly because they imagined their family members being the one hurt and so they tried to protect them.

Wisman and Koole (2003) explored whether MS can promote affiliation with those who oppose our worldview. In general, the authors found that MS led to increased affiliation with a worldview threatening group (Experiments 1 and 2), even when affiliation with the group forced participants to attack their own worldviews (Experiment 3). It appears that affiliation defenses were powerful enough to override at least some of the participant's concerns with validating their worldview.

Hirschberger, Florian, and Mikulincer (2005) examined responses to people with disabilities (PWDs). The authors suspected that Western cultures may regard PWDs as failing to conform to the physical expectations embodied in the Western cultural worldview and so pose a threat to its validity. Proof for this may lie in the tendency of people to avoid contact with PWDs because of the *guilt by association phenomenon*. Hence, the costs of emotionally approaching people who are physically different may be amplified under MS conditions. Results showed that when men do not experience high levels of death awareness (control condition), they perceive in-group members with disabilities as part of the in-group and display an in-group bias, but when death is made salient (MS condition), they react to these same in-group members as if they were out-group members and distance themselves from them. For women, MS led to a display of the in-group bias and an expression of compassion toward the in-group target

with a disability (Hirschberger et al., 2005).

Finally, McPherson and Joireman (2009) evaluated whether standard MS effects found in previous research are greater under group conditions and whether MS amplifies the tendency for groups to be more aggressive than individuals. Many studies reveal that intergroup interactions tend to be more competitive and more aggressive compared to interindividual interactions, and McPherson and Joireman (2009) hypothesized that this interindividual-intergroup discontinuity may have important implications for TMT. As in previous TMT research, they found that individuals primed with MS are more aggressive towards an individual who threatens their worldview as compared to controls. Second, their results replicated discontinuity research which showed that groups tend to be more aggressive than individuals. Third and most important, their results showed that participants in the MS condition tended to allocate more hot sauce in a group context and the discontinuity effect was stronger under MS conditions. On a related note, Motyl, Hart, and Pyszczynski (2010) found that intergroup hostility and aggression could be reduced among individuals who tend to be more dispositionally aggressive (i.e. high right wing authoritarianism) if violence is portrayed as something instinctual and creaturely. This ties into TMT's assertion that people are motivated to elevate themselves above animalistic things as a way of denying their creatureliness and mortality. So by linking support for violence to something inhuman, it can be reduced but only when existential concerns are made salient.

9.7.2.6. TMT and prosocial behavior. Does raising one's awareness of their own mortality affect cooperative behavior? The answer depends. Joireman and Duell (2005) found that as hypothesized, prosocials scored significantly higher than proselves on self-transcendent values, whereas proselves scored significantly higher than prosocials on self-enhancement values. That said, proselves expressed stronger endorsement of self-transcendence values in the MS rather than the dental pain condition. These results suggest that after thinking about their own death, proselves find themselves falling short of a societal injunction to be concerned with the well-being of others and are therefore motivated to reestablish their positive self-regard by more strongly endorsing self-transcendent values. They call this the Ebenezer shift. Prosocials act no different since they are living up to the standard already. It should be noted that studies 2a and 2b showed that when proselves have a positive exemplar, MS is unlikely to lead proselves to endorse self-transcendence values.

In a follow-up study, Joireman and Duell (2007) found that when evaluating charities, participants high in self-transcendence values evaluated charities more favorably overall. Participants low in these values scored significantly higher in the MS condition than the DP condition whereas those high in self-transcendence values showed no significant difference between the two conditions in terms of evaluation of the charities. Also, those low in self-transcendence values scored significantly lower in terms of their evaluation of the charities than those high in self-transcendence values in the DP condition but did not differ from those high in self-transcendence values in the MS condition.

Self-transcendence values emerge again as important for prosocial behavior. In a pandemic, cooperation will be critical as individuals will need to forgo their entitlement to a vaccine that could be life saving so that someone who needs it more can have it. Norms also emerge as important and so the

values of conformity and tradition play in here. MS was shown by Jonas et al. (2008) to increase the need to adhere to a cultural norm but Jonas et al. (2002) showed that whether or not the participants were greedy or generous depended on which norm was made salient.

Finally, Kasser and Sheldon (2000) show that when faced with the prospect of death participants showed a greater propensity for greed, though it was not linked to SVO. Still, people could be led to take what they want for survival reasons, depending on what norms they find to be important to them. Hirschberger, Ein-Dor, and Almakias. (2008) investigated the conditions that promote or impeded prosocial attitudes and behaviors when mortality is salient. Their findings indicated that although prosocial behavior is highly valued in most societies, self-protective concerns can override the general positive feeling one has toward helping others in need and lead to defensive withdrawal. For instance, in Study 2, participants were randomly approached by a research assistant who gave them a flier (either reflecting the MS condition - organ donor - or a control condition - Caring Heart). Then, another research assistant seated at one of two booths solicited these participants to donate. Results indicate that for participants asked to donate to Caring Heart, MS led to a larger percentage of donations compared to the control condition. However, for participants asked to sign an organ donation card, MS had the opposite effect and led to a smaller percentage of donations. Also, in Study 4, priming death increased prosocial behavior toward nonthreatening worldview-consistent causes (i.e. person without a disability). However, when death was salient, self-protective concerns overrode other-oriented concerns and helping was reduced when the person asking for help was seated in a wheelchair.

Recall that Joireman and Duell (2005, 2007) showed that proselves can act prosocially following reminders of mortality, called the Ebenezer shift. But what about in a true life and death situation where reminders of death are all around the person? How does this affect a person's psychological health? Could the prosel self maintain that social value orientation and be joined in the behavior by the prosocial? It is difficult to say and creating conditions indicative of a pandemic may prove challenging in a laboratory setting.

9.7.2.7. TMT and religious belief. It seems logical to expect that religion is linked to mortality salience/terror management given religion's providence over the afterlife and immortality (Vail, Rothschild, Weise, Solomon, Pyszczynski, and Greenberg, 2010). The cliché, 'There are no atheists in foxholes' highlights the fact that when threatened with death, people gravitate to their deities for comfort and salvation. So what does research say about a potential link?

Presented earlier as an example of in-group bias, Greenberg et al. (1990) found that individuals faced with their own mortality were more likely to defend and uphold their religious faith by showing favoritism to those who shared their beliefs while derogating those who did not. Similarly, among participants with a prior belief in the afterlife, when mortality is made salient they show increased belief in the afterlife as compared to those with a weak or no belief (Osarchuk and Tatz, 1973; Schoenrade, 1989).

Across three studies, Norenzayan, Dar-Nimrod, Hansen, and Proulx (2009) framed a worldview-

threatening message in religious terms and found that religious and non-religious participants respond to MS differentially. The non-religious made the typical response of derogating the threatening message while religious participants showed a vastly different response – they showed approval of the message despite it contradicting and potentially threatening their worldview and way of life. The authors interpret the finding by noting the presence of two competing stances that are activated at the same time when messages such as this are presented. The first stance is a divinity-oriented stance while the other is a secular cultural stance. For the non-religious, only the latter is activated when mortality is made salient but for the religious, both are activated which negates the effect of MS. It is however noted that if the “supernatural defensive strategy” (pg. 110) is non-salient or unavailable, then religious individuals would likely respond to threats in the same manner as non-religious individuals.

Maybe the situation is not as simple as being religious or not. Jonas and Fischer (2006) provide evidence which suggests that between the two main religious orientations, intrinsically religious people are better able to deal with prospects of death than extrinsically religious people. The authors explain that it is not mere religious belief that helps to buffer mortality concerns, the quantitative aspect, but the quality of the relationship is what matters. Extrinsically religious people see religion as a means to an end, the end being such things as safety, solace, and social standing whereas intrinsically oriented individuals see religion as an end in itself and have a mature and sincere faith in which their beliefs are deeply held and guide their actions daily.

Religious beliefs have also been known to take precedence over potentially life-saving procedures recommended by medical professionals for either the person or for procedures meant for others, such as dependent children. Vess, Arndt, Cox, Routledge, and Goldenberg (2009) conducted a series of studies in which they tested the hypothesis that reminders of death would increase the willingness of a person high in religious fundamentalism to substitute medical treatment with faith. The results from five studies supported this hypothesis such that following reminders of mortality, individuals high in religious fundamentalism were more willing to endorse prayer as a substitute for medical treatment or treating physical ailments. The effect held even when participants in Study 4 were made aware of the possibility of integrating prayer and medicine. The authors speculate that this finding highlights how death-focused thoughts can “bring underlying motivations to the surface and endorse decisions they may not otherwise” (pg. 346).

9.7.3. Near-Death Experiences

Near-death experiences, or NDEs, include an awareness of being dead, an out-of-body experience, moving through a tunnel, undertaking a life review, and/or meeting with those long gone (van Lommel, 2011). NDEs are reported by an estimated 200,000 Americans each year but this experience is encountered in all cultures around the world. A 1992 Gallup poll showed that 13 million Americans, representing 5% of the population, had an NDE at some point in their life and 774 NDEs are experienced each day in the U.S. Four percent of Germans surveyed in 2011 had experienced a NDE

(the survey included 2,000 participants; source for statistics: https://www.theepochtimes.com/how-common-are-near-death-experiences-ndes-by-the-numbers_757401.html). Accounts of NDEs have been found all through history, dating as far back as the ancient Greeks, and are at times legitimized by professionals such as Raymond Moody (2016) in his book *Life After Life* which documents NDEs.

So are NDEs real experiences? Mobbs and Watt (2011) cast doubt on the experience of an NDE as paranormal and explain the features of an NDE as such:

- An awareness of being dead - The authors note that this awareness is not limited to NDEs and is common in those with Cotard or Walking Corpse syndrome which is linked to the parietal cortex and prefrontal cortex and has been observed following trauma or being in the advanced stages of typhoid and multiple sclerosis.
- Out-of-body experiences - Feeling like you are floating outside of the body has also been linked to interrupted sleep patterns prior to sleep or waking. They can also be induced by stimulating the right temporoparietal junction and patients report seeing themselves lying in bed and floating (Blanke & Arzy, 2004).
- A tunnel of light - The authors point out that pilots flying at G-force can at times experience hypotensive syncope or the development of “tunnel-like peripheral to central visual loss over 5–8 seconds” and in cases of NDEs the phenomena might be explained by visual acuity during retinal ischemia (Nelson, Mattingly, and Schmitt, 2007).
- Meeting deceased people - A sense of presence can be obtained by electrically stimulating the adjacent region of the angular gyrus (Blanke et al., 2002).
- Positive emotions - NDEs are associated with euphoria or pure bliss which can be explained by the actions of recreational drugs, Ketamine, or a release of dopamine and opioids when a person is under predatory attack. The latter represents mechanisms activated to ensure the survival of the species.

Relatedly, Klemenc-Ketis, Kersnik, and Grmec (2010) found that reports of NDEs were related to higher concentrations of CO₂ and higher serum levels of K (Potassium) in patients experiencing cardiac arrest. They also found that reports of NDEs were higher for patients who had a previous NDE. Martial et al. (2018) found that individuals reporting a NDE show greater levels of fantasy proneness, though the correlational and retrospective design of their study did not allow for causal statements to be made. Interestingly, Martial et al. (2017) found that the more intense a NDE is, the more their memory is phenomenologically detailed when asked to recall the experience at a later time. The passage of time does not seem to decay these memories either.

On a final note, Mobbs and Watt, (2011) suggest that we might be motivated to experience a NDE through *a priori* expectations and making “sense of the situation by believing they will experience the

archetypal near-death experience package” (pg. 449). What do you think?

Module Recap

There you go. We tackled the issue of how motivation and motivated behavior relate to religiosity. By no means was this an exhaustive discussion, but it does give you some idea of the way the two constructs relate to one another. For a more thorough discussion, I invite you to take a seminar in the psychology of religion or to see what the religion/theology department has to offer. With the closing of Module 9 we are also finished with Part III of the book on Personality and Needs. We will move into a discussion of development, health, and social processes in motivation.

IV

PART IV: DEVELOPMENT, HEALTH,
AND SOCIAL PROCESSES IN
MOTIVATION

Part IV. Development, Health, and Social Processes in
Motivation

Module 10: Motivation across the Lifespan

Module Overview

Welcome to Module 10 and our discussion....that is, our brief discussion or overview, of developmental psychology. I must state *brief* because this is by far my favorite area in psychology and I could write a book on the topic. There are also so many issues to cover within each developmental period that we cannot reasonably cover them all. These periods include: infancy, preschool years, middle childhood, adolescence, and adulthood. Bear in mind that adulthood is broken down into early, middle, and late and each has its own issues to discuss. Our focus in each period will be on physical, cognitive, and social/personality changes. Again, this is an overview of what you would cover in a developmental course and I am focusing on topics related to motivation. With that said, let's discuss changes in motivated behavior across the lifespan.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 361: Developmental Psychology and PSYCH 363: Psychology of Aging at Washington State University.

Module Outline

- 10.1. Brief Overview
- 10.2. Infancy
- 10.3. Preschool Years
- 10.4. Middle Childhood
- 10.5. Adolescence
- 10.6. Adulthood

Module Learning Outcomes

- Clarify what developmental psychology is and how we investigate it.
- Describe changes in physical, cognitive, and social/personality development during infancy.
- Describe changes in physical, cognitive, and social/personality development during the preschool years.
- Describe changes in physical, cognitive, and social/personality development during middle childhood.
- Describe changes in physical, cognitive, and social/personality development during adolescence.
- Describe changes in physical, cognitive, and social/personality development during adulthood.

10.1. BRIEF OVERVIEW

Section Learning Objectives

- Define developmental psychology.
- Differentiate primary and secondary aging.
- List the eight developmental periods.
- List and describe the types of development.
- Outline the four principles of development.

10.1.1. Defining Terms

Developmental psychology studies patterns of growth, stability, and change that occur during the life span. Let's break this down. *Growth* indicates movement from simple to complex or maturing. As you will see, most growth occurs early in life. This is followed by a brief period of *stability* in early adulthood in which we have fully matured, and our growth is complete. Our abilities are at their peak and so stability represents a relatively quiet time developmentally, at least compared to other periods. *Change* occurs later in life and in this context means decline. Beginning in later early adulthood and through late adulthood our body shows signs of wear and tear. These signs are not always clear but are there nonetheless and many occur naturally, called **primary aging**. An example is declines in our reaction time as we age, stiffness in our joints, or loss of near vision. Of course, we can willingly engage in behaviors to improve or hasten our decline, called **secondary aging**. This includes using drugs and alcohol, working out, reading for pleasure, adhering to doctor's orders, or going for a walk after dinner.

And finally, these patterns are seen across the *entire life span*. For a long time, it was believed that everything you were going to be was determined in childhood. This perspective basically says that very little development occurred after childhood and adolescence. We now know this is not true and the work of individuals such as Erik Erikson show how development continues long past childhood.

10.1.2. Developmental Periods

Human development occurs over 8 main periods as follows:

- Prenatal Development - Lasts from fertilization of the egg cell up to the birth of the **neonate** or newborn.
- Infancy/Toddlerhood - From birth to about age 3
- Preschool Years - From age 3 to 6 years
- Middle Childhood - From 6 to 12 years
- Adolescence - From 12 to 20 years
- Early or Young Adulthood - From 20 to 40 years
- Middle Adulthood - From 40 to 65(ish - retirement) years
- Late Adulthood - From 65(ish - retirement) to death

For our purposes, prenatal development will not be discussed, and all adulthood periods will be discussed together, resulting in 5 main periods.

10.1.3. Types of Development

Our discussion will focus on the three main types of development - physical, cognitive, and social/personality. **Physical development** includes changes in the body's size and shape and how the body's composition determines behavior. Topics related to this type of development include growth and change in our sensory systems, muscles, brain, use of depth perception, nervous system, and sleep patterns.

Cognitive development focuses on changes in intellectual development and how they affect behavior. Topics for study include language, memory, decision making, intelligence, creativity, and learning.

Social/personality development examines our social interactions with others, social skills, how our relationships grow and change, and changes in personality throughout the life span. We might study sensation seeking behavior in adolescents, attachment to parent and potential moderators of it, finding a career, establishing romantic relationships, challenges that could alter our personality, how to age successfully, and the act of reviewing the life we have lived so far and trying to leave something behind once we die.

10.1.4. Principles of Development

The types of development can be conceptualized as occurring in one of four ways to include:

- **Cephalocaudal principle** - States that development proceeds from head (cephalo) to toe or tail (caudal). For example, your nervous system develops before you can walk or run.
- **Proximodistal principle** - States that development proceeds from near (proximo) to far (distal). We used these two terms when we talked about goals so you should know what they mean already.

An example in the context of development is gross and fine motor skills. The former represents whole body movements centered on your trunk and develop before the latter which can be represented by learning to write (using the hands which are far away from your trunk, or distant).

- **Hierarchical integration** -States that development goes from simple to complex. For example, before you can pick up objects with your hands, you must learn to control individual fingers. And as you will see in Section 10.2, play goes from simple (solitary) to complex (cooperative) with a few other types in the middle.
- **Independence of systems** - States that different systems in the body develop at different rates. For instance, your nervous system develops before your reproductive system, which also represents cephalocaudal principle too.

It is important to understand that though these four principles represent different trajectories for development, they are complementary to one another and not in competition. Development proceeds simple to complex all while moving from top to bottom and from near to far, and our different bodily systems are the center of growth at different times.

10.2. INFANCY

Section Learning Objectives

- Clarify measures the body takes to maintain the efficiency of the nervous system.
- Describe how reflexes aid in our survival.
- Outline the status of the five sensory systems at birth and how their development proceeds.
- Define depth perception and describe the seminal experiment that elucidated it.
- Describe how infants explore the world around them.
- Describe how infants learn about the world and clarify key components of Piaget's theory.
- Explain the development of language as a way infants are motivated to communicate with others.
- Describe changes in sociability and how they affect how we interact with others in our world.
- Outline the development of personality during infancy.

10.2.1. Physical Changes

10.2.1.1. Changes in the brain: Motivated to maintain efficiency. At birth, infants have 100 to 200 billion neurons. There are a lot of neurons but not many neural connections called **synapses**. Over the first two years of life the child will develop billions of new connections through a process called

synaptogenesis, especially if in an enriched environment and not an impoverished one (Krech, Rosenzweig, & Bennett, 1962). This is quite a few new neural connections and so to maintain the efficiency of the nervous system, the body must take certain steps. First, **neurons**, or nerve cells not interconnected with other neurons become unnecessary and die out. Second, neural connections that are used are expanded while those not used are eliminated. The latter is called **synaptic pruning** (Huttenlocher, 1994). This may seem a bit extreme but we take similar measures within our social institutions to maintain efficiency. Underperforming employees are let go (like the individual neuron) and if a company can make its operations more efficient by combining different units/divisions (like the synapses) it will do so. All of this leads to a better use of limited resources and is the same in a company or governmental organization as it is in the nervous system.

Recall our earlier discussion of the principles of development. The cephalocaudal principle states that our development goes from top to bottom, or head to toe. The greatest gains we experience early on in life occur in the nervous system, as well as our sensory systems which we will discuss in a bit. Since our sensory systems are primarily located in our head, and the central nervous system is located there as well, we can see evidence for this principle.

10.2.1.2. Reflexes: Motivated by survival. Neonates are born with a repertoire of behaviors aimed at helping it survive, called **reflexes**. These reflexes are adaptive in nature and indicate how well developed the nervous system is. If a reflex is absent or weak, this may suggest that the brain is not functioning correctly. Many stay with us throughout life while some disappear in infancy or later in childhood. Examples for the latter include the **rooting reflex** or when the baby turns his or her head in the direction of a stimulation near its mouth. Hence, if you touch the baby on the left cheek, it will turn its head to the left. If something is placed on the baby's lips and she begins to suck, the *sucking reflex* was just activated. The *grasping reflex* occurs when an object is placed in a baby's palm and she closes her hand in a grasping motion. Finally, the **startle** or **Moro reflex** occurs when an infant hears a loud sound or sees a movement, it will flex its thighs and knees, throw its arms out and then bring them together as if embracing someone, and briefly cry. Other reflexes include gagging, swallowing, sneezing, coughing, blinking, and yawning, all of which last into adulthood.

Babies also *imitate*, or copy, the facial expressions of their caregivers. This appears to be a primitive reflex and helps them learn about their world. Imitation is an early form of communication before infants can utter words and form sentences. An example is when a father sticks out his tongue and baby does the same.

10.2.1.3. Motivated to detect the world. Human beings use their sensory systems - vision, hearing, taste, touch, and smell to detect stimuli in their world and once this information has been processed and meaning added, they act. This process works the same across time, though the sensory systems of infants are not equally developed. Some take years to fully develop while some are fairly developed at birth. This fact is an example of the principle of independence of systems discussed in Section 10.1.4. So how functional are the five systems at birth?

In terms of touch, the rooting reflex gives us an indication that infants do respond to touch. Consider that by definition a reflex is inborn and does not have to be learned. If our sense of touch was not well-developed this reflex would not be possible. Also consider that infants respond to changes in temperature (observe the effect cold air has on a baby boy's pee pee) and pain. Infants, like many other species, prefer sweet foods which are calorie dense and so help with adding on needed weight, and have clear likes and dislikes. The facial expression of a baby who has eaten something he/she does not like could not be a better example of this, as well as the fact that many times, a baby will spit out disliked foods. In terms of smell, infants can locate the direction an odor is arising from and shows clear dislike for unpleasant smells.

Hearing is a relatively well-developed sensory system as evidenced by the fact that babies can **echolocate** easily or find the direction a sound came from. They also prefer complex to simple sounds. And finally, vision, which is the least developed of all the sensory systems. Infants have limited visual acuity, falling in the range of 20/200 to 20/400 with 20/20 being perfect vision (i.e. the higher the number in the denominator the worst vision is), but despite this, are able to track objects as they move in their visual field by 6 to 10 weeks. Contrary to the bleak picture painted so far for vision, color vision almost is at the adult functioning level.

So as you can see, different sensory systems develop at different rates. Vision is the least developed at birth while hearing is the most developed and requires little additional growth. The others fall between these two.

This leads us to one final discussion point in terms of being motivated to detect the world - **depth perception** which is the ability to perceive the world in three dimensions and to use this information to determine how much distance is between two objects. How well can infants do this? Gibson and Walk (1960) developed an apparatus and procedure to assess depth perception called the *visual cliff*. They divided a table into 3 parts. The center was a solid runway, raised above the rest of the table by approximately one inch. On one side was a solid surface decorated in a checkerboard pattern and covered with a sheet of clear glass. The other side was also covered with a thick sheet of clear glass, but the checkerboard surface was not directly under the glass. It was 40 inches below instead. The infant was placed on the center runway and the mother stood on one side or the other, encouraging infant to crawl to her. The results showed that all 6 to 10 month-old infants refused to crawl across the visual cliff or "deep" side even though they were willing to cross the "shallow" side of the table. They concluded that infants younger than four months could not perceive depth but that sometime between 6 and 12 months the ability develops.

10.2.1.4. Motivated to explore the world. To be able to explore the world, an infant must have strong enough muscles and bones. Our bones harden through a process called *ossification* from the end of prenatal development and through puberty. As well, we are born with all the muscle fibers we need but this muscle is composed mostly of water and fat. Muscle composition changes over the first year of life and the gains in strength allow infants to explore their world by walking, running, jumping, crawling, and climbing.

Motor skills represent another area ripe for growth. In terms of **gross motor skills**, or large body movements, children can sit alone, stand alone, and crawl by 11 months; walk by 12 months; walk backwards by 18 months; and jump in place or walk up and down stairs by 24 months. In terms of **fine motor skills**, or small body movements which give the ability to manipulate objects, a 3-month-old can coordinate the movement of their limbs to some degree, pick up objects from off the ground such as marbles by 11 months, shows the first signs of a hand preference by 12 months, and uses a spoon to feed him or herself by 24 months.

As noted earlier, gross and fine motor skills represent the proximodistal principle with development going from near (gross motor skills) to far (fine motor skills). We can also see evidence of the cephalocaudal principle as infants use their arms to pull themselves up, roll over, and can crawl before they can walk, run, or jump.

10.2.2. Cognitive Changes

10.2.2.1. Motivated to learn about the world. Swiss psychologist, Jean Piaget (1896-1980), proposed a stage theory of how cognitive development proceeds. Before we get into it, it's important to explain a few key concepts he proposed. First, **schemas** are organized ways of making sense of experience. We have a schema for dog which includes the ideas of four legs, tail, and being furry. Piaget said that these schemas change due to direct experience with our environment; a process he called **adaptation**. This change occurs in one of two ways. First, **assimilation** is when new information is made to fit into existing schemas. Notice the word similar within assimilation. We interpret the world in terms of our current schemas and understand anything novel similar to this existing way of understanding experience. Second, we could use the process of **accommodation**. Simply, when novel information is obtained, we could update an existing schema or create a brand new one. Let's say a child meets a cat for the first time. We might expect him/her to call the animal a dog. Why is that? The cat has four legs, a tail, and is furry. But cats and dogs are not the same and have one major difference - cats say 'Meow' and dogs say 'Woof.' So the child will update his/her schema for dog to now include Woof and creates a new schema for cat which includes four legs, tail, furry, and Meow.

Piaget's theory consists of four main stages which we will cover fully in due time. For now, we start with the **sensorimotor stage** which is when infants focus on developing sensory abilities and learning to get around in their environment. You might say they think with their bodies and this stage lasts from birth to age 2. Have you ever noticed how young babies take genuine delight in putting everything in their mouth, but to the horror of their parents? This is evidence of the sensorimotor stage and thinking consists of coordinating sensory information with the movement of the body.

The sensorimotor stage has six substages. Occurring during the first month, the first substage focuses on schemas the infant is born with or as we called them in Section 10.2.1.2, *reflexes*. These schemas are beginning to be changed via accommodation. The second stage is called *primary circular reactions* by

Piaget and lasts to about 4 months of age. The child practices these basic schemas constantly and even shows the first signs of coordinating schemas from different sensory systems. The third stage is called *secondary circular reactions* and involves trial-and-error learning and attempts to make events happening outside his or her own body occur again. It occurs from 4-8 months.

Substage four, occurring from 8-12 months, is called *coordination of secondary schemas* and involves the child trying to get what he/she wants and involves the combination of schemas to do so. This leads to *tertiary circular reactions* lasting from 12-18 months and is when the child begins experimenting or finding new ways of exploring their world and manipulating objects. Finally is the beginning of *mental representation* lasting up to 24 months and involves the use of symbols to represent objects. The child may use a block to represent a cell phone and have a conversation much like his father does. This involves imitation, though the behavior does not have to occur in the presence of the model which was called **deferred imitation**. The child may use the block as a cell phone in the middle of the day when the father is at work, remembering what he saw the night before.

Piaget also said that during the sensorimotor stage infants acquire **object permanence** or knowing that an object continues to exist even though we cannot see it. During the first few months it is basically “out of sight, out of mind” and around 2 months of age or substage 2, infants demonstrate a rudimentary understanding of an object’s permanency. The skill really shows signs of developing by 6 months of age or substage 3 and continues to grow after this, particularly up to about 12 months or substage 4.

10.2.2.3. Motivated to communicate with the world. Our last topic in this section concerns language development and the infant’s desire to communicate with the world. Unfortunately, communicating in a more adultlike manner takes some time to occur and infants first display what is called **prelinguistic communication**, or the type of communication that occurs before language is possible. This includes sounds, facial expressions, gestures, and imitation. Children are also able to understand language before they can produce it. For example, they can follow a parent’s command before they can hold a meaningful conversation or ask ‘why’ the million times they will do so in childhood. The earliest form of language they demonstrate is called **babbling** or speechlike but meaningless sounds. Starting around 2-3 months of age and continuing to around one year of age, it proceeds from simple, or saying ba ba ba ba, to complex, or saying ba da ma fa. This exemplifies hierarchical integration.

Babbling ends as first words are spoken around 10-14 months of age though early vocabulary is quite small and reaching up to about 400 words at 16-24 months. Children use **holophrases** or one word meant to represent a whole phrase such as saying ‘Up’ instead of ‘Pick me up.’ The word is often accompanied by a gesture such as lifting the arms up. First sentences are spoken around 18 months of age as vocabulary expands and children move from holophrases to **telegraphic speech** or when a sentence is created with the fewest number of words necessary to convey the same meaning, such as if the child says, ‘I read book’ and not ‘I read the book’ (Brown & Bellugi, 1964).

Parents are motivated to communicate with their infants in a unique way too. Using simple sentences and repetition the parent may say to the child, "You are so cute. Yes you are. Yes you are pretty baby. This is called **motherese** or can be defined as infant-directed speech.

10.3.1. Social/Personality Changes

The domain of social/personality changes is quite large and I could write 20 pages on this alone. No worries. I will not be doing that but will focus your attention on a few developments.

10.3.1.1. Motivated by attachment. First, note that a discussion of attachment and parenting styles is critical to any coverage of social and personality development during infancy and beyond. That said, I have already discussed it in Module 9 and specifically in Section 9.6.1. for parenting styles and 9.6.2. for attachment. Please review the information on the four parenting styles Baumrind (1966) proposed and the attachment styles put forth by Ainsworth (1978) before proceeding.

10.3.1.2. Motivated to be sociable. As early as 6-9 weeks after birth, children smile reliably at things that please them. These first smiles are indiscriminate, smiling at almost anything that they find amusing. This may include a favorite toy, mobile over their crib, or even another person. Smiles directed at other people are called *social smiles*. Like smiles directed at inanimate objects, they too are indiscriminate at first but as the infant gets older, come to be reserved for specific people. These smiles fade away if the adult is unresponsive. Smiling is also used to communicate positive emotion and children become sensitive to the emotional expressions of others.

This indiscriminateness of their smiling ties in with how they perceive strangers. Before 6 months of age, they are not upset about the presence of people they do not know. As they learn to anticipate and predict events, strangers cause anxiety and fear. This is called **stranger anxiety**. Not all infants respond to strangers in the same way though. Infants with more experience show lower levels of anxiety than infants with little experience. Also, infants are less concerned about strangers who are female and those who are children. The latter probably has something to do with size as adults may seem imposing to children.

Important to stranger anxiety is the fact that children begin to figure people out or learn to detect emotion in others. They come to discern vocal expressions of emotion before visual ones, mostly due to their limited visual abilities early on. As vision improves and they get better at figuring people out, **social referencing** emerges around 8-9 months. When a child is faced with an uncertain circumstance or event, such as the presence of a stranger, he/she will intentionally search for information about how to act from a caregiver. So, if a stranger enters the room, an infant will look to its mother to see what her emotional reaction is. If the mother is happy or neutral, the infant will not become anxious. However, if the mother becomes distressed, the infant will respond in kind. Outside of dealing with strangers, infants will also social reference a parent if they are given an unusual toy to play with. If the

parent is pleased with the toy, the child will play with it longer than if the parent is displeased or disgusted.

Children are also motivated to engage in play. Up to about 1.5 years of age, children play alone called **solitary play**. Between 1 ½ and 2 years of age, children play side-by-side, doing the same thing or similar things, but not interacting with each other. This is called **parallel play**. **Associative play** occurs next and is when two or more children interact with one another by sharing or borrowing toys or materials. They do not do the same thing though. Around 3 years of age, children engage in **cooperative play** which includes games that involve group imagination such as “playing house.” Finally, **onlooker play** is an important way for children to participate in games or activities they are not already engaged in. They simply wait for the right moment to jump in and then do so. Though play develops across time, or becomes more complex in keeping with the principle of hierarchical integration, solitary play and onlooker play do remain options children reserve for themselves. Sometimes we just want to play a game by ourselves and not have a friend split the screen with us, as in the case of video games and if they are on the couch next to you.

10.3.1.3. Personality changes. Across the life span, personality undergoes numerous changes linked to key events at that developmental period. Neo-Freudian, Erik Erikson, proposed eight stages of personality development with **trust vs. mistrust** being the first and occurring up to 18 months. The child develops a sense of trust or mistrust based on how well their needs are met by their parents. If met, they develop a sense of hope but if not, they come to see the world as harsh and unfriendly and may have difficulties forming close bonds with others later in life (Erikson, 1963). Keep this in mind for when we talk about interpersonal attraction and relationships in Module 12.

From 18 to 36 months, Erikson said the focus was on **autonomy vs. shame and doubt**. The child develops independence and autonomy if parents encourage exploration and freedom. If children are restricted and overly protected, they will feel shame, self-doubt, and unhappiness (Erikson, 1964).

10.3. PRESCHOOL YEARS

Section Learning Objectives

- Describe physical changes during the preschool years.
- Clarify what occurs during the preoperational stage of cognitive development.
- Outline changes in language development during the preschool years.
- Describe Erikson’s initiative vs. guilt stage of personality development.
- Describe changes in the use of aggression during the preschool years.

- Describe the development of prosocial behavior over time.

10.3.1. Physical Changes

During the preschool years, we continue growing and developing our gross and fine motor skills. Our bones become sturdier, our muscles strengthen, and our arms and legs lengthen. This allows children to run around, throw, catch, play games, hop, skip, and so on. We also see continued improvement in our sensory systems and burn off some of the baby fat from infancy.

In term of gross motor skills, a three year-old can walk up stairs one foot at a time, can skip, and hop on one foot. Changes in fine motor skills include throwing small balls at age 3 and catching large ones by age 4. Children can also use scissors, eat with a fork and spoon, and tie one's shoelaces.

10.3.2. Cognitive Changes

10.3.2.1. Motivated to learn about the world. Piaget's stage of cognitive development prevalent from about age 2-7 is called the **preoperational stage** and is characterized by acquisition of the symbolic function. There is less dependence on sensorimotor activity to learn about the world and mental reasoning emerges. Piaget said children at this stage show **centration** or the tendency to focus only on one aspect of a situation at the exclusion of others. Related to this, Piaget believed that children could not take another person's point of view because they see the world only from their frame of reference, which he called **egocentrism** (Piaget, 1954). Children also show **animistic thinking** or assigning lifelike qualities to inanimate objects, and have trouble with **reversibility** or reversing the order of operations such as they understand that 3 times 5 equals 15 but do not realize that 15 divided by 5 equals 3.

Preoperational children have also not developed **conservation** or understanding that an object is fundamentally the same despite changing its properties. For instance, if two glasses are filled with exactly the same amount of liquid and children confirm they are the same, and we take one glass and pour it into a flat container which stands much lower than the glass, children will choose the glass if asked which one they want. When asked why they say that the glass has more liquid than the container.

10.3.2.2. Motivated to communicate with the world. Children continue to make great gains in language during the preschool years and by age 3 can use plurals, possessive forms of nouns, past tense, and can ask and answer complex questions. In terms of vocabulary, by the age of 6 or about first grade they have a vocabulary of about 15,000 words (Anglin, Miller, & Wakefield, 1995). This rapid increase in vocabulary occurs courtesy of what is called **fast mapping** or when children ascertain the meaning of a word from how it's used in a sentence (its context), what word it is contrasted with, and previous knowledge of words and word categories. Thus the child can hypothesize the meaning of the

word and then tests the hypothesis by immediately using it and seeing what response he/she gets for doing so. This feedback helps them determine if their hypothesis was accurate or not.

10.3.3. Social/Personality Changes

10.3.3.1. Personality changes. To continue with our discussion of Erikson's stages of personality development, **initiative vs. guilt** is the stage that has relevance during the preschool years. Children's views of themselves change as they face conflicts between their desire to act independent of their parents and do things on their own, and the guilt that comes from failure when they do not succeed. They see themselves as persons in their own right and make decisions on their own (Erikson, 1968b).

10.3.3.2. Motivated to be aggress. Aggression is any behavior with the intent to harm another person or damage an object. It can be physical or verbal in form and in the case of the former declines throughout the preschool years while the latter increases. This is of course linked to the rapid advances in vocabulary discussed in Section 10.3.2.2. The goal of aggression also changes, moving from being *instrumental* or gaining or causing damage to an object, to *hostile* and an attempt to harm someone and/or gain an advantage. Finally, aggression moves from occurring after a conflict with parents to occurring after a conflict with one's peers.

10.3.3.3. Motivated to help others. As a child, most of us learn that we should help an old lady across the street. First responders feverishly work to free trapped miners. Soldiers risk their own safety to pull a wounded comrade off the battlefield. Firefighters and police officers rush inside a burning building to help rescue trapped residents all while cognizant of the building's likelihood to collapse on them. People pull over to help a stranded motorist or one involved in a car accident. These are all examples of what is called prosocial behavior. Simply put, **prosocial behavior** is any act we willingly make that is meant to help others, whether the 'others' are a group of people or just one person. The key is that these acts are voluntary and not forced upon the helper.

Prosocial behaviors can be performed for a number of reasons, many of which are linked to our acquisition of social norms from an early age. First, they may be performed for the reasons of *perceived self-interest*. A man may offer a ride to his boss not because he really wants to help the individual, but because he knows his annual review is fast approaching and is hoping to obtain a favorable critique from his boss. Or maybe the act is performed from purely *altruistic intent*. In this case, the boss is offered a ride because it is the right thing to do. This links to the norm of social responsibility. A final reason ties into altruism but really derives itself from selfish intent. Called **reciprocal altruism**, you offer the ride with the expectation that at some future time if you need help, this person will be there to help you. This is consistent with the norm of reciprocity. Philosophers might ask whether the action was an end in itself (altruism) or a means to an end (perceived self-interest or reciprocal altruism). Whatever the reason behind our decision to act, someone was helped in their time of need.

This behavior first appears between 2-3 years of age. Penner, Dovidio, Pilaiavin, & Schroder (2005) noted that temperament is an influence on the development of prosocial behavior. The authors state that children who are inclined toward positive emotionality tend to be more prosocial. The relationship for negative emotionality is not so clear cut and depends on the specific kind of negative emotions children are feeling and their ability to regulate their emotions.

Brownell, Svetloa, and Nichols (2009) presented 18 and 25 month old children with a sharing task in which they could deliver food to themselves only or to both themselves and someone else. This made it possible for them to share without personal sacrifice as they received a snack no matter what. The recipient was a friendly adult who was either silent or vocal about her needs. Results showed that when the adult was silent, both younger and older toddlers chose randomly. When the adult was vocal about her needs, older children shared while younger ones did not. The authors conclude that children voluntarily share with others by two years of age but this decision depends on explicit cues about another's need or desire.

Utilizing a cohort longitudinal design to study early social relationships in children, Hay, Castle, Davies, Demertriou, and Stimson (1999) evaluated children at either 18, 24, or 30 months of age and then again 6 months later. Five key findings emerged. First, the youngest cohort of girls showed the greatest decline in sharing over time while the oldest cohort of girls showed the greatest increase. In contrast, a decline in sharing was found for the oldest cohort of boys but sharing also declined somewhat from 18-24 months of age. Second, boys seemed to use the display rule of reciprocity more often than girls. Third, girls developed a preference for same sex interaction and were more likely to share with other girls in the second session. Boys were about equally as likely to share with boys and girls. Fourth, there was a positive association between the rate of sharing and mother's ratings of more negative personality traits. This effect was stronger for boys. Finally, two-year olds showed moderate stability in the rate of sharing and there was some consistency across domains of prosocial action. In other words, children who were found to share with peers were also likely to react to a peer's distress with sensitivity. The authors also note that children with older siblings were less likely to share with peers six month later, possibly because a history of struggles with these siblings has caused them to be protective of their own possessions.

A child's understanding of emotions is an important aspect of early social and moral development. To examine this further, Sy, DeMeis, and Scheinfeld (2003) compared 4 and 5 year old children's assessment of the emotional consequences of failures to act prosocially (FAP) with their assessment of the emotional consequences for prosocial and victimization scenarios. Children listened to stories illustrating each of the social-moral situations and then rated the emotional consequences for the actor, recipient, and observing teacher and provided justification for these ratings. They found that a child's emotion ratings for failures to act prosocially are different from their ratings of the other two situations, especially when a teacher is present or absent in the story. Specifically, children's emotion ratings for the FAP actor were not affected by the teacher's presence or absence, but children thought both prosocial and victimization actors would feel happier if the teacher was there. In fact, there was a

general lack of agreement among preschool children regarding a teacher's emotional response to a FAP. Children may believe it is difficult for teachers to detect a failure to act prosocially, especially if the actor fails to perform a spontaneous, compared to a requested, prosocial behavior. Hence, preschool children may not have a clear understanding of the teacher's emotional reaction in this type of situation.

Outside of understanding emotion, it is important to examine the relationship between prosocial and aggressive motives in preschooler's peer interactions. Persson (2005) hypothesized that prosocial altruistic behavior was inversely related to aggression whereas prosocial nonaltruistic behavior would show a nonsignificant or positive relation to aggression. The results confirmed the first hypothesis and showed that for the second, prosocial nonaltruistic behavior was sometimes positively related to aggression. In another study, Hawley (2002) suggested that prosocial behavior may serve as a resource control strategy (through reciprocation, alliance formation, and cooperation) and found that children who were engaging in prosocial behaviors such as suggesting, offering, and helping were also the same ones engaging in taking, thwarting, and insulting. It is suggested that prosocial and coercive strategies are not separate entities in preschoolers.

How do these findings relate in other cultures? Three to four year old Japanese children's rates of reciprocity were examined during free play time and yielded several interesting findings (Fujisawa, Kutsukake, and Hasegawa, 2008). First, it was found that preschool aged children do not simply direct prosocial behavior toward those with whom they play often, but to those for whom they perceive prosocial behavior. Second, when children did reciprocate their partner's prosocial behavior, they sometimes used a different behavior which may be more appropriate for the partner facing a different situation. Third, they reciprocated with their friends in a more balanced fashion than they did with nonfriends and fourth, there was no difference between friends and nonfriends in helping behavior, indicating that children may help peers regardless of friendship status.

Trommsdorff, Friedlemier, and Mayer (2007) tested the relationships between sympathy/distress and prosocial behavior with 212 five-year-old children from two Western (Israel and Germany) and two non-Western (Malaysia and Indonesia) cultures. The former two represented individualistic-oriented and the latter two social-oriented cultures. Children played a "balloon game" in which two colored balloons were changed into balloon dolls. During the interaction, their play partner secretly popped the balloon, expressed sadness about her balloon popping, and placed her hands in her face. The play partner remained in this state for approximately 2 minutes. Raters coded the child's emotional reactions and prosocial behavior to the play partner from the time of the balloon's popping to when the sadness period ended. Three emotional reactions were assessed - sympathy, other-focused distress, and self-focused distress.

Children from the two Western cultures expressed more prosocial behavior compared to their counterparts from the non-Western cultures. It may be that children from Indonesia and Malaysia are raised to respect hierarchical relations and so refrain from initiating prosocial behavior, especially when face saving values are implied. The authors note that ignoring the mishap of another person may be

more valued than helping the person and risking them losing face. Though this may be a plausible explanation, they further note that it is unclear whether face saving strategies have been developed by this age.

As for other-focused distress, it was relatively high among all samples with no apparent cultural differences. Most children felt uneasy and did not shift their attention away from the adult victim. Cross-cultural differences did emerge for self-focused distress with the children from the two social-oriented cultures showing higher rates than children from two individual-oriented cultures. Finally, sympathy proved to be the best predictor of prosocial behavior with self-focused distress having a weak, negative relation and other-focused distress having no significant effect at all.

10.4. MIDDLE CHILDHOOD

Section Learning Objectives

- Describe physical changes during middle childhood.
- Clarify what gains the child makes in terms of their cognitive development.
- Clarify what gains the child makes in terms of their language development.
- Describe changes in memory in middle childhood.
- Describe changes in personality in middle childhood.
- Outline changes in self-concept in middle childhood.
- Describe how aggression is expressed in middle childhood.

10.4.1. Physical Changes

During middle childhood children continue to make gains in their gross motor skills. They become better at riding a bike, ice skating, swimming, and skipping. In terms of fine motor skills they can write, draw, tie their shoes, and fasten buttons.

Though children are typically healthy at this time, they are at risk for certain conditions that can affect their health and wellness. These include developmental and behavioral disorders, maltreatment, asthma, unintentional injuries, and obesity (See www.healthypeople.gov for more information). **Obesity**, defined as having a body mass index or BMI of 30 or higher, is a growing problem for both adults and children. Obesity is contrasted with **overweight** which is defined as a BMI of 25-29.9, and a healthy weight is having a BMI of 18.5-24.9. Obesity can adversely affect every system in the child's

body and hormones controlling blood sugar and puberty. Maybe more important, it can have a heavy emotional and social toll. The likelihood of being overweight or obese in adulthood is greater when the child is overweight or obese and this raises the risk for disease and disability at later stages of life (See <https://www.hsph.harvard.edu/obesity-prevention-source/obesity-trends/global-obesity-trends-in-children/> for more details).

10.4.2. Cognitive Changes

10.4.2.1. Motivated to learn about the world. Piaget's third stage of cognitive development is **concrete operations**. Children now understand conservation, reversibility, and cause and effect but their thinking is still grounded in concrete experiences and concepts. They can now **decenter** or take multiple aspects of a situation into account due to them being less egocentric.

10.4.2.2. Motivated to communicate with the world. A child's vocabulary grows to almost 60,000 words by the end of fifth grade. They also begin to use passive voice and conditional sentences with greater frequency. Children can tell stories, give directions, and stick to a topic when involved in a conversation.

10.4.2.3. Motivated to make efficient use of memory. Children in middle childhood show great gains in their short-term memory but also show an understanding about the processes that underlie memory, allowing them to exert some control. This is called **metamemory** and leads to the development of **control strategies** or tactics used to improve memory. Examples include using *rote rehearsal* or saying something over and over again to commit it to long term memory. Also, *elaborative rehearsal* is when we link new knowledge to existing knowledge. *Chunking* is the process of grouping together related items so that long lists are reduced to something more manageable. Finally, *mnemonics* are memory aides that could include a phrase or short song to help us remember something difficult. For instance, to remember the order of the planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto) I was taught the following: Mary Very Early Made Joe Some Unusually Nice Pie. Each of the first letters in the phrase indicated which planet came next. It works. I still remember the order some 30 years after learning it in elementary school.

We also begin to engage in **metacognition** or thinking about our thinking. We attempt to assess our understanding and performance which makes us better students. How so? We figure out what our strengths and weaknesses are and determine what the limits of our knowledge are.

10.4.3. Social/Personality Changes

10.4.3.1. Personality changes. Erikson's fourth stage of development occurring during middle childhood is **industry vs. inferiority**. At this time, children undergo a major change in their life - they

start school. They are trying to meet the demands placed on them by more than just parents - by teachers, school administrators, and their peers. This is maybe the first major time in the child's life that environmental forces take on a prominent role and exert demands on them. Children try to master what they are presented in school and make a place for themselves in their social world. Success at this stage brings about feelings of mastery and proficiency and fosters a sense of competence while failure leads to feelings of failure and inadequacy and kids may withdraw from both academic pursuits and interactions with peers.

10.4.3.2. Motivated by the self. Self-concept undergoes three major changes during middle childhood. First, in terms of their self-understanding, children come to realize they can be good at some things and bad at others. Children begin to see themselves less in terms of physical attributes such as being a fast runner or good at catching, and more in terms of psychological traits such as dependable, trustworthy, smart, and funny. Their view becomes less simple and more complex, in keeping with the principle of hierarchical integration.

Their self-concept also differentiates. Instead of a general self-concept, it breaks down to four subtypes - academic, social, emotional, and physical. Our academic self-concept may be pretty high but our physical low if we are not athletically inclined. Also, our overall academic self-concept may be positive, and we may feel good about ourselves in history, math, and science, but have a poor self-concept in English. Or maybe we like our physical ability but not our physical appearance which will affect our physical self-concept. It is important to note that general self-concept is still there and our overall view of ourselves is based on the four subtypes.

Finally, we begin to make a **social comparison** (Festinger, 1954). Our first change identified that we now realize we are good at some things and bad at others. But how do we know what we are good or bad at? Simply, we evaluate whether our behavior, abilities, expertise, and opinions are appropriate or meet certain standards by comparing them to those of others. Children look to others who are like them when they cannot objectively evaluate their ability. When self-esteem is at stake, we tend to compare ourselves to others who are obviously less competent or successful, called a **downward social comparison**. As such, we come out on top and preserve the image of ourselves as successful.

10.4.3.3. Motivated to engage in moral behavior. Another major development across childhood, from infancy to adolescence, is the desire to act morally and in keeping with the standards of our society. Hence, a discussion of moral development is relevant here, but was previously discussed in Module 9, Section 9.4.2. Be sure you review the stage theory presented by Lawrence Kohlberg (1964).

10.4.3.4. Motivated to aggress. It was generally believed that boys are more aggressive than girls but more recent research has shown that this is true, but in relation to physical aggression only. Girls, on the other hand, tend to use **relational aggression** or any acts which attempt to hurt another person's self-esteem or relationships with others. As humans are social beings and express a need for affiliation, *ostracism* is an effective tool and even the mere threat of it can cause emotional pain. Gossip is another effective tool used under relational aggression. **Retaliatory aggression**, or getting back at

someone for an indiscretion committed against you, also increases during middle childhood and for both boys and girls.

10.5. ADOLESCENCE

Section Learning Objectives

- Describe physical changes and puberty during adolescence.
- Explain changes in cognitive development during adolescence.
- List and explain changes in social and personality development during adolescence.

10.5.1. Physical Changes

10.5.1.1. Puberty. Adolescence is the period of time when the sexual organs mature. Consider the independence of systems principle of development. As we have seen, the nervous system gains are the greatest early in childhood, and in particular the first two years of life. In terms of the reproductive system, most of the development does not occur until adolescence lasting from about age 12 to 20. So these two systems develop at different rates and *puberty* is the term we use for when a person gains reproductive capability. Possibly the earliest sign of puberty is the growth spurt that begins around age 11 and peaks at age 13 or 14 for boys and begins around age 9 and peaks at 11.5 years for girls. Puberty officially begins when the pituitary gland signals other glands in the endocrine system to begin secreting the sex hormones androgen for males and estrogen for females.

We classify the changes during puberty as either primary or secondary sex characteristics. *Primary sex characteristics* involve structures needed for reproduction to include the vagina, penis, uterus, ovaries, and testes. *Secondary sex characteristics* aid in distinguishing males from females but are not directly needed for reproduction. They include changes in a boy's voice pitch, growth of facial and pubic hair, and the enlargement of breasts. In girls, the first menstruation is called **menarche** and occurs between 11 and 15 years of age while boys experience **spermarche**, or the first ejaculation, which occurs around age 13.

What might be the consequences of early or late maturation for boys and girls? First, the onset of puberty has become earlier over the past three decades and obesity in children may be a major contributor to the timing of puberty (Kaplowitz, 2008). Earlier menarche in girls has been linked to physical issues to include increased risk of adult obesity, breast cancer, and type 2 diabetes (Ahmmed,

Ong, Dugler, 2009) and getting in trouble in school, higher rates of depression (Hamlat et al., 2014), being at higher risk for adolescent dating abuse (Chen, Rothman, & Jaffee, 2017), and involvement with delinquent peer groups. For boys, earlier development has been found to be associated with a more positive body image and greater success with establishing friendships and school performance. Interestingly, one study found that harsh parenting was positively associated with aggressive behavior for early maturing teens than for average or late maturing teens. For early maturing teens only, positive parenting was inversely related to aggressive behavior (Chen & Raine, 2018).

10.5.1.2. Motivated to be thin. Eating disorders are very serious, yet relatively common mental health disorders, particularly in the Western society where there is a heavy emphasis on thinness and physical appearance. In fact, 13% of adolescents will be diagnosed with at least one eating disorder by their 20th birthday (Stice, Marti, & Rohde, 2013). Furthermore, a large number of adolescents will engage in significant disordered eating behaviors just below the clinical threshold (Culbert, Burt, McGue, Iacono & Klump, 2009). Eating disorders take on two main forms during adolescence - anorexia nervosa and bulimia nervosa.

Anorexia nervosa typically presents in mid-teenage years; however, there is a noticeable trend of younger girls- as young as 8 years old- who exhibit extreme dietary restrictive behaviors. While males are not immune from this disorder, the number of females diagnosed each year is overwhelmingly larger than that of males. The onset of disorder typically begins with mild dietary restrictions-eliminating carbs, or specific fatty foods. As weight gain is prevented, the dietary restrictions progress to more severe restrictions-e.g. under 500 calories/day. The rapid drop in weight often comes with psychological disturbances such as irritability, lability of mood, impaired concentration, and anxiety symptoms to name a few.

Bulimia nervosa typically presents later in development- late adolescence or early adulthood. Similar to anorexia nervosa, bulimia nervosa initially presents with mild restrictive dietary behaviors; however, episodes of binge eating interrupt the dietary restriction, causing body weight to rise around normal levels. In response to weight gain, patients then begin to engage in compensatory behaviors or purging episodes to reduce body weight. This cycle of restriction, binge eating, and caloric reduction often occurs for years prior to seeking help.

For more information on eating disorders, please visit the following websites:

- National Institute of Mental Health - <https://www.nimh.nih.gov/health/statistics/eating-disorders.shtml>
- Literature Review on the Epidemiology of Eating Disorders - Incidence, Prevalence, and Mortality Rates - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3409365/>
- National Eating Disorders Alliance - <https://www.nationaleatingdisorders.org/information-eating-disorder>

10.5.2. Cognitive Changes

10.5.2.1. Motivated to learn about the world. Piaget's fourth and final stage of cognitive development is **formal operations** which begins in adolescence and lasts into adulthood. Teens become capable of abstract thinking and understand that ideas can be compared and classified, just as objects can. They search systematically for answers to questions/problems that they experience. Piaget said there are two major developments at this time. First, **propositional thought** is when teens gain the ability to examine the logic of verbal statements without referring to real world situations. This leads to many debates with their parents over the morality of rules and curfews. Second, **hypotetico-deductive reasoning** is the use of the scientific method to test theories with hypotheses. It begins with a general theory of all possible factors that could affect the outcome and from them, deduces specific hypotheses about what may happen. These hypotheses are then tested in an orderly fashion to see which ones hold up in the real world.

10.5.2.2. Motivated by erroneous reasoning. Elkind (1967) stated that there were two fallacies adolescents make when reasoning which were linked to a re-emergence of egocentric thought at this time. The first fallacy is the **imaginary audience** which is the tendency of teenagers to feel that they are constantly being observed by others or that people are always judging them on appearance and behavior. This leads to self-consciousness, concern about personal appearance, and showing off. The second fallacy is the **personal fable** or a teen's unrealistic sense of their own uniqueness. A teenager may feel that others couldn't possibly understand the love that the teenager feels toward their boy or girlfriend because their love is so unique and special. The personal fable also leads to a feeling of invulnerability which can cause impulsive and dangerous behaviors such as unprotected sex, consuming excessive amounts of alcohol, illicit drug use, and reckless driving.

10.5.3. Social/Personality Changes

10.5.3.1. Personality changes. Erikson's fifth stage is **identity vs. role confusion** (Erikson, 1963, 1964, 1968a). During this time teens try and figure out what is unique and distinct about themselves and what their strengths and weaknesses are. They do this by narrowing and making choices about their personal, occupational, sexual, and political commitments. If successful, teens learn what their unique capabilities are and believe in them, and develop an accurate sense of who they are. If they fail, teens may adopt socially unacceptable ways of expressing what they do not want to be and may have difficulty forming and maintaining long-lasting close personal relationships.

James Marcia (1980) saw identity as a combination of crisis and commitment. He said that the **identity crisis** is a period when teens choose between various alternatives presented to them such as where to go to college, which religion they will follow, or which political party they will support. They are committed when they settle on a course of action and invest resources into it. He said four possible outcomes of the identity crisis are possible. First, *identity achievement* is when the person goes through

the crisis and comes to a commitment. Second, *identity foreclosure* is when the teen does not go through a crisis but comes out with a commitment. These are teens who prematurely settle on an identity that others provide for them, such as when the family pushes the teen into the family business or into the military since many family members before them had served proudly. Third is what Marcia called the *moratorium* or going through a crisis but not arriving at a commitment. These teens are actively exploring various role options but have not committed to any of them. Finally, *identity diffusion* occurs when there is no crisis or commitment. These teens avoid considering role options in any conscious way and so undergo no crisis and form no commitment. They may take time off before dealing with the realities of adulthood.

10.5.3.2. Motivated by a need for autonomy. As teens become older, they feel more like separate individuals, and strive to achieve autonomy and an egalitarian relationship. **Autonomy** is defined as independence and a sense of control over one's life. Their relationship with parents becomes more balanced in terms of power and influence, or it becomes **egalitarian**. They come to see their parents in less idealized terms. Think about the quote from the movie, *Silent Hill*: "Mother is god in the eyes of the child." This is true early on but changes during adolescence as teens recognize their parent's faults. They may hold similar attitudes about social and political issues, but they often hold different views on matters of personal taste (i.e. music, clothes, etc.). Despite their request for autonomy and independence, most teens have deep love, affection, and respect for their parents. They also spend about the same amount of time with their parents that they did during childhood.

10.5.3.3. Motivated by a need for affiliation. The social world of adolescent's is relatively complex. A teen's popularity can fall into one of four categories, depending on the opinions of his or her peers. Popularity is related to differences in status, behavior and adjustment. *Popular* teens are liked by most other teens while *controversial* are like by some and disliked by others. *Rejected* teens are uniformly disliked by all while *neglected* are neither liked nor disliked but mostly ignored by their peers.

In addition to the categories, popularity is viewed as a teen having high or low status. *High status* teens have more close friends, disclose more personal details to others, are aware of their popularity, are involved in more extracurricular activities, and participate in activities with their peers more often. By comparison, *low status* teens are the opposite, having fewer friends, seeing themselves as less popular, feel lonely more often, and engage in less social activities and have less contact with the opposite sex. In terms of the four categories, popular and controversial are regarded to be high status while rejected and neglected are low status.

10.6. ADULTHOOD

Section Learning Objectives

- Describe physical changes across adulthood.
- Describe changes in our cognitive abilities across adulthood.
- Outline major developments in personality and social development in adulthood.

Though we are covering adulthood in one section, please be advised that it occurs in three stages: early adulthood from 20-40, middle adulthood from 40-retirement, and late adulthood from retirement to death.

10.6.1. Physical Changes

10.6.1.1. Early adulthood. Early adulthood is the only period of development in which there is growth, stability, and change. Physical maturation is generally completed by early adulthood and young adults tend to be healthy, vigorous, and energetic. Age related changes, called **senescence**, occur later in early adulthood but are not obvious and usually do not impact performance. They occur naturally, representing *primary aging*, or are affected by our environment, health-related behaviors, and disease, called *secondary aging*.

10.6.1.2. Middle adulthood. As we enter middle adulthood, we become more aware of the changes our body is going through though most are not that serious and generally do not affect our day-to-day affairs. For some though, the changes are impactful. Consider individuals whose self-image is tied to their physical attributes such as athletes who rely on their physical abilities and models who rely on their looks for their careers. Changes typically involve a decrease in strength, **presbyopia** or the loss of near vision, decline in visual acuity due to changes in the shape of the lens and loss of elasticity, increase in reaction time due to changes in how fast the nervous system processes nerve impulses, and **presbycusis** or not being able to hear high-pitched, high-frequency sounds. Women also experience **menopause**, or the cessation of monthly menstrual cycles.

10.6.1.3. Late adulthood. The declines that started in late early adulthood continue into late adulthood. One noticeable change occurs in taste and smell as the number of taste buds decrease and the olfactory bulb which processes smells begins to shrivel. This results in a decline in the quality of life for many elderly people as food they once enjoyed no longer tastes good.

10.6.2. Cognitive Changes

10.6.2.1. Postformal thought. Although Piaget stated that formal operations ran from adolescence

and through adulthood, other researchers have proposed that his final stage missed out on other types of thinking that adults do. First, Sinnott (1998) proposed **postformal thought** or realizing that more than one answer can be correct. What works for one person, may not work for another. Second, Basseches (2005, 1989, 1975) proposed what he called **dialectical reasoning** or when an adult considers the validity of conflicting viewpoints by examining the evidence in support of and against each argument. From this analysis, the individual would make a decision but also realize that the answer may not be the best one in the future or for another person.

10.6.2.2. Motivated to remember. Memory is relatively stable from adolescence into early adulthood but one change that does occur is a steady decline in working memory capacity in the 20s. Middle-aged adults are aware of this change and use cues to help remind themselves what they need to do. In late adulthood, short-term memory remains stable but working memory continues to decline. **Prospective memory**, or remembering to do tasks in the future, such as taking medications, also shows a decline. What accounts for such trends? The use of prescription drugs could hinder memory, especially if there are unseen interactions between various medications. Also, when we retire from our jobs we are not faced with as many intellectual challenges such as problem solving, resolving conflicts, or learning new skills, and are not using our memory as much by accessing semantic and procedural memories. Our motivation may also be lower especially if we do not have grandkids who express interest in our stories about the good old days. And finally, brain and body deterioration play their role.

10.6.3. Social/Personality Changes

10.6.3.1. Early adulthood. The highlight of early adulthood is forming a stable romantic relationship and this led Erikson to identify **intimacy vs. isolation** as our personality challenge at this time. He said intimacy was composed of three parts: selflessness or sacrificing our needs for another, sexuality or the experience of joint pleasure, and deep devotion or fusing our identity with that of another. If we are successful at this stage we are able to form relationships with others on physical, emotional, and intellectual levels but if we are not we may feel lonely and isolated and be fearful of relationships with others.

We also have children during this time. Having children helps us to be seen as mature and responsible, is stimulating, provides us with someone to carry on our name after death, gives a sense of accomplishment as we help our children grow, and provides us a way to both give and receive love and affection. The cons of having children include the loss of sleep, loss of freedom, financial strain, loss of privacy, reduced time to spend with our significant other, interfering with employment opportunities for both mother and father, and of course, changing diapers.

Finally, we choose a job during this time. Ginzberg (1972) said that people move through a sequence of three stages as they choose their career. The *fantasy period* lasts until about age 11 and is when we make our choice based on what sounds appealing. We might want to become an astronaut, dragon

slayer, or police officer. The *tentative period* occurs during adolescence and is when we think more practically about the requirements of various jobs and how compatible our own interests and abilities are with them. Finally, the *realistic period* occurs in early adulthood and we now experience career options either through actual experience or training. Our choices are narrowed down at this point too. Our career/job is very important as part of our personal identity is linked to it. Our friends, social activities, and even mating partners can come from the pool of people we work with. If we enjoy go to work because we really enjoy our job and see it as rewarding then we have an intrinsic motivation for working. If we work simply for a paycheck or to fulfill our power need (see Module 8) then we have extrinsic motivation for working. Please note that work will be important in late adulthood as we discuss retirement.

10.6.3.2. Middle adulthood. Erikson's 7th stage of personality development is **generativity vs. stagnation**. As we begin to experience additional and more pronounced physical declines we realize that we will not live forever. As such, we want to leave something behind and parenthood is the most common route to generativity. If we become parents we experience creativity and renewal but if we do not we may sink into complacency and selfishness.

Levinson (1986) proposed his **seasons of life** theory to account for changes at home, work, and other locations in adulthood. First, he said that we experience a **midlife transition** or when we assess the past and create new goals for the future. Second, he proposed a **midlife crisis** which is when an individual may discover he or she no longer obtains satisfaction from their job or personal life and attempts to make drastic changes. So does research support the existence of a midlife crisis? In general, research does not support such a development (Lawrence, 1980) though Hollywood has really enjoyed portraying it in movies, hence my need to address the issue.

A few changes in family life need to be mentioned too. First, many parents have what are called **boomerang children** or children who leave home and come back due to an inability to make ends meet or find a job. Some individuals in middle adulthood also discover that they have to care for their aging parents, all while having children at home still. As such, they have been termed the **sandwich generation**.

Finally, middle adults become grandparents at some point; a clear sign of aging. This is met with excitement especially if they had difficulty dealing with their child(ren) leaving home called the **empty nest syndrome**. As there are parenting styles, there are grandparenting styles. First, the *involved* style is actively engaged in grandparenting and has influence over their grandchildren's lives. The *companionate* style is more relaxed and acts as supporters or buddies to their grandchildren. Finally, the *remote* style is marked by being detached and distant and showing little interest in their grandchildren.

10.6.3.3. Late adulthood. In late adulthood we undergo a life review and prepare for death. Erikson called this **ego integrity vs. despair**. We look back over our life, evaluate it, and come to terms with the decisions we made. We also strive for wisdom, spiritual tranquility, and acceptance of

our life. If the person is successful at this stage, he/she will experience a sense of satisfaction and accomplishment called integrity, feel that they have realized and fulfilled the possibilities that have come their way in life, and have few regrets. If unsuccessful, he/she may feel dissatisfied with life; believe she had missed opportunities and not accomplished what she wanted; and become unhappy, depressed, angry, or despondent over what she has failed to do with her life. In other words, the person will despair.

Peck (1968) suggested that personality development in late adulthood is affected by three developmental tasks or challenges. First, *redefinition of self vs. preoccupation with work-role* says that we have to redefine ourselves in a way not related to our job/career. This challenge accounts for the fact that those who were intrinsically motivated by their job may have problems adapting to retirement. Second, *body transcendence vs. body preoccupation* says that we must cope with the physical changes associated with aging. Finally, *ego transcendence vs. ego preoccupation* states that we have to come to grips with our death by realizing that it is inevitable and that we have made positive contributions to society.

So how do we successfully age? *Activity theory* says that those who stay active in their social world will age better than those who disengage or withdraw. *Selective optimization* says that we should concentrate on particular skill areas to compensate for losses in other areas. So instead of running three miles every day, we may be able to ride a bike, swim, or walk on a track instead. Finally, *continuity theory* says that people need to maintain their desired level of involvement in society to maximize their sense of well-being and self-esteem. Instead of going to Bingo five nights a week now, we might go three nights instead.

Death and dying are a reality no matter what. Kubler-Ross (1969) said we go through five stages beginning with *denial* or refusing to believe that death is approaching. Next comes *anger* or when we express resentment toward those who will live and can fulfill their dreams. *Bargaining* involves trying to buy time from doctors, family members, clergy members, or God. *Depression* is the fourth stage and occurs when the person realizes their time is running out. Finally, is *acceptance* or coming to terms with their fate.

For a comical way of understanding the stages of death and dying, check out the following:

http://www.youtube.com/watch?v=G_Z3lmidmrY

Module Recap

That's it. I provided you with a brief overview of developments that occur during the life span and how

they affect motivated behavior. We will return to some of these issues later in the book and have discussed others earlier. For instance, in Module 12 we will discuss interpersonal attraction which relates to issues concerning intimacy vs. isolation. I provided a relatively thorough overview of prosocial behavior which will come up in Module 15. Module 13 covers cognition and memory, which was discussed in relation to each period of development. Biological issues discussed in this module will come up again in Module 14. We also discussed personality issues (covered in Module 7), psychological needs (discussed in Module 8 and again in 12), health issues during life (Module 11), and the effect of stress (Module 6). As you can see, there is quite a lot of overlap in what we covered in Module 10 and what we will cover, or have covered, in other places in this book. And there are other connections that can be made. I hope you are seeing how what you learned in one class relates to content from other classes. Psychology really is a giant puzzle and each content area represents one piece. To fully understand people you have to take something from each area.

Our discussion in Part IV now turns to health and wellness and then group processes.

Module 11: Motivation and Health and Wellness

Module Overview

Module 11 covers the interesting topic of health and wellness, two terms we all can relate to even if you do not realize, at this time, that they are not the same thing. We will start by making that distinction and then discuss the eight dimensions of wellness. From there, I will show how motivated behavior occurs in relation to seeking medical attention or information, adhering to doctor's orders, pain management, and using complementary and alternative practices.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 320: Health Psychology at Washington State University.

Module Outline

- 11.1. Dimensions of Wellness
- 11.2. Motivated to Seek Medical Attention/Information
- 11.3. Motivated to Follow Doctor's Orders
- 11.4. Motivated by Pain Relief
- 11.5. Pursuing Alternative Forms of Medical Care

Module Learning Outcomes

- Distinguish between health and wellness and list the dimensions of wellness.
- Clarify why or why not people seek medical information/care and in the case of information, what sources are used beyond a medical professional.
- Explain adherence, barriers to it, and ways to improve it.
- Define pain, its types, and ways to manage it.
- List and describe alternatives to traditional medicine.

11.1. DIMENSIONS OF WELLNESS

Section Learning Objectives

- Contrast health and wellness.
- List and describe the dimensions of wellness.
- Exemplify ways wellness relates to behavior change.

You have likely heard the terms health and wellness before. Most people believe these are synonyms for one another but in reality, they are very different. First, **health** can be defined as the absence of disease and is seen as a state someone is in. The Substance Abuse and Mental Health Services Administration (SAMHSA) defines **wellness** as “being in good physical and mental health.” They add, “Remember that wellness is not the absence of illness or stress. You can still strive for wellness even if you are experiencing these challenges in your life.” Wellness is a mindset and includes the choices we consciously make for better or worse. From this perspective, we need wellness for health and let’s say we are depressed or sore. Wellness, through our choices, can help restore our good health again.

Most people see wellness as just focused on the physical or mental. These are part of the picture, but not the whole picture. SAMHSA proposes eight dimensions of wellness as follows (this information is directly from their website):

- Physical - Recognizing the need for physical activity, healthy foods, and sleep.
- Emotional - Coping effectively with life and creating satisfying relationships.
- **Environmental**—Good health by occupying pleasant, stimulating environments that support well-being
- **Financial**—Satisfaction with current and future financial situations
- **Intellectual**—Recognizing creative abilities and finding ways to expand knowledge and skills
- **Occupational**—Personal satisfaction and enrichment from one’s work
- **Social**—Developing a sense of connection, belonging, and a well-developed support system
- **Spiritual**—Expanding a sense of purpose and meaning in life

Source: <https://www.samhsa.gov/wellness-initiative/eight-dimensions-wellness>

How might the dimensions of wellness relate to motivated behavior? Consider what you learned in

Module 6 about behavior modification. The following are some target behaviors a person may wish to change for the better and which dimension(s) of wellness could be affected:

Table 11.1. Target Behavior and Impacted Dimensions of Wellness

Target Behavior	Phy	Emo	Env	Fin	Int	Occ	Soc	Spir
Go to the gym more often.	X	X					X	
Drink more water.	X			X				
Read my holy book more often.		X			X		X	X
Read for pleasure more.		X			X		X	
Use better time management skills.		X		X	X	X		
Study more regularly.		X		X	X	X		
Go for walks.	X	X	X	X			X	X
Clean up behind myself at home.		X	X	X			X	
Eat healthier food.	X			X				
Talk with people of the opposite sex.		X			X		X	
Use more effective coping mechanisms.		X					X	X
Curse less.		X	X		X	X	X	X

Note: Phy – Physical, Emo – Emotional, Env – Environmental, Fin – Financial, Int – Intellectual, Occ – Occupational, Soc – Social, and Spir - Spiritual

You could make a case for other dimensions on some of these, but I am sure the bigger issue is that you might be thinking how in the world could that dimension relate to that target behavior? I do not wish to spend a lot of time on the 12 target behaviors I used as examples explaining why I selected these various dimensions of wellness, so I will just cover four. You can think critically about the other 8 behaviors, and others you might decide are worth changing.

- Go for walks - Physical is obvious. Emotional might be too but this is an opportunity to get away from life and distress. If you go for a walk in a park, you are communing with nature which is environmental and potentially spiritual. If you go with another person, you are working on social and while walking you could engage in a conversation of current issues which is intellectual.

Financial is on the list because unlike going to the gym, walking outside is free.

- Read a holy book - This can help you find meaning and purpose in life which is spiritual or to discover another coping mechanism which is emotional. If you are in a Bible study group this is social and intellectual, and as for the latter, you will discuss what individual passages mean on a personal and general level.
- Cleaning up behind myself at home - If you are staying clean you save yourself needless stress of angry roommates which is emotional. Respecting your roommates and their wishes is social. A clean house is part of environmental wellness. Keeping clean means you guarantee yourself a place to live which ties into financial wellness, as having to find another place to live may cost you more money.
- Study more regularly - Emotional in regards to stress reduction. If you fail a class you have to pay to repeat it which impacts financial wellness. Intellectual in terms of mastering material related to your major. Better grades open up more doors when you start applying for jobs and so occupational wellness.

As you can see, you get quite a lot of bang for your buck when you bring about positive behavioral change. But outside of changing our behavior, motivated behavior occurs in relation to seeking medical attention, adhering to doctor's orders, the perception and regulation of pain, stress management, and a few choice health defeating or promoting behaviors. All will be discussed in due time.

11.2. TO SEEK OR NOT TO SEEK.... MEDICAL ATTENTION/INFORMATION

Section Learning Objectives

- Differentiate illness and disease.
- State factors on whether we seek medical care or information.
- Evaluate the quality of sources of information outside a medical practitioner.

Let's face it. Most of us only go to the doctor when something is wrong. We might be sick with the flu, have injured our finger hanging gutters, or are having trouble breathing. Another distinction is needed - between illness and disease. In the case of **illness**, we are sick and have been diagnosed as so. When there is physical damage within our body we are said to have a **disease**. In the case of the former think about having a cold and for the latter, consider the impact of cancer say on our lungs. For many of us, we have a disease but show no obvious symptoms meaning we do not appear ill. Diabetes involves

problems with the production of or response to insulin. According to the American Diabetes Association, in 2015 about 30.3 million Americans (or 9.4% of the population) had diabetes and of this, about 7.2 million or a quarter, did not know they had it. This speaks to the fact that though we have a disease we may not experience illness. In fact, prediabetes affects 84.1 million Americans and is when “blood glucose levels are higher than normal but not yet high enough to be diagnosed as diabetes.” Prediabetes has no clear symptoms and many do not know they have it.

For more on diabetes, see the American Diabetes Association website:

<http://www.diabetes.org/diabetes-basics/statistics/>

A doctor or other medical professional diagnoses a patient’s condition based on the symptoms they have, thereby determining their health status. But what factors affect our decision to seek medical care/information?

- **Stress** - In a longitudinal study of 43-to-92-year old participants, investigators found that medical care was less sought out if ambiguous symptoms experienced during the previous week were attributed to a life stressor that began within the previous 3 weeks. Participants believed the symptoms were due to stress and not illness. If the stressor began longer than three weeks ago (or was not recent) they sought medical advice and also did so if the symptoms were clearly linked to a disease as it was perceived as a health threat (Cameron, Leventhal, & Leventhal, 1995).
- **Personality** - People higher in neuroticism were found to be more likely to report symptoms and to seek care from a doctor than those low in the trait (Freidman et al. 2013).
- **Gender** - Stevens et al. (2012) found that among adults aged 65 years and older, significantly more women reported falling, sought medical care, and/or talked with their doctor about falls and how to prevent them. Similarly, women were found to be more likely to visit their general practitioner to discuss mental health problems while a range of socio-demographic and psychological factors affected the decision for men (Doherty and Kartalova-O’Doherty, 2011).
- **Stigma** - People suffering from mental illness often do not seek the medical attention they need due to **stigma** (Corrigan, Druss, & Perlick, 2014), or when negative stereotyping, labeling, rejection, and loss of status occur. Stigma takes on three forms. *Public stigma* occurs when members of a society endorse negative stereotypes of people with a mental disorder and discriminate against them. They might avoid them all together resulting in social isolation. In order to avoid being labeled as “crazy” or “nuts” people needing care may avoid seeking it all together or stop care once started, called *label avoidance*. Finally, *self-stigma* occurs when people with mental illnesses internalize the negative stereotypes and prejudice, and in turn, discriminate against themselves. Another form of stigma that is worth noting is that of **courtesy stigma** or when stigma affects people associated with the person with a mental disorder. Karnieli-Miller et. al. (2013) found that families of the afflicted were often blamed, rejected, or devalued when others learned that a family member had a serious mental illness (SMI). Due to this they felt hurt and betrayed and an

important source of social support during the difficult time had disappeared, resulting in greater levels of stress. To cope, they had decided to conceal their relative's illness and some parents struggled to decide whether it was their place to disclose versus the relative's place. Others fought with the issue of confronting the stigma through attempts at education or to just ignore it due to not having enough energy or desiring to maintain personal boundaries. There was also a need to understand responses of others and to attribute it to a lack of knowledge, experience, and/or media coverage. In some cases, the reappraisal allowed family members to feel compassion for others rather than feeling put down or blamed. The authors concluded that each family "develops its own coping strategies which vary according to its personal experiences, values, and extent of other commitments" and that "coping strategies families employ change over-time."

- **Age** - As discussed in Module 10, young adults are in the prime of their life and though some declines do occur, they are modest and do not generally affect functioning. As such, it should not be surprising to learn that this age group generally does not seek medical care when needed. As we age, we try to distinguish symptoms as being due to age or disease. For instance, if my knee is hurting, do I as a 42-year old male attribute this to wear and tear from working out 5 days a week for two decades, or could there be a more serious issue going on? Generally, when our symptoms are gradual and mild we see this as being due to age but if they are sudden and severe we see this as being related to disease and more serious. In the case of the latter we seek advice from a doctor.
- **Religiosity** - In a study of 129 African American women aged 30-84 years, Gullatte et al. (2010) found that women who were less educated, unmarried, and spoke with God only about their self-detected breast change, were significantly more likely to delay seeking medical care. When women disclosed the symptom to another person, they were more likely to consult with their doctor. Delays of three months or more in seeking medical care led to presenting with a later stage of breast cancer.
- **Symptomology** - Might how our symptoms present affect the manner in which we respond to a disease and whether or not we seek medical care? They do and in general, if a symptom is easily seen, perceived as more severe, interferes significantly in the person's life, and is frequent, then we will seek medical treatment (Mechanic, 1978). To illustrate the effect of symptomology on one's life, Ferreira et al. (2012) found that across eleven studies, patients with a high level of disability were about 8 times more likely to seek care than those with lower levels of disability. Women were also slightly more likely to seek care for back pain as were those with a history of back problems.

Finally, if we have made the decision to seek medical information, this does not necessarily mean we will do so from a doctor. In the 21st century many seek their information from the internet and sites such as WebMD. But how reliable is this information? Ogah and Wassersug (2013) reviewed 43 noncommercial websites that provided information on treatment options for individuals suffering from prostate cancer and assessed how comprehensive the site was based on the information provided about alternative hormonal therapies such as GnRH antagonists and estrogen. Very few sites presented information on alternative therapies to the standard treatment for androgen suppression and less than half provided time stamps to indicate when they were last updated. Many sites were also outdated in their information.

What about Wikipedia? A study assessing content on 10 mental health topics from 14 websites to include Wikipedia found that across all topics, Wikipedia was the most highly rated in all domains but readability. It appears that the quality of information on this website is as good as, or even better than, the information found on websites such as Encyclopedia Britannica or a textbook of psychiatry (Reavley et al, 2012).

Outside of the internet, concerned parties use other sources to include family members; support groups; traditional media sources such as television, radio, books, brochures, or medical journals; and telephone hotlines. These sources are also compared against one another for reasons to include verification or double-checking of information, clarification/elaboration or gaining additional information, emotional support, directed contact or when one source directs patients to another source, and proxy/surrogacy or when information is sought on behalf of the patient from family or friends (Nagler et al., 2011).

11.3. MOTIVATED TO FOLLOW DOCTOR'S ORDERS

Section Learning Objectives

- Explain the concept of adherence.
- State barriers to adherence, or those that encourage non-adherence.
- Clarify consequences of non-adherence.
- Describe ways to increase adherence.

Well, I have to say that the title of this section is fitting. How many times do we go to the doctor and they tell us to lose weight or quit smoking? Sometimes I think they spend a year in medical school just learning lines like this to deliver when we have an appointment with them. But it is good advice. Maybe we do need to lose weight, exercise, stop a bad behavior, or whatever else we need to change. How many of us actually do it? What gives us the motivation to follow our doctor's orders or to stick to this advice/guidance? In the realm of health psychology this is called **adherence** and includes not only our willingness or motivation to follow orders, but our ability to do so. Recall in Module 6 sometimes we are highly motivated to make a change but do not have the knowledge or competence to do so. This is where ability factors in. Outside of simply following doctor's orders when we see him/her, we also need to schedule our regular checkups with our primary care physician, dentist, and eye doctor. Most people go to the doctor only when something is wrong, much like we do with our car outside of possibly getting the oil change at the proper time. So adherence is an important topic to discuss within the realm of

health and wellness.

In a 2003 report the World Health Organization found that on average 50% of people living in developed countries adhered to taking their medications as prescribed (Sabate, 2003). There are numerous reasons why people do or do not adhere. WHO classifies these reasons into five main categories (socioeconomic factors, factors associated with the health care team and system in place, disease-related factors, therapy-related factors, and patient-related factors; Sabate, 2003) which Brown and Bussell (2011) roll up into three broader categories:

1. **Patient-Related Factors** - These include patients not understanding their disease, their perception of how severe the disease is (DiMatteo, Haskard, & Williams, 2007), beliefs about the effectiveness of treatment, fear of becoming dependent on the drug, a lack of motivation, not being involved in decisions related to their treatment regimen, cost of the medications, and not understanding the instructions or label (Osterberg & Blaschke, 2005). Patient *self-efficacy*, or our sense of whether we have the skills necessary to achieve the goal, in this case taking our medication, affect adherence such that those with higher self-efficacy stick with it while those who are lower in it do not, as is the case in one study examining patient adherence to new HIV treatments (Catz et al., 2000). In terms of patient personality and the domains of the Five Factor Model, Conscientiousness was found to be related to better adherence (Eustace et al., 2018; Christensen and Smith, 1995).
2. **Physician-Related Factors** - Doctors complicate matters by prescribing complex treatment regimens and not involving the patient in the decision making process. They also do not adequately explain the benefits of the drugs or its side effects (Catz et al., 2000) or consider the financial burden on their patients. So what can be done to improve adherence from a patient perspective? Kripalani et al. (2008) found that lowering medication costs, a follow-up call, transportation to the pharmacy, pharmacist counseling when picking up the prescription, and a pillbox would help. Communication is even more key to encouraging adherence in older adults (Williams, Haskard, & DiMatteo, 2007).
3. **Health System/Team Building-Related Factors** - A lack of health care coordination, access to care, prohibitive drug costs, excessive copayments, and feeling rushed out so that the doctor can move on to the next patient all contribute to non-adherence (Kennedy, Tuleu, & Mackay, 2008).

So is adherence really that important? The U.S. Department of Health and Human Services AID's Info website states that taking HIV medicines gives them the chance to prevent HIV from multiplying and doing irreparable damage to the immune system. Also, poor adherence increases the risk of drug resistance and once it develops, remains in the body. "Drug resistance limits the number of HIV medicines available to include in a current or future HIV regimen." Taking the prescribed medications daily prevents HIV from multiplying, reducing the risk that the disease will mutate and produce drug-resistant HIV. They say, "Research shows that a person's first HIV regimen offers the best chance for

long-term treatment success. So adherence is important from the start—when a person first begins taking HIV medicines.” Some other reasons they offer for non-adherence include depression, fear of the stigma associated with having HIV, an unstable housing situation, alcohol or drug use, and a lack of health insurance.

For more on HIV drug adherence, please visit:
<https://aidsinfo.nih.gov/understanding-hiv-aids/fact-sheets/21/54/hiv-medication-adherence>

Relatedly, a publication by the National Stroke Association states that poor medication adherence can lead to unnecessary disease progression and complications, lower quality of life, reduction in one’s abilities, additional medical costs per year, the need for more specialized and expensive medical resources, lengthy hospital stays, and unneeded changes to one’s medication. They offer suggestions for improving adherence to include:

- Talk to your physician about your unique needs or health status.
- Explore the use of generics to remove the cost barrier.
- Form good habits such as taking your medications at the same time every day.
- Advocate for yourself. Learn about your condition and the medications you are taking.
- Use one pharmacy to fill your prescriptions.
- Use reminders, or as we called them in Module 6, prompts and/or antecedent manipulations, to remember when to take your medications.
- Track your medications as to when and how you take/took them.

To look at this brochure, please visit:

https://www.stroke.org/sites/default/files/resources/NSA_Med_Adherence_brochure.pdf

11.4. MOTIVATED BY PAIN RELIEF

Section Learning Objectives

- Define pain.
- Contrast acute and chronic pain.
- Describe the experience of pain.
- Outline solutions for dealing with pain.

- Determine the prognosis for acute and chronic pain.

According to the Merriam-Webster dictionary, **pain** is “a sharp unpleasant sensation usually felt in some specific part of the body” and is also described as discomfort, soreness, tenderness, inflammation, being hurt, or suffering. (Source: <https://www.merriam-webster.com/thesaurus/pain>). Pain has two main types. First, **acute pain** is brief, begins suddenly, has a clear source, and is adaptive. If we touch a hot iron the pain we experience would be classified as acute and lets us know that we may need to act to deal with the damage currently done, but also to avoid further damage or injury. Acute pain signals danger.

In contrast, **chronic pain** lasts for a long period of time and up to months or years, is fleeting (it comes and goes), disrupts normal patterns such as sleep and appetite, and is the result of a disease or injury. Unlike acute pain, chronic pain is not adaptive. Examples include arthritis, a broken arm, back problems, migraines, or cancer. It can feel like throbbing, stiffness, burning, shooting, or a dull ache.

How we experience pain is as unique as our personality. It is a subjective experience and two people could experience the same wound and have two totally different interpretations. Consider the simple paper cut. For some the pain could be excruciating while for others it goes unnoticed. Okay. This may be a bit of a stretch but you get the point. Are there gender differences in pain perception? Most of us would say that there are but what is the source of this difference? Could it be that the body deals with pain differently for men and women and so these differences represent true biological variation? Research does not support this idea as few gender differences have been found in the detection threshold for most types of pain (Racine et al., 2012). Now consider that boys are often taught to ignore pain while girls are taught that it is okay to acknowledge pain. This shows that gender differences in pain perception are socially constructed through gender roles (Pool et al., 2007).

Pain is not a pleasant experience, whether acute or chronic, so what do we do to deal with it? The obvious answer is to obtain medication. Painkillers or **analgesics** can deal with most types of pain and include drugs such as Tylenol, Advil, Motrin, and Aleve. They act by interfering with pain messages or by reducing inflammation and swelling which make the pain worse. Morphine and codeine are powerful pain relievers which fall under the classification of narcotics but are risky to take due to their addictive properties and side effects.

Of course, if drugs are not the answer surgery may be necessary. Surgical implants can be used to control the pain and take the form of *infusion pain pumps* or *spinal cord stimulation implants*. In the case of the former, a pump is installed in a small pocket under the skin with a catheter that carries pain medicine from the pump to the intrathecal space around the spinal cord, or where pain signals travel to. In the case of the latter, low-level electrical signals are sent to the spinal cord or specific nerves from a device surgically implanted in the body to inhibit the transmission of pain signals. The patient turns the current on or off and adjusts its intensity via a remote control. *Transcutaneous electrical nerve*

stimulation therapy, also called TENS, can be used to deliver a low-voltage electrical current via electrodes on the skin and near the site of the pain and scrambles normal pain signals. Finally, *bioelectric therapy* provides pain relief by causing the body to produce endorphins that block the delivery of pain messages to the brain.

Outside of drugs and surgery, pain can be reduced through massage therapy, acupuncture, psychotherapy, and relaxation training such as *progressive muscle relaxation* or the tensing and relaxing of muscle groups throughout the body. Behavior modification procedures mentioned in Module 6 can be useful also.

The prognosis for acute pain is good and drugs can provide effective pain relief. Since the cause is generally identifiable, removing this source alleviates the pain. Chronic pain is a bit trickier as the source is not clear and so effective coping mechanisms may need to be implemented to include nondrug or surgery options, managing stress, exercise to boost natural endorphins, joining a support group, and changing one's lifestyle. It is even a good idea to track pain levels and your activities daily to see which activities might reduce or aggravate your pain and then share this information with your doctor.

For more on pain and its management, please see WebMD:

<https://www.webmd.com/pain-management/guide/pain-management-treatment-overview#3-6>

11.5. PURSUING ALTERNATIVE FORMS OF MEDICAL CARE

Section Learning Objectives

- Describe types of CAMs individuals can use.

According to the National Center for Complementary and Integrative Health (NCCIH) which is part of the National Institutes of Health, about 30% of adults and 12% of children pursue health care options outside of traditional Western medicine. These approaches can be *complementary* meaning they are used in conjunction with conventional medicine, or *alternative* meaning they are used in place of Western medicine (take note of the term CAM standing for complementary and alternative medicines). Most though, pursue complementary methods which can include:

- Use of Natural Products - This includes herbs, probiotics, and vitamins.
- Mind and Body Practices - This includes massage therapy, visiting a chiropractor, yoga, acupuncture, relaxation techniques, and meditation.
- Other Approaches - This includes traditional healers, Ayurvedic medicine, traditional Chinese medicine, homeopathy, and naturopathy

Source: <https://nccih.nih.gov/health/integrative-health>

NCCIH's website includes a wealth of information on the topic of alternative medicine to include:

- Are You Considering a Complementary Health Approach? - <https://nccih.nih.gov/health/decisions/consideringcam.htm>
- Children and the Use of Complementary Health Approaches - <https://nccih.nih.gov/health/children>
- 5 Tips: What Consumers Need to Know About Dietary Supplements - <https://nccih.nih.gov/health/tips/supplements>
- Safe Use of Complementary Health Products and Practices - <https://nccih.nih.gov/health/safety>
- 6 Things to Know When Selecting a Complementary Health Practitioner - <https://nccih.nih.gov/health/tips/selecting>
- Herbs at a Glance - <https://nccih.nih.gov/health/herbsataglance.htm>
- Research on CAMs - <https://nccih.nih.gov/research/results>
- Ayurvedic medicine - <https://nccih.nih.gov/health/ayurveda/introduction.htm>
- Traditional Chinese medicine - <https://nccih.nih.gov/health/whatiscam/chinesemed.htm>
- Homeopathy - <https://nccih.nih.gov/health/homeopathy>
- Naturopathy - <https://nccih.nih.gov/health/naturopathy>

The American Cancer Society publishes a guide for cancer treatments falling under CAMs - <https://www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine.html>

Module Recap

That's it for Module 11. Remember, a comprehensive discussion of health psychology was not possible

given page and time constraints, but the point was to provide you with an overview of how we might be motivated to engage in health promoting behaviors. In Module 15 we will discuss specific health behaviors and how we are motivated for better or worse. Also, in Module 4 we saw how stress can wreak havoc on our health, so we have, and will, tackle this issue throughout the book.

For now, we discussed the dimensions of wellness, our motivation to see the doctor or seek health information, whether we adhere to doctor's orders, how we manage pain, and finally, a brief outline of CAMs was presented with numerous resources to examine if you desire to learn more.

We have just one module left in Unit IV which deals with social psychology.

Module 12: Motivated by Social Processes

Module Overview

In Module 12 we will begin a discussion of how social factors affect our motivated behavior. I say begin because topics falling under social psychology will come up in Module 15 too and have already appeared at other places throughout this book. So my goal will be to present you with novel information as it relates to explaining why a certain behavior was displayed, attitudes and conscious efforts to change them, factors affecting who we are attracted to, and finally an incredibly novel body of information which I will spend considerable time on pertaining to social dilemmas. This links to a discussion we began in Module 10 on prosocial behavior. I hope you enjoy the discussion to come.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 350: Social Psychology at Washington State University.

Module Outline

- 12.1. Motivated to Explain Behavior
- 12.2. Motivated by Our Attitudes
- 12.3. Motivated by Attraction
- 12.4. Motivated by Limited Resources

Module Learning Outcomes

- Clarify how attribution theory explains the reason why a behavior was made.
- Define attitudes and clarify how they can be changed.
- Describe factors affecting whom we are attracted to and how we select a mate.
- Clarify what social dilemmas and how they are resolved.

12.1. MOTIVATED TO EXPLAIN BEHAVIOR

Section Learning Objectives

- Define attribution theory.
- Describe the two types of attributions we might make.
- Explain the correspondent inference theory.
- Explain the covariation theory.
- Outline types of cognitive errors we make in relation to explaining behavior.

12.1.1. Defining Terms

Have you ever wondered why the person driving down the road is swerving in and out of traffic, why your roommate does not clean up behind him or herself, why your kids choose to play video games over studying for the SAT, or why your boss seems to hate you? If so, you are trying to explain the behavior of others and is a common interest many students have in pursuing psychology as a major and career. Simply, it comes down to the question of *why*. According to **attribution** theory, people are motivated to explain their own and other people's behavior by attributing causes of that behavior to either something in themselves or a trait they have, called a **dispositional attribution**, or to something outside the person called a **situational attribution**.

12.1.2. Correspondent Inference Theory

The **correspondent inference theory** (Jones & Davis, 1965) provides one way to determine if a person's behavior is due to dispositional or situational factors and involves examining the context in which the behavior occurs. First, we seek to understand if the person made the behavior of their own volition or if it was brought on by the situation. If the behavior was freely chosen, then we use it as evidence of the person's underlying traits. For example, President Trump has proven to be a controversial figure in the United States and the reader of an article showcasing his successes in the first two years should be careful not to assume that the reporter supports him. Likewise, if the article was critical of his performance this does not mean that the reporter is against him. Either reporter may have been tasked with writing the article by his/her editor, meaning that the information presented was situationally driven and not necessarily reflective of the reporter's personal beliefs (i.e. not dispositional).

Second, we need to consider the outcome produced by the person's behavior. If several outcomes have been produced it will be hard to discern the motive of the individual. If only one outcome resulted from the behavior then we can determine a motive with greater confidence.

Third, we need to examine whether the behavior was socially desirable or undesirable. If the former, we cannot confidently determine the motive for the behavior meaning that the positive behavior may not really result from their unique traits. If the behavior is undesirable, then we can assert that a dispositional attribution is the cause. Consider a first date. If the person seems extra nice,

accommodating of your desires, funny, and/or smiles a lot, we cannot really say it is because this is the type of person they are. It may simply be they are trying to present themselves in the best light to make a good first impression. If, on the other hand, the person seems very shy or egotistical, we will attribute this behavior to be representative of the type of person they are.

Fourth, what if you go into your local cell phone dealer because of a problem with your phone. If the technician is extremely nice, can we say this reflects the type of person they are, or is it due to the position they are in? Jones and Davis (1965) therefore says we need to consider if a social role is at work and in the case of our technician, their niceness may be due to their customer service-oriented job (situational) and not being high in the personality trait of agreeableness (dispositional).

12.1.3. Covariation Theory

Kelly (1967) proposed his **covariation theory** which says we rely on three kinds of information about behavior: distinctiveness, consensus, and consistency. For this discussion let's use the example of a professor who requests that you stay after class. First, *distinctiveness* asks whether the behavior is distinct or unique or does this professor usually ask students to stay after class. If yes (low distinctiveness), you will think she has personal reasons for talking with you. If no (high distinctiveness), you will see it as unusual and figure it has something to do with you and not her (i.e. she asked you to stay for situational reasons).

Second, *consensus* asks whether there is consensus or whether other instructors ask you to stay and talk to them after class. If yes (high consensus), the request is probably due to some external factor such as the professors being on your honors thesis committee and are inquiring about your progress (situational). If no (low consensus), the request is probably due to an internal motive or concern in your instructor (dispositional).

Finally, *consistency* asks whether the behavior occurs at a regular rate or frequency. In the case of our example, you will ask yourself whether she regularly asks you to stay. If yes (high consistency), you will think it is like the times before and think nothing of it (dispositional). If no (low consistency), you will think she requested the conference due to something you said or did in class (situational).

Kelly (1987) also proposed the **discounting principle** which states that when more than one cause is possible for a person's behavior we will be less likely to assign any cause. For example, if a coworker is extra nice to the boss and offers him a ride home, we might make a dispositional attribution, unless we also know that this coworker is up for a raise or promotion. In the case of the latter, no attribution may be made because the person could be acting nice as usual or simply looking to influence the boss and get the desired advancement.

12.1.4. Cognitive Errors When Explaining Behavior

Even though the process of making an attribution appears to be a fairly logical one, we do make mistakes from time to time. These mistakes can take different forms. First, we might make the **fundamental attribution error** (Jones & Harris, 1967) which is an error in assigning a cause to another's behavior in which we automatically assume a dispositional reason for his or her actions and ignore situational factors. In other words, we assume the person who cut us off is an idiot (dispositional) and do not consider that maybe someone in the car is severely injured and this person is rushing them to the hospital (situational).

Second, when we attribute our success to our own efforts (dispositional) and our failures to outside causes (situational), we are making the **self-serving bias**. Third, the **just world hypothesis** is the belief that good things happen to good people and bad things happen to bad people. Fourth, if we believe that everyone holds the same opinion we do or acts just as we do, we have made the **false consensus effect**. Related to this is the **false uniqueness effect** or the belief that our skills and abilities are unique to use. This might be thinking that no one else can make a grilled cheese sandwich as good as us or are as good of a writer as we are.

And finally, the **actor-observer bias** occurs when the actor overestimates the influence of the situation on their own behavior while the observer overestimates the importance of the actor's personality traits on the actor's behavior (dispositional; Jones & Nisbett, 1972). An example might be a professor (observer) deeming that a student did not do well because they were lazy and did not study (i.e. dispositional) while the student (the actor) feels that their lack of success on an exam was due to the professor making an incredibly hard exam (i.e. situational).

12.2. MOTIVATED BY OUR ATTITUDES

Section Learning Objectives

- Define attitude and attitude object.
- State the three components of an attitude.
- Exemplify how the components of an attitude interact.
- Identify sources of our attitudes.
- Describe factors affecting persuasion.
- Describe cognitive dissonance in relation to attempts at persuasion.

12.2.1. What are Attitudes?

An **attitude** is a belief, feeling or tendency that we hold in regard to a person, a group of people, an idea, or an activity. What the attitude concerns is called an **attitude object**. Our attitudes are relatively stable and influence our behavior both in the present and future.

12.2.2. The Components of an Attitude

Our attitudes consist of three components - beliefs, feelings, and behaviors. In terms of *beliefs*, this includes any facts, opinions, or general knowledge we have about the object. *Feelings* involve whether we love, hate, like, or dislike the object. And finally, *behaviors* are any actions we take toward the object.

How do the three interact? Let's say our attitude object is a political candidate. Our beliefs about the candidate lead us to think highly of her position on crucial issues such as gun control, abortion, immigration, and health care. Due to this, we like and trust the candidate (feelings) and will act on her behalf by donating money, offering to volunteer at campaign headquarters, speak on her behalf at rallies, and of course vote for her (behaviors).

12.2.3. The Source of our Attitudes

So where do our attitudes come from? One common source is from our parents. Throughout childhood, they impart their values, practices, and beliefs on us and may even encourage adoption by reinforcing when we act in a way consistent with their attitudes such as smiling at us or offering praise and encouragement. If we displease them, parents may express disapproval which is a form of punishment. Another source is mass media to include the evening news, websites, newspapers, the radio, and magazines. We also gain our attitudes through personal experience with the attitude object (i.e. realizing that we like a specific brand of toilet paper because we have used it in the past) or interacting with others such that they have a chance to share their attitude with us and convince us it is correct (we will discuss persuasion in the next section). Finally, when we join a group we are expected to share their attitudes. For instance, a gun control advocate would not necessarily want to join the NRA as they would be expected to support gun rights, not infringe upon them.

12.2.4. Motivated to Change Attitudes

If we engage in a premeditated and intentional effort to change someone's attitude, we are attempting to **persuade** them. So what makes persuasion more likely to occur? Several factors must be considered and conditions met for persuasion to occur. First, we must consider the source of the attitude. If the

person is credible and likeable, we are more likely to be persuaded.

Next, we need to examine the message itself. Messages that tend to contradict our point of view are often ignored and the easier that we can generate counterarguments the less likely we will be persuaded. Appealing to emotions works well, particularly in relation to creating fear or anxiety in the audience. The most effective arguments present both sides of an issue and even suggests new arguments. Two sided arguments make the speaker seem less biased and enhances credibility. If the message suggests a clear course of action that produces results and makes clear and logical conclusions, it is more likely to be adopted.

Third, we should consider the medium of the communication. If the argument is complex, then written communication is best as it will allow time for careful consideration and revisiting the issue. If the audience already understands the argument, then videotapes or live presentations work well.

Finally, the audience must be considered. An audience will be more resistant to change if they already have a strong commitment to their beliefs, share the attitudes with others, and learned the attitude in childhood and from people they trust such as other family members.

12.2.5. Cognitive Dissonance

Have you ever held two contradictory cognitions, or thoughts, at the same time? How did that make you feel? I bet it caused some anxiety and you wanted to do something about it. This is the premise of **cognitive dissonance theory**. So what do you do? Let's use an example:

1. Cognition 1 - I am an honest, trustworthy person.
2. Cognition 2 - I plagiarized a paper for my social psychology class.

How you might resolve the dissonance experienced by believing you are honest but also knowing that you engaged in blatant plagiarism could be done in one of several ways.

1. You could change your attitude. In this case you might say that you are not really an honest person. So then your action (Cognition 2) is not contradictory to your personality traits (Cognition 1 and the one that was changed).
2. Add a consonant thought. Since you have one positive cognition and one negative cognition, add a third cognition that is positive. You might say that when you submitted your taxes last year you noticed later that you made a mistake and informed the IRS and promptly paid what was owed. This is an honest act and bolsters your claim to be a honest and trustworthy person.
3. Change your behavior. You might decide that you will never cheat again on any test or paper. It was a one-time moment of weakness. This reduces the value of the negative cognition and keeps you on the positive side of things.

4. Reduce the importance of the dissonant cognitions - You could play down the fact that you plagiarized a paper by noting that it was just a one-page application paper and is worth very few points in the class. So in reality, you did not gain much by being dishonest.
5. Focus on Limited Choices - You might say that you would not have had to plagiarize the paper if your instructors did not assign so much work that week and you did not have to pull an extra shift at work due to a sick coworker. Hence, your time was limited, and this was the best option you had, other than not finishing the paper.

Of course, another option would be to go to the professor and confess the indiscretion. Since the professor did not discover the act of plagiarism, you could throw yourself on the mercy of the court, so to speak, and this basically removes the second cognition and confirms the validity of the first.

12.3 MOTIVATED BY ATTRACTION

Section Learning Objectives

- Define interpersonal attraction.
- Outline five factors affecting who we are attracted to.
- Clarify strategies used by men and women in selecting a mate.

12.3.1. Defining Terms

Have you ever wondered why people are motivated to spend time with some people over others or why they chose the friends and significant others they do? If you have, you have given thought to **interpersonal attraction** or showing a preference for another person (remember, inter means between and so interpersonal is between people). This ties back to our discussion of the need to affiliate/belong from Module 8. Recall that this need is our motive to establish, maintain, or restore social relationships with others, whether individually or through groups (McClelland & Koestner, 1992). We also distinguished between affiliating and belonging such that we *affiliate* with people who accept us though are generally indifferent while we tend to *belong* to individuals who truly care about us and for whom we have an attachment.

12.3.2. Factors Affecting Interpersonal Attraction

Five key factors are thought to affect who we are attracted to and include proximity, attractiveness, similarity, exchange, and intimacy. First, *proximity* states that the closer two people live to each other, the more likely they are to interact. The more frequent their interaction, the more likely they will like one another then.

Second, we choose who we spend time with based on how *attractive* they are. Attractive people are seen as more interesting, happier, smarter, sensitive, and moral and as such are liked more than less attractive people. This is partly due to the **halo effect** or when we hold a favorable attitude to traits that are unrelated. We see beauty as a valuable asset and one that can be exchanged for other things during our social interactions.

Third, we tend to choose people who are *similar* to us in attitudes and interests as this leads to a more positive evaluation of them. Their agreement with our choices and beliefs helps to reduce any uncertainty we face regarding social situations and improves our understanding of the situation.

Fourth, we choose people who are likely to engage in a mutual *exchange* with us. We prefer people who make us feel rewarded and appreciated and in the spirit of reciprocation, we need to give something back to them. This exchange continues so long as both parties regard their interactions to be mutually beneficial or the rewards of the exchange outweigh the costs (Homans, 1961; Thibaut & Kelley, 1959).

Finally, *intimacy* occurs when we feel close to and trust in, another person. This factor is based on the idea of **self-disclosure** or telling another person about our deepest held secrets, experiences, and beliefs that we do not usually share with others. But this revealing of information comes with the expectation of a mutual self-disclosure from our friend or significant other. Recall from Module 10 that Erikson addressed the need for intimacy in his intimacy vs. isolation stage of personality development occurring during early adulthood. He said intimacy was composed of three parts: selflessness or sacrificing our needs for another, sexuality or the experience of joint pleasure, and deep devotion or fusing our identity with that of another. For more on this stage, see Section 10.6.3.1. This said, there is a possibility we can overshare, called *overdisclosure*, which may lead to a reduction in our attractiveness. What if you showed up for class a few minutes early and sat next to one of your classmates who proceeded to give you every detail of their weekend of illicit drug use and sexual activity. This would likely make you feel uncomfortable and seek to move to another seat.

12.3.3. Motivated to Select a Mate

As you will see in a bit, men and women have vastly different strategies when it comes to selecting a mate. This leads us to ask why and the answer is rooted in **evolutionary psychology**, or the area of psychology focused on discovering the evolutionary origins of human behaviors. Mate selection occurs universally in all human cultures. In a trend seen around the world, Buss (2004, 2003) said that since men can father a nearly unlimited number of children they favor signs of fertility in women to include

being young, attractive, and healthy. Since they also want to know that the child is their own, they favor women who will be sexually faithful to them.

In contrast, women favor a more selective strategy given the incredible time investment having a child involves and the fact that she can only have a limited number of children during her life. She looks for a man who is financially stable and can provide for her children, typically being an older man.

In support of the difference in age of a sexual partner pursued by men and women, Buss (1989) found that men wanted to marry women 2.7 years younger while women preferred men 3.4 years older. Also, this finding emerged cross-culturally.

12.4. MOTIVATED BY LIMITED RESOURCES

Section Learning Objectives

- Describe social dilemmas.
- Outline explanations for why resources are overconsumed.
- Define social identity theory.
- Clarify how social identity theory explains social dilemmas.
- Define social values.
- Clarify how social values are measured.
- Predict behavior in social dilemmas based on one's social value orientation.
- Clarify how uncertainty explains overconsumption of resources.
- Outline solutions to overconsumption.

12.4.1. Social Dilemmas: An Overview

Hardin (1968) wrote the seminal article on social dilemmas and noted that overpopulation due to unrestricted breeding is a dangerous eventuality because we live in a finite world with finite resources. Consider the herdsman who increases his herd by one. Alone this may not be much cause for alarm, but if all other herdsman in the area do the same, the result will be overgrazing. So the reality of the situation is what Hardin calls the **tragedy of the commons**, or as Edney (1980) describes, the conflict between individual and group interests in resources over time, both of which are justifiable. This conflict revolves around the issue of morality. Is it moral to add the extra cattle and so take more from a limited resource than others? One possible way to examine the issue is proposed by Fletcher (as cited in

Hardin, 1968), "...the morality of an act is a function of the state of the system at the time it is performed" (p. 1245). If there are plenty of lands for cattle to graze from, then it may not be an issue. If not, then it is. Applied to the issue of pollution, "The *rational* man finds that his share of the cost of the wastes he discharges into the commons is less than the cost of purifying his wastes before releasing them" (p. 1245). If the eventual cesspool is in frontier conditions, it is not a concern. If it is in a city, it is. Hence, the state of the system/contextual factors need to be considered in ascertaining the salience of a commons dilemma.

Also important is the fact that natural selection favors the forces of psychological *denial* such that the individual who denies the truth, even though the society as a whole that he is part of will suffer, benefits. So the man who pollutes denies its impact on the environment and his fellow man and focuses on his bottom line. Therefore, denial is a manifestation of *rationality* to Hardin.

Finally, the Universal Declaration of Human Rights says families can determine their size so long as they have their own resources to support it. Though good in principle, this is not the case as people look to common resources for sustenance and so unrestricted breeding becomes a serious issue. Hardin (1968) writes, "People vary. Confronted with appeals to limit breeding, some people will undoubtedly respond to the plea more than others" (p. 1246). It is possible that those who do not limit their breeding make such a choice because they believe a technical solution will come along and save us in our darkest hour. Hardin is quick to point out that none will. He finishes by saying: "The only way we can preserve and nurture other more precious freedoms is by relinquishing the freedom to breed, and that very soon" (p. 1248). Obviously, this goes against the Universal Declaration of Human Rights, but this was predicated on the idea that each family was dependent on its own resources. As everyone draws from the common resource pool, the more the population increases the more hands there will be reaching into the cookie jar, taking from the same number of cookies. Hence, "freedom in a commons" (p. 1244) and "freedom to breed" (p. 1248) bring ruin to all.

As noted by Edney (1980), social interaction involves a conflict between individual and group interests. Individuals wish to maximize personal or selfish interests while the group seeks to maximize collective interests. If all are motivated by selfish interests, all are worse off than if they had cooperated to maximize their collective interests. These social dilemmas are faced regularly by the majority of people (Komorita and Parks, 1996) and can take several forms.

12.4.1.1. Classes of social dilemmas. One major class of social dilemmas is called a *social trap*. This occurs when the behavior of an organism can either cause a small, positive outcome that is immediate, or a large, negative outcome that is delayed. Social traps can take different forms. The most basic social trap is known as an individual, one-person, or temporal trap and occurs in the absence of a group. Platt (1973) stated that a temporal trap was the conflict between short run and long-term consequences. An example of the temporal trap is eating. An individual may obtain an immediate and pleasurable sensation from consuming high fat or high sugar foods. In the long term though, this can lead to a negative outcome in the form of cardiovascular disease, hypertension, or diabetes. Since this trap involves one person only it technically does not meet the requirements of a social dilemma.

A second type of social trap was the focus of Hardin's article. Called a **resource dilemma**, this is a situation in which an individual must decide how much of a shared resource to take for him or herself. After each person has extracted their share, the pool is replenished at some rate related to the size of the remaining pool, but the new size of the pool does not usually exceed its initial size. The individual can practice self-restraint and choose to accept a smaller, immediate benefit in order to sustain the resource and accumulate more in the long run. Since individuals begin with nothing, anything constitutes a definite gain.

Overconsumption and potential exhaustion of the resource pool is a serious issue faced in social traps such as resource dilemmas, even if overpopulation is not the reason behind the overuse. It may be that too many individuals are using the same resource in a given area or that there are a reasonable number of people using the resource, but they are using it too fast. There could also be a combination of these two factors (Edney, 1980). The amount of time between the onset of overconsumption and the exhaustion of the pool depends on several variables (Edney, 1980). First, is the type of resource. Second, is its accessibility. Resources that are more easily accessible will be used up quicker than those that are difficult to access. Finally, the rate of replenishment is important. Even if there is high consumption, if the replenishment rate is relatively fast, this will delay the inevitable for a longer period of time. To maintain the pool at its current level and avoid exhaustion, individuals would need to adhere to the *optimal harvest level*. This is the harvest level that if everyone made, the pool would always be replenished to its original size and never run out.

Another major class of social dilemmas is called the *social fence*. Like social traps, there is a short-term and a delayed outcome, but unlike social traps, the short-term gain is negative and the delayed outcome is positive. A special case of the social trap is the **public goods dilemma**. In this paradigm, individuals must decide whether to contribute in order to establish or sustain a public good such as public television or a charity. There is a measure of risk seeking for the individual as he/she will endure an immediate loss in order to gain an uncertain benefit. The public good is characterized by having *jointness of supply* meaning it cannot be 'used up' no matter how many people are consuming it (i.e. public television will not run out of programming) and *impossibility of exclusion* indicating that it is nearly impossible to restrict noncontributors from consuming it (i.e. not allowing individuals to watch public television programming for failing to contribute; Komorita and Parks, 1996). Individuals choosing to consume the resource without actually contributing to it are said to be *free riding*. Maybe they believe that if they do not contribute to the good (i.e. donate to charity) other, conscientious individuals will, or they question why they should contribute to a service they would likely never use. If everyone followed this logic, the service could not be sustained leaving all worse off; i.e. losing the benefit of the service.

In either the resource dilemma or public goods dilemma, the outcome is such that the individual has less for him or herself if the choice is made to act in the collective interest. In the resource dilemma, the individual has less if she takes less from the common pool and in the public goods dilemma, the individual has less if she gives more to sustain the common resource.

The decisions to be made in these two types of social dilemmas may be the same in terms of objective appraisal of gains and losses, but they are not seen as such psychologically or subjectively. In other words, losses loom larger than gains. The problem for social dilemmas is that it is unclear what choice behavior should be seen as a gain and which as a loss. For instance, the act of giving (contributing) in public goods dilemmas is a loss for the participant, though gain for the group, and the act of taking (harvesting) in resource dilemmas is a gain for the individual but a loss for the group.

A third major class of social dilemmas is the Prisoner's Dilemma Game (PDG). Briefly, the PDG involves two prisoners who are accused of being partners in a crime. While in separate cells, the district attorney makes each prisoner the same offer. If the prisoner decides to "turn state's evidence" and testify against his partner, he will go free while his partner will receive a long sentence. If both turn state's evidence though, both will receive an intermediate sentence and if neither prisoner turns state's evidence, both will receive a short sentence. Essentially, the act of turning state's evidence involves a decision to *defect* from his partner while refusing to do so involves a decision to *cooperate* with this partner. This decision is made in complete ignorance of the other person's decision. As Komorita and Parks (1996) note, "The dilemma is based on the fact that individual rationality has led to collectively irrational behavior. By pursuing their own selfish interests, each is worse off. If each could trust the other to cooperate, both would be better off" (p. 7). In the case of the two-person PDG, the individuals are faced with the desire to maximize their own interests (defect) which conflicts with maximizing collective welfare (cooperate).

12.4.2. Potential Explanations for Overconsumption of a Resource

There are several potential explanations to help explain overconsumption in resource dilemma tasks. These include understanding behavior in social and temporal traps, decision making, social identity theory, and uncertainty.

12.4.2.1. Understanding behavior in social and temporal traps. Though Hardin (1968) did place most of the blame for the failure of the commons on the social trap component, is the role of the temporal trap completely negligible? In other words, what is the relative importance of each type of trap in real-world situations? In a study of 56 introduction to psychology students using a regenerating resource pool and subjects either participating alone, in groups of three, or groups of six, Messick and McClelland (1983) found that individuals working alone, for whom the social trap is irrelevant, tended to be more consistent in their harvests across trials but do not perform optimally as four of the six individuals failed to maintain the pool for the full 50 trials. This indicates that the temporal trap is not trivial even for individuals working alone but why is this? The authors point out that the task tends to be unforgiving and that one or two impulsively large harvests will reduce the pool size to such a low level that it would be impossible for the pool to replenish itself. In order to sustain the pool, subjects would need to take only the optimal harvest size.

On the other hand, groups seem to make much higher initial harvests and then decrease the size of the harvest sharply. So individuals working alone have some degree of difficulty dealing with the purely temporal trap whereas individuals in groups have more trouble dealing with both the temporal and social trap. Several explanations are offered to explain the social component. First, *social loafing* (See Module 15) says that if no group member feels personally responsible for the outcome and if each individual feels that he/she can take a bit extra, then overuse is likely. Second, the *big pool illusion* is the tendency to ignore the number of other users and to focus solely on the relation between one's harvest and the total resource available. Third, the relationship between the individual's choice and the group outcome becomes muddled as the number of others also impacting the outcome increases. Finally, a competitive orientation leads an individual to want to keep up with the others and not be the one who gets the least.

12.4.2.2. Decision making. Messick (as cited in Foddy et al., 1999) speculated that how we decide to handle a social dilemma depends on the nature of the outcomes; that is whether we are dealing with profits, costs, jobs, or lives. To determine this, he discussed four dimensions or features that affect how we make such decisions, though he did note that other features such as personal aspects of the decision maker (i.e. Social Value Orientation; SVO) can affect the final decision.

To describe these four and to show how social dilemmas manifest themselves in the real world, Messick utilized five examples. In the discussion to follow, one will be outlined. Messick told the story of a student, Michael, in one of his business ethics classes who was a naval flight instructor. Michael's job was to train naval pilots to fly fighter jets and to make aircraft carrier landings and take offs. At the end of each month, Michael would take his trainees up into the atmosphere and jettison jet fuel. Why would he do this? The Navy's allocation system was based on previous use. If the squadron experienced bad weather the month prior and could not make as many training flights, the next month's allocations would reflect that level of usage. If the weather was nice, the pilots would not be able to make as many flights. So to ensure the squad had its full allocation, fuel was released into the atmosphere, a practice used by many Navy instructors. What is at stake in this situation is lives. If the trainees could not log enough hours in the sky then they may not be as prepared should a war break out. Hence, their lives could be in jeopardy. In that way, Michael was bound by a moral imperative to ready his pilots.

First, when making decisions, the extent to which the social dilemma is explicitly motivated by future considerations is important. In our example, planning involves a time dependent allocation system to achieve Michael's goal of providing quality training for his pilots. Having past fuel consumption determine future allocations is more an impersonal feature of the environment than a rational, strategic plan.

Second, some problems faced in the real world are explicitly collective in nature while others are essentially individual problems. In Michael's case, the dilemma is not inherently collective, but originates from a poorly designed allocation system and Michael is behaving rationally within the context of the system. His concern lies with his pilots being effectively trained for combat and dumping fuel is an effective way to guarantee that. He does not need to consider the actions of anyone else in the

system.

Third, moral or legal concerns are important. When moral issues are involved, decisions may become more rule-based than outcome based, and when legal issues are involved, certain strategies that could make the resolution of the issue easy, may need to be excluded. Moral issues are paramount in the dilemma faced by Michael as lives are at stake. So again, dumping fuel makes sense. Maybe in a way it is a matter of which is the lesser of the two evils.

Finally, outcomes are important, and the range of outcome variables is very wide and extremely complex, more so than can possibly be studied in experimental research. In Michael's case, money is not the outcome but the preservation of life, a situation not easily studied by researchers.

Messick argues that social psychology needs a new way to consider decision making in social contexts such as the dilemma described above. He advocates March's (as cited in Foddy et al., 1999) approach using three broad categories of concepts. These include appropriateness, personal (or organizational) identity, and finally rule-based decision processes in addition to consequence-based processes. Hence, the essence of the AIR (Appropriateness, Identity, Rule) approach is in the perception of the situation. It may be appropriate to make a tradeoff between profits and costs in some situations, but in Michael's case, it was not appropriate to make a tradeoff between lives and costs. As Messick says, "Risk of life dominated his (Michael's) deliberations" (p. 217).

12.4.2.3. Decision making: Decision heuristics. Outside of careful deliberation, how else might we arrive at a decision? Another possibility is that decision heuristics play in. Schelling (1960) stated that we use a focal point or a salient strategy/solution to a decision making problem in which the appropriate behavior is unclear. When communication among group members is impossible, tacit coordination can emerge so long as members realize the focal point as the best solution to the problem and assumes the other group members will recognize this as well. Allison and Messick (1990) stated that the *equality rule*, or the idea that whatever is to be allocated should be done so equally among group members, is one such focal point. Rutte, Wilke, and Messick (1987) note that it is a rule to facilitate one's own decision making (the role as a heuristic), thereby providing a solution to an ambiguous social dilemma, and is also a standard to evaluate the behavior of others. The equality rule is violated when situational or task cues making it salient are diminished or due to the presence of competing cues.

Allison and Messick (1990) led subjects to believe they were the first of six group members to take points from a common resource pool and that they could take as many points as desired which could later be exchanged for cash. Three variables were experimentally manipulated. First, subjects in the low payoff condition were led to believe the pool was only 18 or 21 points in size whereas those in the high payoff condition were told the pool consisted of either 24 or 27 points. Second, the pools were divisible (18 and 24) or nondivisible (21 or 27). Third, half of the subjects were placed in the fate control condition and told that if the requests from the six group members exceeded the pool size, then no one could keep any points, while the other half were in the no fate control condition and told there would be no penalties for overconsumption of the pool. Finally, data for a fourth variable, social values, was

collected via questionnaire four weeks prior to participation. In all, the study employed a 2 (fate control) x 2 (payoff size) x 2 (divisibility) x 2 (social values) between-subjects factorial design.

Results showed that subjects took the least number of points from the resource pool when the resource was divisible, the payoffs were low, and there was no fate control. On the other hand, subjects took the most points when the resource was nondivisible, the payoffs were high, and subjects were noncooperative. To further demonstrate this point, Allison and Messick (1990) counted the number of inducements to which participants were exposed. This number ranged from 0 to 4 inducements. Subjects took between one-fifth and one-fourth when there were one or two inducements, took about one-third when there were three inducements, and about half of the pool when all four were present. So the equal division rule was used when there were no temptations to violate equality but as the number of temptations increased, subjects became progressively more likely to overconsume the pool. The authors conclude that the presence of competing cues/factors tends to invite the use of self-serving rules to include "First-come, first-served" and "People who get to go first take more."

The type of decision heuristic or tacit coordination rule used may vary as a function of the type of social dilemma. Across three experiments (Van Dijk and Wilke, 1995), subjects participated in a four-person group in either a one-trial resource dilemma or one-trial public goods game and their group could obtain a bonus. Group members were identified by the letters A, B, C, or D. In Experiment 1, for the Public Good Dilemma condition, subjects were told their group would receive a bonus of 300 points if they contributed 120 or more points to a group resource. Of the four members, two held 100 points (positions A and B) while the other two held 50 points (positions C and D). If the condition was met, all four members shared the bonus equally (75 points per member) and each individual member would receive the points he/she did not contribute. In the Resource Dilemma condition, subjects were told their group controlled a resource of 300 points. Two members could take 100 points (positions A and B) while the other two could take 50 points (positions C and D). The group would receive a bonus of 300 points if they took 180 points or less and it would be divided equally among all four group members (i.e. 75 points each). As well, each member could keep the points he or she took. In both conditions, participants with a letter C were in the Low Position condition and those with a letter B were in the High Position condition. As well, subjects in both dilemma conditions were informed that the points could be turned in for money (approximately \$.60 per point). Experiment 1 therefore employed a 2 (dilemma type) x 2 (position) factorial design. In Experiments 2 and 3, subjects were also asked how important it was to them, when making their decision, to allocate the final outcomes equally. In Experiment 3, dilemma type was manipulated identical to the first two experiments, but subjects were told they would receive either one-third of the bonus (high interest) or one-sixth of the bonus (low-interest).

In terms of choice behavior, Experiments 1 and 2 showed a main effect for position with subjects in the high position giving more points to the group resource or leaving more points in the group resource than subjects in the low position. There was also a significant interaction such that low position subjects facing a public goods dilemma gave more points than comparable subjects in the resource dilemma. In

contrast, high position subjects facing a resource dilemma gave more points than their counterparts. In terms of coordination rules, results across all three experiments showed that in the public goods dilemma, subjects more accurately estimated the number of points considered fair to give using the proportionality rule but in the resource dilemma, the equality rule was best employed to this end.

In Experiment 1, a position x coordination rule interaction was also found and low position subjects used the proportionality rule most accurately whereas high position members used the equality rule. In reality, subjects would have had to use the opposite rule in both position conditions to obtain more favorable outcomes for themselves. The authors note that this behavior is consistent with Mikula and Schwinger's (as cited in Van Dijk and Wilke, 1995) concept of the *politeness rule*, or the idea that group members turn to rules that result in higher outcomes for their partners, but is contrary to Messick and Sentis (as cited in Van Dijk and Wilke, 1995) who propose that choice of coordination rules are shaped by self-interest.

In Experiments 2 and 3, Van Dijk and Wilke (1995) also wanted to find out if subjects facing a resource dilemma were more motivated to minimize differences in final outcomes than subjects in the public goods dilemma condition by asking a single question and allowing subjects to respond on a 7-point scale with a 7 indicating it was important and 1 indicating it was not important. Results confirmed this prediction with subjects in the resource dilemma condition reporting a mean of 5.4 and those in the public goods dilemma condition reporting a mean of 3.5 in Experiment 2, and means of 5.8 and 4.1, respectively, in Experiment 3.

Finally, results of Experiment 3 showed that in terms of choice behavior, high interest subjects gave more points to the group resource or left more points in the group resource than did their low interest counterparts. Also, high interest subjects facing a resource dilemma left more points in the resource than their counterparts gave in the public goods dilemma and low interest subjects facing a public goods dilemma gave more to the group resource than low interest subjects facing the resource dilemma took from the resource.

All in all, Van Dijk and Wilke (1995) showed that the two dilemmas do cause different choice behavior. Across experiments, subjects in the disadvantageous position (i.e. low endowments/access or low interest) chose to respond more cooperatively in the public goods dilemma than in the resource dilemma but the opposite was true for subjects in the advantageous position (high endowment/access or high interest) as these individuals were more cooperative in the resource dilemma. The authors attribute this to a preference for the equality rule in resource dilemmas and for the proportionality rule in public goods dilemmas and note that the consequences for real world issues are intriguing. For instance, providing *equal* outcomes to all people may be more important when deciding how to distribute energy than in setting up a program to prevent excessive energy consumption. In terms of a program such as a water distribution system, most may prefer the costs be distributed *proportionally*, that is in terms of the income of the potential users or based on their interest. Hence, Van Dijk and Wilke (1995) state that this example should caution researchers not to discuss the results of the two dilemma types interchangeably.

12.4.2.4. Decision making: Cognitive load. Kunda (as cited in Roch, Lane, Samuelson, Allison, and Dent, 2000) theorized that high cognitive load leads to a reliance on stereotypes not because it interferes with the processing of relevant information, but because it disrupts the intentional inhibition of stereotypes. Over two studies, Roch et al. (2000) investigated whether individuals participating in a resource allocation task would make different decisions and use different information processing strategies if they were distracted (high cognitive load) or not distracted (low cognitive load). In the first study, participants in the high cognitive load condition were given 20 seconds to remember an eight-digit number and then performed a resource allocation task. Results showed that low-load participants requested more points from the common pool, made more task relevant statements (i.e. statements directly related to the task but not mentioning or implying equality), and made as many statements indicating the use of the equality heuristic as did participants in the high load condition. The larger request sizes are consistent with the notion that low-load participants had the necessary cognitive resources to engage in more systematic processing and therefore consider contextual factors in a more self-serving way. The authors note that given the large variability in the request sizes of low cognitive load participants, individual differences did play in otherwise, assuming they had considered the same situational cues, their requests would have been similar in size. Also, statistical analysis reveals that the number of task-relevant statements alone does not mediate size of the requests and that the number of equality statements must also be included.

In the second study (Roch et al., 2000), subjects were brought in to participate in a resource dilemma game but were not given specific details. They were given a blank sheet and asked to write down whatever questions they had about the game. Subjects in the high cognitive load condition were also given a nine-digit number to remember. No resource consumption task followed. Coders evaluated the list of questions and classified them as an anchoring statement, or one that requested information needed if one wished to consume one's equal share of the resource; an adjustment statement, or one that requested information if one wished to consume either more or less than one's equal share; or as a statement not fitting into either category. Results showed that participants under high cognitive load generated fewer questions, participants in both conditions asked about the same number of anchoring statements, and those in the low load condition asked more adjustments questions. As for SVO, in the high cognitive load condition, both noncooperators and cooperators asked about the same number and types of questions but in the low cognitive load condition, noncooperators asked more adjustment questions.

The authors conclude that high load participants relied on heuristics to attain their level of desired confidence whereas low load participants relied on both heuristics and systematic or effortful processing to close the gap between their current level of confidence and their desired level of confidence. Although the use of heuristics is not necessarily negative, it is important to be wary of the fact that different decisions are reached when heuristics are used compared to systematic processing. Also, participants with a cooperative social value orientation rely on the equality heuristic regardless of cognitive load possibly because it fulfills their moral imperative. On the other hand, noncooperative individuals have a desire/motivation for might and dominance and typically engage in a more systematic

search of the situation for a better outcome for themselves and are therefore more susceptible to cognitive load.

12.4.3. Social Identity Theory

12.4.3.1. Defining social identity theory. **Social identity theory** asserts that people have a proclivity to categorize their social world into meaningfully simplistic representations of groups of people. These representations are then organized as prototypes, or “fuzzy sets of a relatively limited number of category defining features that not only define one category but serve to distinguish it from other categories” (Foddy and Hogg, as cited in Foddy et al., 1999). This social categorization process leads us to emphasize the perceived similarities within our group and the differences between groups and involves the self. We construct in-groups and out-groups and categorize the self as an in-group member. From this, behavior is generated such that the self is assimilated to the salient in-group prototype which defines specific cognitions, affect, and behavior we may exhibit. Conformity, in-group out-group homogeneity, in-group bias, stereotyping, normative behavior, etc. are all based on self-categorization then (See Module 15).

In fact, social norms function to deemphasize egoistic incentives so that the collective may benefit. Types of norms include injunctive which is a moral standard or the ‘ought’ meaning of norms and includes both personal and social norms, and descriptive or norms that function to tell us what is typical. When individuals feel a high degree of awareness and personal responsibility, personal norms will be activated and direct their behavior. Biel, von Borgstede, and Dahlstrand (1999) examined several factors potentially affecting different social problems. These eight factors included the *likelihood* of the person changing behavior, *need* for changes in society, the *importance* of making behavioral changes, the *seriousness* of the problem today and in 10 years time, efforts to *reduce* the problem, arguments for avoiding *inconveniences* certain actions might cause, a sense of *personal responsibility*, and the shift of responsibility to *politicians* and other policymakers. The social problems examined included recycling or the problem of waste products, buying ecological products such as organic food or the problem of pesticides, commuting by car or public transportation or the problem of air pollution, and reducing electric consumption or the problem of electric supply. The results showed that the importance to act, a sense of personal responsibility, and the seriousness of the potential problems correlate substantially with norm perception. If an injunctive norm is perceived, people are likely to report they will act cooperatively and change their behavior.

12.4.3.2. Levels of inclusiveness. These categorizations are further seen to vary in terms of inclusiveness. Turner (1991, as cited in Foddy et al., 1999) identified three levels of inclusiveness – individual, intermediate in-group, and superordinate. In terms of the *individual* level, people define themselves in terms of how much they differ from other people. At the *intermediate in-group* level, focus is on similarities between the self and the in-group but also on differences between the in-group and some salient out-group. Turner notes that some groups are more inclusive than others and

therefore more *superordinate* with humanity representing the highest level of inclusion for a superordinate group.

The shared resource and associated interdependence must form the basis of a superordinate group identity which serves to remove the conflict among competing subgroups. If subordinate or subgroup identities are made salient such that they emphasize differences between members of a commons, the process of in-group bias and intergroup competition may undermine collective interests. Likewise, if the cost to the individual is too high, the collective good may not be promoted. Kramer and Brewer (1984) found that when a subgroup identity was made salient, male subjects extracted more points across trials as the resource pool approached depletion whereas males for whom a superordinate identity was made salient, decreased their take when resource depletion was obvious. Higher users were also rated as more selfish. The authors note that individuals with a sense of collective identity may be willing to act to compensate for the selfish behavior of others in the group so long as they are not alone in doing so. Though a superordinate group identity is best, it is difficult to establish and maintain as people have a large repertoire of identities to define themselves by. According to the *optimal distinctiveness theory* (Brewer, 1991) people in large groups tend to categorize themselves at the subgroup level as it satisfies competing desires to be distinct and to assimilate.

12.4.3.3. Social identity and social dilemmas. Social identity theory has one major implication for social dilemmas then. As a group of people more clearly define themselves as members of a common social group, their collective welfare should prevail over self-interest and they should then behave more cooperatively or practice greater self-restraint. Why is this? A few reasons are possible. First is in-group favoritism such that we see other members of our group in favorable terms and assign them attributes such as being trustworthy, honest, and cooperative. Messick, Wilke, Brewer, Kramer, Zemke, and Lui (1983) found that expectations of reciprocity predicted cooperative response to a resource dilemma. This in-group favoritism also plays out in terms of groups competing for the same resource such that a desire for your own group to gain more than an out-group emerges. Of course, the problem with this is that if the resource is plundered to deny access to a competing out-group, then the in-group is also harmed. Second, it may be that we attach greater weight to collective outcomes than to individual ones. So, outcomes for the other group members or for the group as a whole, are seen as one's own. Third, social group boundaries are typically fluid or elastic, we have multiple group identities, and they are hierarchically ordered. Inclusion within a common social boundary acts to reduce social distance among group members making it less likely they will make sharp distinctions between their own and other's welfare.

Brewer and Kramer (1986) examined the effects of social identity, group size, and decision framing in both the resource dilemma and public goods dilemma. Using a 2 (task structure - resource dilemma vs. public goods dilemma) x 2 (level of social identity - individual or collective identity) x 2 (size of group - small or 8 members vs. large or 32 members) factorial design, the authors found that social identity is only an issue when depletion of a common resource has become severe. Individual self-interest or collective well-being is not very acute or apparent when there is an ample supply of a commons. When

the choice problem was phrased as a resource dilemma, resource-use decisions were not affected by group size but were affected by group identity when the resource was endangered. Self-restraint increased under the collective identity when the group size was large.

In terms of the public goods dilemma, individuals were more sensitive to diffusion effects such that large groups undermined the positive effects of collective identity. When the collective identity was not made salient, subjects kept a moderately high amount for themselves on each trial regardless of group size. In small groups, the individual's perceived contribution to the resource makes a difference such that increasing salience and immediacy of collective loss increased willingness to sacrifice personal gain for the collective welfare. In large groups, perceived contribution makes less of a difference such that enhancing the salience of the group as a whole increased preference for risk and individuals kept as much for themselves in the short run. Brewer and Kramer (1986) conclude that the public goods dilemma seems to be particularly vulnerable to the deleterious effects of group size and group identity is not able to override this.

12.4.4. Social Value Orientation (SVO)

12.4.4.1. Defining and measuring SVO. **Social values** are defined as "distinct sets of motivational or strategic preferences among various distributions of outcomes for self and others" (McClintock, 1978). The four possible social values are conceptualized as having either a prosocial or proself orientation. In terms of prosocial orientations, **altruism** is when a person desires to maximize other's outcomes regardless of their own outcome (Kuhlman & Marshello, 1975). **Cooperation** is when the person wants to maximize joint outcomes. In terms of proself orientations, **individualism** is when a person is only concerned with maximizing his or her own outcome whereas **competition** is an attempt to maximize one's own outcome relative to others.

SVO is most commonly measured using the decomposed game (van Lange et al., 1997) such that participants chose among three options offering points to Self and Other. For instance, Option A may be 480 points to Self and 80 to Other representing a competitive choice, Option B may be 540 points to self and 280 points to other or the individualist choice, and Option C may be 480 points to Self and 480 to Other, representing the cooperative choice. In order to be classified, participants must demonstrate a preference for one of the three orientations by making the corresponding choice on at least 6 of the 9 trials.

12.4.4.2. SVO and predicting behavior in social dilemmas. When it comes to social dilemmas, how good is SVO at predicting behavior? First, in terms of resource dilemmas (RDs), Parks (1994) found that when faced with a declining resource pool, Cooperatives decreased their harvests across trials, Individualists increased it, and Competitors did not change their harvest level. Utilizing a 2 (SVO - cooperative vs. noncooperative) x 2 (uncertainty - in relation to a high or low replenishment rate), Roch and Samuelson (1997) found that individual harvest decisions were moderated by SVO but only under

high environmental uncertainty and during the middle stages of a resource dilemma task. The authors speculate that when there is little uncertainty about the replenishment rate of a resource pool, noncooperators may not see an opportunity to exploit the situation as their action would be more noticeable and potentially sanctioned by the group. On the other hand, when it is fluctuating across trials, they may see this is an opportunity to take advantage of the situation and maximize their own outcomes at the expense of others. Noncooperators, therefore, seem to be more attune to subtle cues in the decision environment and Roch and Samuelson (1997) attained some support for this statement. When environmental uncertainty was low, both cooperators and noncooperators report the replenishment rate was less uncertain, but the effect was significantly larger for noncooperators. It may be that cooperators are less sensitive to these same cues due to their guiding principles of morality and fairness which are not context sensitive.

Using a decomposed game procedure, Kramer, McClintock, and Messick (1986) found that cooperators generally acquired fewer resources for themselves per trial than did noncooperators. In the sustained use condition, cooperators and noncooperators did not differ from each other much, other than noncooperators initially taking somewhat more for themselves. By the third trial block, the behaviors of both groups were very similar. In the rapid depletion condition, noncooperators took significantly more for themselves indicating no adjustment to the declining resource pool across trials. In the final trial block, faced with imminent loss of access to the valuable resource, noncooperators took more than 7 points for themselves whereas cooperators took less than 5 points. Even at the end, cooperators tended to harvest only what was coming to them. Interestingly, noncooperators lack of reciprocation did not cause cooperators to abandon their own desire to conserve the resource pool. So how do we account for such differences? Kelley (1979, 1983) argued that an individual's social learning and early reinforcement cause different internalized rules or dispositions to develop which affects later behavior in situations such as those posed by resource dilemmas.

As for public goods dilemmas (PGDs), Parks (1994) found that trust was predictive of contribution behavior because the nature of payoffs necessitates thinking about other's actions, and that the Trust Scale did not correlate with either a Judgmental Measure or Decomposed Games thereby suggesting it to be a distinct concept. DeCremer and van Lange (2001) found that prosocials contributed more than proselves to the establishment of a common good and felt more social responsibility. They note that van Dijk and Wilke (1997) argued that in PGDs social responsibility is likely to be more easily activated than in RDs, particularly when the dilemma is portioned. Hence, choice differences between prosocials and proselves may be more salient in PGDs than RDs.

12.4.5. Uncertainty

Another potential explanation for overconsumption centers on uncertainty which can take two different forms. First, *environmental uncertainty* indicates features of the environment that are unknown or unknowable such as the size of the resource. Second is *social uncertainty* which centers on the

unpredictable nature of other's actions. In general, overconsumption increases as resource uncertainty increases (Budescu, Rapoport, and Suleiman, 1990) but is reduced or eliminated in cases of social uncertainty if an equal share norm/heuristic is adhered to (Allison & Messick, 1990; Messick & Schell, 1992; Rutte, Wilke, & Messick, 1987). It is possible that this finding for social uncertainty depends on the type of social dilemma and so is not as salient in resource dilemmas as it is in public good dilemmas (Wit and Wilke, 1998).

The equal partitionment of a resource is possible when it comprises discrete, discernable units of approximately the same size. But many large-scale resources, such as water or air, have a nonpartitioned structure, thereby obscuring the equality rule. The only solution in this case is to "partition" the resource through such means as water meters. Also, the sheer size of a partitioned resource may in effect make it a nonpartitioned resource from which members can only estimate their equal share. In a study by Herlocker, Allison, Foubert, and Beggan (1997), subjects reported feeling more satisfied when they left with partitioned units than with nonpartitioned ones and consumed more of the nonpartitioned resource, whether physical, spatial, or temporal, than a partitioned one in large group settings. When members of a large group were given their equal share, they saw it as less than their equal share. On the other hand, Au and Ngai (2003) reported less collective overuse when group size was uncertain as participants acted as if the group was large and showed restraint by requesting less. DeKwaadsteniet, van Dijk, Wit, and De Cremer (2008) found that when the task environment of a social dilemma provides some type of salient cue to guide behavior (i.e. a strong situation) people make their harvest decisions on that cue but if the task environment does not provide such cue (i.e. a weak situation) they based their decision on their own social value orientation. So, prosocials will exercise self-restraint to further the outcomes for all when in a weak situation.

Allison, McQueen, and Schaerfl (1990) found that subjects drawing from a nonpartitioned resource took more units and said their decision was more difficult to make as they could not easily use the equality rule. Also, members of large groups were less likely to divide equally and took more of the shared resource, implying that the quantity of group members sharing a resource is more important than the quantity of the resource itself. It may be that a person's ability to estimate their equal share decreases as the number of others sharing a nonpartitioned resource increases called the overestimation bias or that people in large groups are less motivated to divide a nonpartitioned resource equally. So in terms of the former, members of large groups use the equal division rule as a focal point but the overestimation bias distorts their perception of the equal amount and in the case of the latter, people may consume more than their equal share when they sense their overconsumption will be difficult to measure or detect.

Three explanations can be offered for the pattern of behavior seen as a result of uncertainty (Garling, Gustafsson, & Biel, as cited in Foddy et al., 1999). First, the perceptual explanation asserts that overconsumption occurs because participants perceive a positive relationship between measures of central tendency, such as the mean, and variability. As resource uncertainty increases, people overestimate the size of the resource and request too much. This explanation is consistent with the big

pool illusion which states that we perceive resources of unknown size as larger than resources of a known size.

The second explanation states that participants weight the upper and lower bounds of the interval when estimating the size of a resource but do so in a way that they overweight the upper bound causing an upward shift in their estimates and request too much. Hence, the participant tends to judge desirable outcomes as more likely. This effect is called the *optimism bias*, outcome desirability bias (Zakay, 1983), or wishful thinking.

Finally, the *egoism bias* (Wilke, 1991) asserts that people try to maximize their own outcomes but their greed is constrained by the motive to maintain the resource and to have equal outcomes for all group members. In cases of uncertainty, the equality norm may be less compelling and people request more than they should. They may also not believe that a sufficient number of others will request less than their share. Hence, the goal of efficient resource use conflicts with egoism. An egoism bias may also cause misperceptions of the size of the resource when the outcomes are dependent on other's decisions that lead to unintentional harvesting (Garling, Gustafsson, & Biel, as cited in Foddy et al., 1999).

So which explanation best accounts for overconsumption in resource dilemmas or underfunding in public good dilemmas? Research seems to point to the outcome-desirability or optimism bias (Gustafsson, Biel, & Garling, 1999 & 2000). If people are unaware of the size of a resource and need to estimate it, they will be too optimistic when the resource is of value to them (make an overestimation in resource dilemmas or make an underestimation in public good dilemmas) and overuse/underfund it.

12.4.6. A Potential Solution to Overconsumption

Resource dilemmas present several interesting dynamics when it comes to finding a solution. First, the individual has to realize there is a problem with overconsumption. Second, is the level of the consumer's consciousness or how sensitive she is to the ill-effects of overconsumption. Third, is the willingness and ability of the individual to take effective action to prevent a crisis from developing from overexploitation. Though an individual is aware that an issue exists and is sensitive to the ill-effects, does she take the appropriate measures to reduce her use? It may be that she wants to recycle, but her town has no recycling program in place. Finally, even if a reduction in resource use is essential, governmental coercion is ineffective as governmental bodies change over time. Also important to a discussion of fines, but also rewards, is the idea that rewards can be good in the short term but bad in the long term if people depend on their presence to act in a socially responsible way (Edney, 1980).

When it comes to resource dilemmas, the democratic value of equality may be preserved at the expense of another value, freedom such that when mutual self-restraint breaks down, the community must decide whether to compromise its democratic values or further jeopardize its resources (Edney, 1980). So what are potential ways to solve the problem of overconsumption?

12.4.6.1. Structural change and leaders. There are two potential solutions to deal with overconsumption that threatens the commons (Samuelson, 1991). First, individual solutions involve the voluntary, cooperative efforts by members of the group to solve the problem using the current incentive structure. The second possible solution would be the use of a structural solution. These are any actions that abolish or change the incentive structure that created the overconsumption/social dilemma. Noteworthy is the fact that use of these structural solutions may cause the situation to no longer meet the definition of a social dilemma or it would reduce the difference in reward associated with cooperating and not cooperating (Foddy & Crettenden, 1994 and Rutte, 1990 as cited in Foddy & Hogg, 1999). The discussion to follow will be organized around to key questions: first, what determinants affect the decision to make a structural change and second, once the decision has been made to execute a structural change, under what conditions are these rival systems chosen?

12.4.6.2. Determinants for making structural change. In terms of the first question, the perception of inequity in a resource dilemma may either facilitate or inhibit structural change depending on the *context* in which it occurs (Samuelson and Messick, 1986a). Samuelson (1991) found that a group member's causal attribution for a group's poor performance in using a common resource is a critical determinant in the decision to make a structural change. Using a 2 (perceived cause - personal greed (subjects told task was easy and previous groups maintained the commons well) vs. task difficulty (told task was difficult and other groups performed poorly in the past)) x 2 (attribution - situational vs. dispositional) between subjects factorial design, subjects in the task difficulty condition thought the group's failure was more due to bad luck and variable replenishment rate (situational attribution) and voted for change whereas those in the personal greed group saw other members as causing the problem (dispositional attribution) and refused change (reasons to follow in the discussion of the second question below). Hence, two factors that play a crucial role include: 1) the perceived effectiveness of the group in managing the resource and 2) if ineffective, what the cause of this ineffectiveness is.

Next, Messick, Wilke, Brewer, Kramer, Zemke, and Lui (1983) hypothesized that when subjects withdrew resources from a commons at too high a rate, the group would be more willing to change the group decision structure than subjects in optimal or suboptimal conditions. Utilizing a 3 (use - overuse, underuse, and optimal use) x 2 (variance - high and low) factorial design, they found that nearly 70% of subjects in the overuse condition voted to eliminate free access whereas subjects who did not see the pool size decrease (i.e. underuse or optimal use conditions) voted against the elimination of free access, possibly adhering to the adage 'if it is not broke, don't fix it.' Hence, rate of use is a factor in the decision to make a structural change.

Samuelson (1993) noted that changes in social institutions involve transition costs which make the status quo more attractive. Also, there is less uncertainty about the status quo compared to these new systems. Before a change can be endorsed, these two issues must be reconciled. This process involves evaluation of the potential change and is organized around four dimensions. First, *efficiency* is the dimension that represents the capacity of an allocation system to provide sufficient levels of a resource

to group members without depleting it. Second, *fairness* involves the degree to which the distribution of resources is equal. Third, *freedom* is the extent to which a system allows individuals personal autonomy to make resource use decisions. Finally, *self-interest* is a member's own evaluation of how his or her personal resource outcomes will be affected by the new system.

Two key factors should influence this evaluation process as well. First, there are systematic differences among individuals in the relative importance assigned to the different evaluative dimensions. As such, this may result in predictably different evaluations. Second, past experience with the status quo system may influence the perceived location of that system on relevant evaluative dimensions.

To test this, Samuelson (1993) used a 2 (social values - cooperative vs. noncooperative) x 2 (resource use - extreme overuse vs. moderate overuse) x 2 (variance - high vs. low) between subjects factorial design. Results showed that almost half of all subjects ranked efficiency as the most important evaluative dimension with fairness (28%), freedom (19%), and self-interest (4%) as the next most frequent selections. Cooperative individuals ranked fairness as more important and endorsed structural change only under conditions of inefficient management of the common pool, whereas noncooperative subjects assigned greater importance to self-interest and refused structural change regardless of the efficiency of the resource use. In terms of resource use, he found that subjects in the extreme overuse condition rated the free access system as less efficient and rated the status quo system as less fair than moderate overuse subjects and voted to replace the system, similar to the findings of Messick et al. (1983). Hence, the relative importance of different evaluative dimensions is a factor in the decision to make a structural change.

12.4.6.3. Which change is best? Once a decision has been made to make a structural change, a few options are available to the individual/group. The decision may be made to utilize *privatization*. This is when commonly held resources are converted into privately owned resources and effectively eliminates interdependence among users. Privatization may be done equally or proportionally. Another option is to elect a *superordinate authority* or leader but as with all alternate choices, it comes with certain costs. It will result in the loss of freedom to utilize the commons resource and in making decisions for the group, some will be upset with the leader's decision and be forced to accept it.

So which type of change is preferred under different conditions? Yamagishi (1986; cited in Samuelson, 1991) noted that members must perceive that the structural change will be effective in attaining the goal of mutual cooperation. Returning to the discussion of the Samuelson (1991) study, when group members made a situational attribution for the group's failure, they were less likely to make negative dispositional attributions about the other group members and were more likely to elect a leader. When other group members were seen as the source of the problem (i.e. the individual made a negative dispositional attribution as found in the personal greed condition) the leader system was not endorsed. Samuelson speculated that subjects may regard these other group members as too incompetent or untrustworthy to given leadership authority.

Samuelson and Messick (1986b) placed subjects in groups of 6 and told them to harvest resource units

from a common, replenishable pool over 10 trials. Subjects had to maximize individual harvests while maintaining the resource pool for future use. Manipulated variables included resource use (2 levels - overuse vs. optimal use), perceived inequality (variance) in other group member's harvests (high with a range of 37 to 269 or low with a range of 104 to 179), and type of alternative to free access (3 levels with leader, equal division, or proportional division). Results showed that overuse subjects voted for structural change more than optimal use subjects with leader receiving the most support followed by proportional and equal division. Equal division was the least popular solution possibly because it was viewed by subjects as a potential threat to their ability to harvest a similar amount of resources in the second session. The lowest rates for equal division came in the optimal use condition where the commons was not in danger of being depleted. Again, the 'if it ain't broke, don't fix it' adage seems to come into play. Subjects were happy with their harvest outcomes and no harm came to the commons. Samuelson and Messick (1986a) conducted a similar study and found that the election of a leader was nearly unanimous among high access/overuse/high-variance subjects. Low access subjects preferred equality-restoring systems.

In the Samuelson (1993) study, equal privatization was rated as most attractive, followed by harvest cap, free access, and the leader option last. Strong endorsement for equal privatization and harvest cap may be due to it allowing for personal autonomy and a low endorsement of leadership may be explained by the fact that it eliminates self-determination. For instance, noncooperatives, who determined self-interest to be the most important evaluative dimension, rejected the leader option since it would lead to a loss of freedom in accessing the commons and cause them to have to accept whatever decision the leader made.

The type of social dilemma seems to play a role in leader selection too. In public goods dilemmas, the role of the leader would be to decide how much an individual should contribute from their private resources whereas in resource dilemmas, the leader determines how much of a common resource an individual can take. Van Dijk, Wilke, and Wit (2003) showed that subjects in the public goods dilemma were more favorable to leadership after failure feedback likely in an attempt to improve their condition compared to those in the resource dilemma condition for whom their situation did actually improve (they had more at the end than they did at the beginning). This seems to be in keeping with the idea that losses loom larger than gains. On the other hand, when there was no information about the group's success or failure, subjects in the public goods dilemma were more reluctant to install a leader possibly because it is more threatening to give up decision freedom over personal property compared to collective property. Simply, a higher threat to decision freedom was associated with a lower preference for leadership.

Among the types of structural change, leaders seem to be the obvious choice. Why might a leader be able to resolve the conflicting pressures between individual and group interests? Several explanations are plausible (Foddy and Hogg as cited in Foddy et al., 1999). First, they may have access to information about the overall state of the resource that others may not. Second, the leader can possibly coordinate the actions of group members. Third, there is no longer a resource dilemma as only one

person has access to the resource pool. There is one exception to this. In many cases, there are two or more leaders accessing the resource pool on behalf of separate groups or subgroups. In this case, the appointment of leaders does not dissolve the dilemma but retains its features. Fourth, the role of the leader may evoke a leader schema which creates pressure to be fair and responsible. Lastly, making an individual responsible for the welfare of others may invoke a superordinate social orientation where concern for the group may lead to constraint in the dilemma setting.

So if the group decides on the election of a leader as a structural change, who is chosen? Messick et al. (1983) found that when selecting a leader subjects generally voted for themselves or for another group member who had taken a moderate harvest during the first session. Returning to our discussion of social identification, typically, when an individual is part of a group, behavior conforms to the group prototype. This is no different for the leader who occupies the most prototypical group position (Foddy and Hogg, as cited in Foddy et al., 1999). He/she does not actively lead but embodies the aspirations, attitudes, and behaviors of the group as they are manifestations of the group prototype (hence the voting behavior noted by Messick et al., 1983). With the passage of time, this individual can exert some influence in terms of becoming socially attractive and can then gain compliance with their suggestions, orders, or requests and are imbued with charismatic personalities as group members attribute the influence of the leader to his/her personality (dispositional attribution) and not to the prototypicality of the position (situational attribution).

It is also expected that the leader will favor the in-group over out-groups when there is competition for a limited resource due to accountability to the group. This results in a dilemma in and of itself which can be summarized as such: does the leader take more for the in-group at the expense of the out-group, hence winning the battle of group wills, but at the same time hurting the in-group when the resource is exhausted? Hence, accountability to the group causes the leader to forgo compromise which could result in a mutually beneficial intergroup outcome. In the case of social dilemmas, this problem is faced by subgroup leaders but for superordinate group leaders, it is not an issue and most are particularly conserving of the resource. One possible solution is to have leaders who are not subgroup prototypical, do not identify strongly with their subgroup, and are not highly accountable to the subgroup (Foddy and Hogg, as cited in Foddy et al., 1999).

Module Recap

Again, this began our discussion of social processes and how they affect motivated behavior. We discussed attribution theory, interpersonal attraction, attitude formation and change via persuasion, cognitive dissonance, and social dilemmas. In the future we will also look at social influence, social action, group processes, prejudice and discrimination, and other topics. Be on the look out for this in

Module 15.

For now, this is the final module in Part IV and so prepare for an exam if your instructor is giving one. Our final Part will focus on internal motivation involving cognitive and physiological processes. We then end with a discussion of motivated behavior, for better or worse. This discussion focused on the dark side of human behavior but also positive aspects. Universal human values will be offered as an explanation for this behavior.

V

PART V: INTERNAL MOTIVATION AND FINAL CONNECTIONS

Part V. Internal Motivation and Final Connections

Module 13: Motivation and Cognitive Processes

Module Overview

We now turn our attention to sources of internal motivation. Module 13 will discuss cognitive process and how they relate to motivated behavior. Our discussion will cover perception, attention, memory, problem solving, reasoning, and learning. Each can be discussed in much more detail than given here but this is to provide you with some understanding and connections between cognitive psychology and motivation. Bear in mind that for every overt or observable behavior you see, there is a series of physiological and cognitive changes controlling it. In Module 13 we dive into cognitive and in Module 14 we will discuss physiological.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 490: Cognition and Memory and PSYCH 491: Principles of Learning at Washington State University.

Module Outline

- 13.1. Perception: Motivated to Add Meaning to Raw Sensory Data
- 13.2. Attention: Motivated to Commit Cognitive Resources
- 13.3. Memory: Motivated to Retain and Retrieve Information
- 13.4. Problem Solving: Motivated to Find Solutions
- 13.5. Reasoning: Motivated to Make Good Decisions
- 13.6. Motivated to Learn...and at Times, Unlearn/Relearn

Module Learning Outcomes

- Clarify why we are motivated to perceive our world.
- Explain why we might attend to some events but not others.
- Describe the utility of retaining and retrieving information.
- Clarify types of motivated behavior we might engage in to solve a problem.
- Explain how we go about making good decisions and what form cognitive errors can take.
- Differentiate the different models for how we learn and clarify how each motivates behavior.

13.1. PERCEPTION: MOTIVATED TO ADD MEANING TO RAW SENSORY DATA

Section Learning Objectives

- Define sensation, receptor cells, and transduction.
- Define perception.
- Outline Gestalt principles of perceptual organization.

Before we can discuss perception, we should first cover the process that precedes it, sensation. Simply, **sensation** is the detection of physical energy that is emitted or reflected by physical objects. We sense the world around us all day, every day. If you are sitting in lecture you see the slides on the screen and hear the words coming from the professor's mouth. As you sit there, you are likely smelling scents from your classmates, hopefully pleasant ones. You might be chewing gum and tasting its flavors. And your clothes brush up against your skin as you move in your seat. These events are detected using our eyes, ears, mouth, nose, and skin and as you will see in Section 13. 3 are sent to sensory memory first. The cells that do the detecting in these sensory organs are called **receptor cells** and definitely not the focus of this module, or even the textbook, I think it is worth noting that the physical energy is converted to neural information in the form of electrochemical codes in the process called **transduction**.

So we have a lot of sensory information going to the brain via the neural impulse. What do we do about it? That is where **perception** comes in, or the process of adding meaning to raw sensory data. An analogy is appropriate here. When we collect data in a research study we obtain a ton of numbers. This raw data really does not mean much by itself. Statistics are applied to make sense of the numbers. Sorry. I did not mean to use the s-word in this book. J Anyway, sensation is the same as the raw data from our study and perception is the use of statistics to add meaning. You might say we are motivated to engage in the process of perception so that we can make sense of things.

Our perception of a stimulus can vary though....even in the same day. How so? **Perceptual set** accounts for how our prejudices, beliefs, biases, experiences, and even our mood affect how we interpret sensory events called stimuli. Over the last 10 modules we have discussed many ways that our perception can be affected (and defined this term in Module 2). Consider how we form our attitudes from Module 12, how life events shape who we are from Module 10, how we learn prejudices from the upcoming Module 15, how our reasoning can be biased to be discussed later in this module, how our worldviews affect perception from Module 9, the effect of personality from Module 7, or how satisfying our psychological needs or being deterred from doing so may affect our interpretation of events from

Module 8. What if we fail to achieve our goal? How might this frustrate us and lead to a change in mood (Module 3)? What if the costs of motivated behavior are too high (Module 5) or we are experiencing stress which directly impacts how we perceive the world (Module 4)? What if we are ill and our health and wellness are compromised (Module 11) or finally, we are trying to change our behavior and having difficulties due to not knowing how to make the change or not having the skills to do it (Module 6)? These are examples from everything we have covered in this book so far of how our perception of events can be affected...and within a day as Module 2 shows. One final example from health psychology will demonstrate this point. You wake up one morning feeling good but by afternoon are coming down with a cold and by the evening feel crappy. Consider how you might deal with your kids differently as the day goes on.

There is quite a lot that can be discussed in relation to perception but I will focus our attention on Gestalt principles of perceptual organization. Gestalt psychology arose in the early 1900s in response to ideas proposed by Wilhelm Wundt in German and Titchener and his system called Structuralism in the United States. They were against the notion that perceptions occurred simply by adding sensations. They instead asserted that the whole is different than the sum of its parts. Their principles include:

- *Figure-ground* - States that figure stands out from the rest of the environment such that if you are looking at a field and see a horse run across, the horse would be the figure and the field would be ground.
- *Proximity* - States that objects that are close together will be perceived together.
- *Similarity* - States that objects that have the same size, shape, or color will be perceived as part of a pattern
- *Closure* - This is our tendency to complete an incomplete object.
- *Good continuation* - States that items which appear to continue a pattern will be seen as part of a pattern
- *Pragnanz* - Also called the law of good figure or simplicity, this is when we see an object as simple as possible.

These principles help us to make sense of a world full of raw sensations. Other ways we make sense of our world, though not covered here, include monocular and binocular cues which aid with depth perception, perceptual constancy, apparent motion, and optical illusions.

13.2. ATTENTION: MOTIVATED TO COMMIT COGNITIVE RESOURCES

Section Learning Objectives

- Define attention.
- Clarify what it means to be distracted.
- Clarify the role of the central executive.
- Define selective attention.
- Explain how the concepts of processing capacity and perceptual load explain how attention can be focused and not distracted.
- Describe inattention blindness.
- Hypothesize whether attention can be divided.

Attention is our ability to focus on certain aspects of our environment at the exclusion of others. Despite this, we can be **distracted**, or when one stimulus interferes with our attending to another. In light of what you learned in Module 1, we have to wonder if distraction is really a form of being *unmotivated* or motivated to another end. Could it be that we allow ourselves to be distracted? Of course, yes, but there are also times when we are busily at work and someone interrupts us. My wife seems to know when I am achieving an epiphany while writing a textbook or replying to students in my online courses and comes into my office and waits to be acknowledged. This is better than in the past when she just started to talk. Still, someone hovering over you will make you nervous and engage in motivated behavior to end that state (i.e. the acknowledgement of her presence) at the expense of productivity.

So how do we choose what to attend to? Baddeley (1996) proposed that attention is controlled by what he called the **central executive**. It tells us where to focus our attention and can even home in on specific aspects of a stimulus such as the tone in a speaker's voice, color in someone's face, a noxious smell, or peculiar taste.

We can even use **selective attention** to voluntarily focus on specific sensory input from our environment (Freiwald & Kanwisher, 2004). As such, we might choose to focus on an aspect of a professor's lecture when it is interesting but begin paying attention more to people walking by in the hallway if it becomes boring and dry. Of course, arousal theory (Module 1) suggests that when our arousal level is low we could go to sleep or fall into a coma. I fortunately have never induce a coma in my students before. I cannot say there has not been snoring though.

How we can focus our attention and not be distracted by outside stimuli is a function of our **processing capacity** or how much information we can handle and **perceptual load** or how difficult a task is. *Low-load tasks* use up only a small amount of our processing capacity while *high-load tasks* use up much more. Lavie's **load theory of attention** posits that we can attend to task-irrelevant stimuli since only some of our cognitive resources have been used when engaged in low-load tasks, but high load tasks do not leave us any resources to process other stimuli.

Before moving on, check the following out: <https://www.youtube.com/watch?v=vJG698U2Mvo>

Note: If you did not actually watch the short video, the next section will not make sense.

Did you count the number of passes correctly? Likely not and if this is true, it is due to the phenomena of **inattentional blindness** or when we miss a stimulus clearly present in our visual field when our attention is focused on a task (Simon & Chabris, 1999). In the video, you were presented with 2, three-person basketball teams who were passing the ball to other members of their team. One team wore white shirts and the other black. The participant had to count the number of times members of one of the two teams passed the ball to other team members, all while ignoring the other team. During this, a person wearing a gorilla suit walks through the basketball game, stopping to turn in the direction of the camera and thump its chest. Only half of the participants actually see the gorilla walk through. Did you?

Visit the Invisible Gorilla website to learn more about this study: <http://theinvisiblegorilla.com/>

Two types of blindness are worth mentioning too, and not in relation to problems in the visual sensory system. First, **repetition blindness** is when we experience a reduction in the ability to perceive repeated stimuli if flashed rapidly before our eyes. Say for example a series of numbers are flashed in rapid succession and during this string the number 3 is flashed four times in a row. You may recall only seeing 3 one time, not four. Is it because we cannot visually separate the numbers? No. If the same experiment was repeated with letters, and in the midst of a string of letters you saw R r, you would believe only one R/r was presented to you.

Second, **change blindness** occurs when two pictures are flashed before our eyes in rapid succession. If the second picture differs slightly from the first, you will not see the difference as well as you could if presented side-by-side. The effect is stronger when the change is not in the central portion of the picture but in a peripheral area.

Finally, can we successfully *divide our attention* or focus on more than one stimulus at a time? Results of several experiments show that it is possible to successfully divide our attention for tasks that we have practiced numerous times but as the task becomes more difficult this ability quickly declines (Schneider & Shiffrin, 1977). Of course, dividing our attention comes with risks, especially where driving and texting are concerned. Finley, Benjamin, & McCarley (2014) found that people can anticipate the costs of multitasking, but do not believe they are personally vulnerable to the risks compared to other people.

So what does the literature say on driving and cell phone use? I am not going to dedicate pages of text saying what you have likely heard on the news. Instead, APA wrote a great article on this issue that I

will direct you to instead: <https://www.apa.org/research/action/drive.aspx>.

Please check out the article before moving on.

13.3. MEMORY: MOTIVATED TO RETAIN AND RETRIEVE INFORMATION

Section Learning Objectives

- Define memory.
- Describe the three stages of memory.
- Outline the seven sins of memory.
- Clarify how amnesia and interference lead to forgetting.

13.3.1. What is Memory?

In this class you have likely already taken a few exams. As you completed each, you had to draw the information it asked about from your storehouse of information that we typically refer to as memory, whether you were trying to recall dates, names, ideas, or a procedure. Simply, **memory** is the cognitive process we use to retain and retrieve information for later use. Two subprocesses are listed in this definition - retain and retrieve. The former is when we encode, consolidate, and store information. The latter is when we extract this information and use it in some way.

You might think of memory as a file cabinet. If you have one at home you use it to store information, or pieces of paper, away for use at a later time. Hopefully your system of filing this information is good and you can easily find a document when you need it again. Our memory operates in the same general way. We take pieces of information and place them in this file cabinet. We should know what drawer, where in that drawer in terms of a specific hanging folder, and then where in the folder our information is. If we do, we find the information and use it when we need it again, such as during an exam. As you will soon come to see, the cabinet represents long-term memory (LTM) and when we pull information from it, we move it into a special type of short-term memory (STM) called *working memory*.

13.3.2. Stages of Memory

Atkinson and Shiffrin (1968) proposed a three-stage model of memory which said that memory proceeds

from sensory, to short-term, and finally to long-term memory. First, **sensory memory** holds all incoming sensory information detected from our environment for a very short period of time (i.e. a few seconds or even a fraction of a second). Second, **short-term memory** holds a limited amount of information for a slightly longer period (about 15 to 20 seconds). Third, **long-term memory** holds a great deal of information for an indefinite period of time, possibly for decades (consider that the elderly can recall events from childhood if properly motivated). Let's tackle each briefly.

13.3.2.1. Sensory memory. Information obtained from our five sensory organs moves to sensory memory, also called the sensory register. This memory system has a near unlimited capacity but information fades from it very quickly. For instance, visual stimuli are stored in what is called the *iconic register* but only lasts here for a fraction of a second (Sperling, 1960) while auditory information is stored in the *echoic register* for a few seconds (Darwin et al., 1972).

13.3.2.2. Short-term memory (STM). Our second memory system holds information for about 15-20 seconds (Peterson & Peterson, 1959; Brown, 1958) meaning that what you just read in the sensory memory section is still in your STM. Likely what you read in Section 13.1 is no longer present. Also, the capacity of STM has been found to be 5 to 9 items (Miller, 1956) with the average being 7. Miller (1956) also proposed that we can take larger lists of unrelated and meaningless material and group them into smaller, meaningful units in a process called **chunking**. For example, if you were given a list of states to include: Rhode Island, Pennsylvania, Washington, Maine, Oregon, California, Maryland, South Dakota, Florida, Nebraska, and Arizona, you could group them as follows:

- Rhode Island, Maine, Maryland, Kansas, Pennsylvania, and Florida falling on the east coast
- Washington, Oregon, California, and Arizona falling on the west coast
- Kansas, South Dakota, and Nebraska falling in the middle of the country

Alone, the list of 11 items exceeds our capacity for STM but making three smaller lists falls on the short side of the capacity and no list itself has more than 6 items, still within the limits.

Our STM also holds information retrieved from long term memory to be used temporarily, sort of like taking the information from the file cabinet and placing it on a table. We call this **working memory** (Baddeley & Hitch, 1974). Once finished with the information, it is returned to the file cabinet for future use. It is important to point out the word *use* in the definition. By use it is implied that the information is manipulated in some way which makes it distinct from STM which just involves a mechanism of temporary storage.

13.3.2.3. Long-term memory (LTM). As the name indicates, information stored in this memory system is retained for a long period of time with the ability to be retrieved when needed. There seems to be no time limit for LTM and when people use the word memory, it is LTM they are referring to. There are two specific types of LTM - implicit and explicit. First, **implicit memory** includes knowledge based on prior experience and is called nondeclarative. An example is a **procedural memory** or memory of how to complete a task such as make a grilled cheese sandwich, ride a bike, or ring up a customer on a

cash register. Second, **explicit memory** includes the knowledge of facts and events. This type is said to be declarative as it can be deliberately accessed. It includes **semantic memory** or memory of facts such as what the definition of semantic memory is and **episodic memory** or the memory of a personally experienced event. Again, in the case of either semantic or episodic memory you must declare it. The knowledge is not automatic.

The **serial position effect** states that we recall information falling at the beginning (called *primary*) and end (called *recency*) of a list better than the information in the middle. Think about the most recent lecture you attended. What do you remember best? Likely, you remember what the professor said when class started such as if he/she made a few quick announcements or did a review of previously covered material and at the end in terms of final comments or a summary of new material. We remember the information presented first likely since it has had time to make its way into LTM because we could rehearse it (Rundus, 1971). As for the end of a list, we likely recall it because it is still in STM and accessible to us (Glanzer & Cunitz, 1966).

LTM includes four main steps - encoding, consolidation, storage, and retrieval. First, **encoding** is when we pay attention to and take in information that can then be processed or moved to LTM. This processing is either *automatic* or done with little effort such as remembering what we had for lunch today or is *effortful* and requires us to commit cognitive resources such as remembering the vocabulary (bolded terms) in this module.

According to the **levels of processing theory** (Craik & Lockhart, 1972), our memory is dependent on the depth of processing that information receives. It can be *shallow* or not involving any real attention to meaning such as saying the phone number of a person you just met at a party repeatedly or is *deep* indicating you pay close attention to the information and apply some type of meaning to it.

The next step in the process is **consolidation** or when we stabilize and solidify a memory (Muller & Pilzecker, 1900). Sleep is important for consolidation and is the reason why studying all night before a test the next day really does not help much (Gais, Lucas, & Born, 2006). The third step is **storage** and involves creating a permanent record of the information. This record has to be logically created so that we can find the information later and in the final part of the process called **retrieval**.

13.3.3. Memory Errors and Forgetting

In his book, "The Seven Sins of Memory: How the Mind Forgets and Remembers," Schacter (2002) outlines seven major categories of memory errors broken down into three sins of *omission* or forgetting and four sins of *commission* or distortions in our memories.

The sins of omission include:

- **Transience** or when our memories decrease in accessibility over time

- **Absent-mindedness** or when we forget to do things or have a lapse of attention such as not remembering where we put our keys
- **Blocking** or when we experience the tip-of-the-tongue phenomena and just cannot remember something. The stored information is temporarily inaccessible.

The sins of commission include:

- **Suggestibility** or when false memories are created due to deception or leading questions.
- **Bias** or when current knowledge, beliefs, and feelings skew our memory of past events such as only remembering the bad times and not the good ones after a relationship has come to a tragic end.
- **Persistence** or when unwanted memories continue and are not forgotten such as in the case of PTSD.
- **Misattribution** or when we believe a memory comes from one source when it really came from another source.

For more on these sins, please visit: <https://www.apa.org/monitor/oct03/sins.aspx>

Forgetting can also occur due to **amnesia** or a condition in which an individual is unable to remember what happened either shortly before (retrograde) or after (anterograde) a head injury or due to **interference** or when information that is similar to other information interferes in either storage or retrieval. Interference can be *proactive* as when old information interferes with new or *retroactive* in which new information interferes with old. Proactive interference explains why students have trouble understanding the concepts of positive and negative correlations and positive and negative reinforcement/punishment. Our previous education taught us that positive implies something good and negative something bad. Our new learning shows that positive can mean moving in the same direction and negative means moving in opposite directions as correlations show, or that positive means giving and negative means taking away in respects to reinforcement and punishment. Again, our previous learning interferes with new learning. When you take an abnormal psychology class you will see a third use of positive and negative in relation to the symptoms of schizophrenia. No symptom of this disease is good so the words positive and negative have no affective connotation yet again, but this pervious learning will make our new understanding a bit more challenging to gain.

All students struggle with test taking from time to time and this usually centers on how they go about studying for exams. Below are some websites with useful tips for studying, and some of the strategies have been mentioned already in Section 13.3. Enjoy.

- <https://academictips.org/study-skills/20-ways-to-improve-your-memory/>
- <https://www.oxford-royale.co.uk/articles/memory-tricks-exam-success.html>
- <https://www.collegeraptor.com/find-colleges/articles/tips-tools-advice/9-simple-brain-hacks-to-improve-your-memory/>

13.4. PROBLEM SOLVING: MOTIVATED TO FIND SOLUTIONS

Section Learning Objectives

- Define problems.
- Describe insight learning.
- Define and exemplify functional fixedness.

Let's face it. Hardly anything in life runs smoothly. Even with the best laid plan and clearest goals we can formulate, success can be elusive. We might even be unsure how to proceed or to solve what are called **problems** or when we cannot achieve a goal due to an obstacle that we are unsure how to overcome. In Section 13.1 we discussed Gestalt principles of perceptual organization but in this section, we focus on what they said about problem solving. Simply, when it comes to problem solving, the Gestalt psychologists said that we had to proceed from the whole problem down to its parts. How so? Kohler studied the problem-solving abilities of chimpanzees and used simple props such as the bars of the cages, bananas, sticks, and a box. Chimps were placed in a cage with bananas hanging over head. They could use any prop they needed to get them, but no one prop alone would suffice. The chimps had to figure out what combination of props would aid them in getting the bananas. At first, they did not do well but then out of nowhere saw the solution to the problem. He called this **insight learning** or the spontaneous understanding of relationships. The chimps had to look at the whole situation and the relationships among stimuli, or to restructure their perceptual field, before the solution to the problem could be seen.

One obstacle to problem solving is what is called **functional fixedness** or when we focus on a typical use or familiar function of an object. Duncker (1945) demonstrated this phenomenon using what he called the candle problem. Essentially, participants were given candles, tacks, and matches in a matchbox and were asked to mount a candle on a vertical corkboard attached to the wall such that it would not drip wax on the floor. To successfully complete the task, the participant must realize that the matchbox can be used as a support and not just a container. In his study, Duncker presented one group with small cardboard boxes containing the materials and another group with all the same materials but not in the boxes (they were sitting beside the boxes). The group for which the materials were in the boxes found the task more difficult than the group for which the materials were outside. In the case of

the latter, these participants were able to see the box as not just a container but as another tool to use to solve the problem.

As you can see from the candle problem, and other related problem-solving tasks, we sometimes have to think outside of the box or to demonstrate *creativity*. This is called **divergent thinking** or thinking that involves more than one possible solution and that is open-ended. Part of the open-endedness is coming up with ideas on how to solve the problem, which we call *brainstorming*. Really, any idea could have merit so just saying whatever comes to mind is important.

13.5. Reasoning: Motivated to Make Good Decisions

Section Learning Objectives

- Differentiate deductive from inductive reasoning.
- Define heuristics and describe types.
- Outline errors we make when reasoning.

13.5.1. Types of Reasoning

Though you are sitting in a college classroom now, how did you get there? Did you have to choose between two or more universities? Did you have to debate which area to major in? Did you have to decide which classes to take this semester to fit your schedule? Did you have to decide whether you were talking, riding a bike, or taking the bus to school? Let's face it. That's what you thought I was asking in my question. No matter which question, you engaged in reasoning centered on making a good decision or judgement. There are two types of reasoning we will briefly discuss - formal or deductive and informal or inductive.

First, we use **formal** or **deductive reasoning** when the procedure needed to draw a conclusion is clear and only one answer is possible. This approach makes use of **algorithms** or a logical sequence of steps that always produces a correct solution to the problem. For instance, solve the following problem:

$$3x + 20 = 41$$

- Step 1 - Subtract 20 from both sides resulting in: $3x = 21$
- Step 2 - Divide each side by 3 resulting in $x = 7$
- Check your answer by substituting 7 for x in the original problem resulting in $21 + 20 = 41$ which is

correct.

Deductive reasoning also uses the **syllogism** which is a logical argument consisting of premises and a conclusion. For example:

- Premise 1 - All people die eventually.
- Premise 2 - I am a person.
- Conclusion - Therefore, I will die eventually.

Second, **informal** or **inductive reasoning** is used when there is no single correct solution to a problem. A conclusion may or may not follow from premises or facts. Consider the following:

- Observation - It has snowed in my town the past five years during winter.
- Conclusion - It will snow this winter.

Though it has snowed the past five years it may not necessarily this year. The conclusion does not necessarily follow from the observation. What might affect the strength of an inductive argument then? First, the number of observations is important. In our example, we are basing our conclusion on just five years of data. If the first statement said that it snowed the past 50 years during winter, then our conclusion would be much stronger. Second, we need to consider how representative our observations are. Since they are only about our town and our conclusion only concerns it, the observations are representative. Finally, we need to examine the quality of the evidence. We could include meteorological data from those five years showing exactly how much snow we obtained. If by saying it snowed we are talking only about a trace amount each year, though technically it did snow, this is not as strong as saying we had over a foot of snow during each year of the observation period.

13.5.2. Heuristics and Cognitive Errors

As noted in Module 1, the past can be used to motivated behavior and the same is true in terms of decision making. We use our past experiences as a guide or shortcut to make decisions quickly. These mental shortcuts are called **heuristics**. Though they work well, they are not fool proof. First, the **availability heuristic** is used when we make estimates about how often an event occurs based on how easily we can remember examples (Tversky & Kahneman, 1974). The easier we can remember examples, the more often we think the event occurs. This sounds like a correlation between events and is. The problem is that the correlation may not actually exist, called an **illusory correlation**.

Another commonly used heuristic is the **representative heuristic** or believing something comes from a larger category based on how well it represents the properties of the category. It can lead to the **base rate fallacy** or when we overestimate the chances that some thing or event has a rare property, or we underestimate that something has a common property.

A third heuristic is the **affect heuristic** or thinking with our heart and not our head. As such, we are driven by emotion and not reason. Fear appeals are an example. Being reminded that we can die from lung cancer if we smoke may fill us with dread.

In terms of errors in reasoning, we sometimes tend to look back over past events and claim that we knew it all along. This is called the **hindsight bias** and is exemplified by knowing that a relationship would not last after a break up. **Confirmation bias** occurs when we seek information and arrive at conclusions that confirm our existing beliefs. If we are in love with someone we will only see their good qualities but after a break up, we only see their negative qualities. Finally, **mental set** is when we attempt to solve a problem using what worked well in the past. Of course, what worked well then may not now and so we could miss out on a solution to the problem. Functional fixedness, discussed in Section 13.4, is an example of this. Recall from Module 6 that when conducting a functional assessment, we figure out the antecedents leading to, and the consequences maintaining, a problem behavior. But we also figure out if there have been previous interventions that worked or did not work. Though a specific strategy worked in the past does not mean it will in the future and one that did not work then may work now. This represents mental set, especially within self-modification.

13.6. MOTIVATED TO LEARN...AND AT TIMES, UNLEARN/RELEARN

Section Learning Objectives

- Define learning.
- Outline the two main forms of learning and types occurring under each.
- Clarify what nonassociative learning is and its two forms.
- Clarify the importance of Pavlov's work.
- Describe how respondent behaviors work.
- Describe Pavlov's classic experiment, defining any key terms.
- Explain how fears are both learned and unlearned in respondent conditioning.
- Define operant conditioning.
- Contrast reinforcement and punishment.
- Clarify what positive and negative mean.
- Outline the four contingencies of behavior.
- Distinguish primary and secondary reinforcers.
- List and describe the five factors on the effectiveness of reinforcers.
- Contrast continuous and partial/intermittent reinforcement.
- List the four main reinforcement schedules and exemplify each.

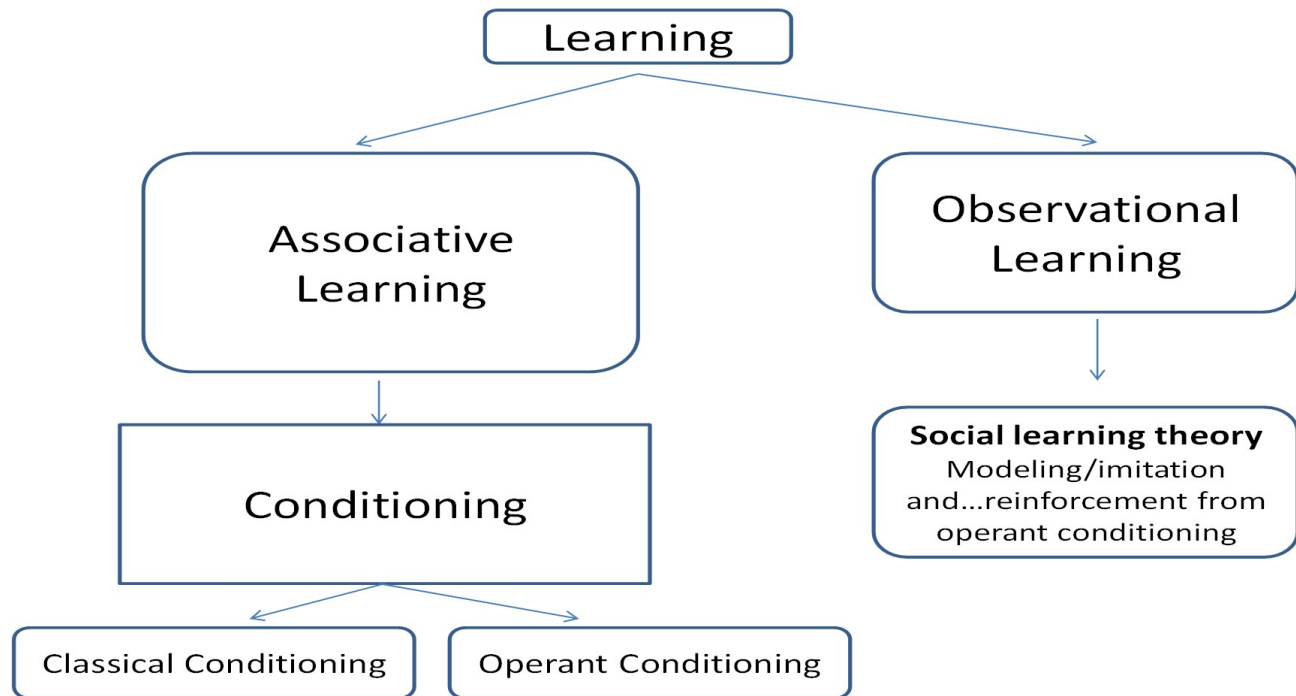
- Define extinction.
- Clarify which type of reinforcement extinguishes quicker.
- Define extinction burst.
- Define spontaneous recovery.
- Differentiate observational and enactive learning.
- Describe Bandura's classic experiment.
- Clarify how observational learning can be used in behavior modification

13.6.1. Defining Terms

Our attention now turns to the cognitive process called learning. You have already used this cognitive ability numerous times in the course as you learned the content from Modules 1-12. This process is no different in Module 13, the final two modules, or what you are doing for other classes. So what is learning? **Learning** is any relatively permanent change in behavior due to experience and practice. The key part of this definition is the word *relatively*. Nothing is set in stone and what is learned can be unlearned. Consider a fear for instance. Maybe a young baby enjoys playing with a rat, but each time the rat is present a loud sound occurs. The sound is frightening for the child and after several instances of the sound and rat being paired, the child comes to expect a loud sound at the sight of the rat, and cries. What has occurred is that an association has been realized, stored in long term memory, and retrieved to working memory when a rat is in view. The memory of the loud sound has been retained and retrieved in the future when the rat is present. But, memories change. With time, and new learning, the child can come to see rats in a positive light and replace the existing scary memory with a pleasant one. This will affect future interactions with white rats.

Take a look at Figure 13.1 below. Notice that learning occurs in two main ways - associative learning and observational learning. **Associative learning** is when we link together two pieces of information sensed from our environment. **Conditioning**, as a type of associative learning, is when two events are linked. This leads to two types of conditioning - *classical/respondent/Pavlovian* or the linking together of type types of stimuli and *operant* or the linking of response and consequence. On the other side is *observational learning* or learning by observing the world around us. Though under it is *social learning theory*, please note that this form of learning combines observational learning and operant conditioning. More on all of these later.

Figure 13.1. Types of Learning



To be complete, there is a third type of learning called **nonassociative learning**. In this type of learning there is no linking of information or observing the actions of those around you. It can occur in two forms. First, **habituation** occurs when we simply *stop responding* to repetitive and harmless stimuli in our environment such as a fan running in your laptop as you work on a paper. If there is a slight change in the stimulus, however, we shift our attention back to it, which is called the **orienting response**. Second is what is called **sensitization** or occurs when our reactions are *increased* due to a strong stimulus, such as an individual who experienced a mugging. Both types of nonassociative learning could be regarded as very basic examples of learning—the learning for which we are prewired.

13.6.2. Respondent Conditioning

You have likely heard about Pavlov and his dogs but what you may not know is that this was a discovery made accidentally. Ivan Petrovich Pavlov (1906, 1927, 1928), a Russian physiologist, was interested in studying digestive processes in dogs in response to being fed meat powder. What he discovered was the dogs would salivate even *before* the meat powder was presented. They would salivate at the sound of a bell, footsteps in the hall, a tuning fork, or the presence of a lab assistant. Pavlov realized there were some stimuli that automatically elicited responses (such as salivating to meat powder) and those that had to be paired with these automatic associations for the animal or person to respond to it (such as

salivating to a bell). Armed with this stunning revelation, Pavlov spent the rest of his career investigating the learning phenomenon.

The important thing to understand is that not all behaviors occur due to reinforcement and punishment as operant conditioning says. In the case of respondent conditioning, antecedent stimuli exert complete and automatic control over some behaviors. We see this in the case of reflexes. When a doctor strikes your knee with that little hammer it extends out automatically. You do not have to do anything but watch. Babies will root for a food source if the mother's breast is placed near their mouth. If a nipple is placed in their mouth, they will also automatically suck, as per the sucking reflex. Humans have several of these reflexes though not as many as other animals due to our more complicated nervous system.

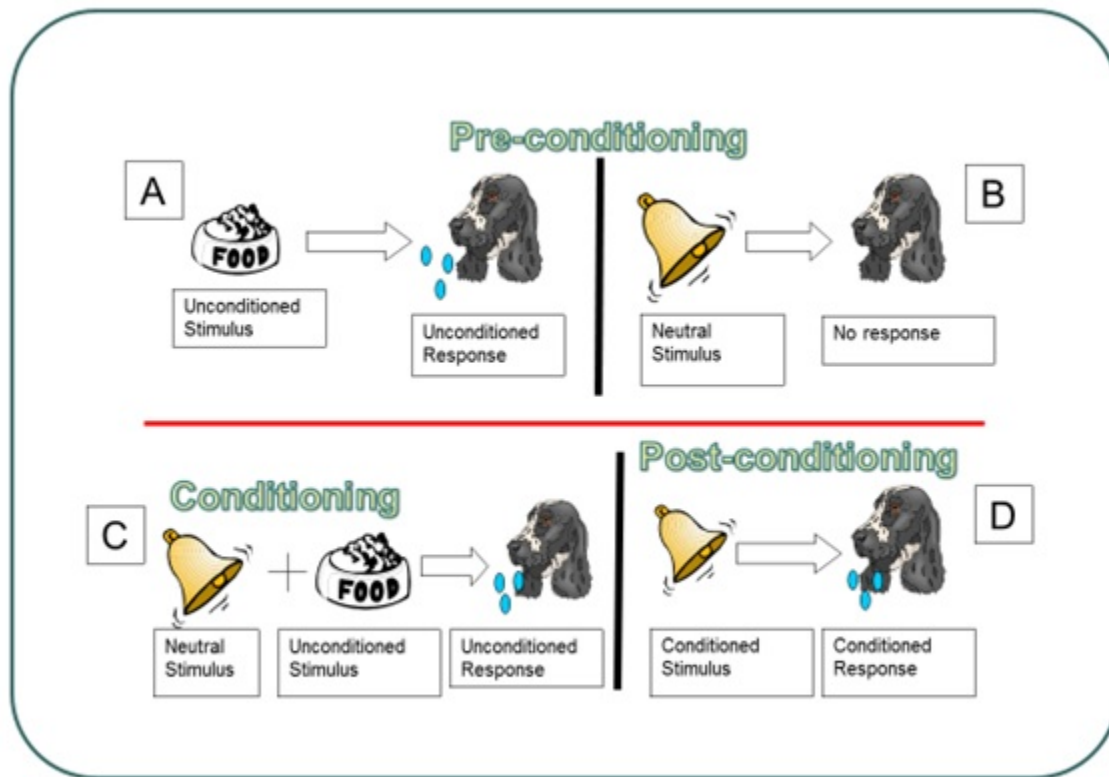
Respondent conditioning occurs when we link a previously neutral stimulus with a stimulus that is unlearned or inborn, called an unconditioned stimulus. In respondent conditioning, learning occurs in three phases: preconditioning, conditioning, and postconditioning. See Figure 13.2 for an overview of Pavlov's classic experiment.

13.6.2.1. Preconditioning. Notice that preconditioning has both an A and a B panel. Really, all this stage of learning signifies is that some learning is already present. There is no need to learn it again as in the case of primary reinforcers and punishers in operant conditioning. In Panel A, food makes a dog salivate. This does not need to be learned and is the relationship of an unconditioned stimulus (UCS) yielding an unconditioned response (UCR). Unconditioned means unlearned. In Panel B, we see that a neutral stimulus (NS) yields nothing. Dogs do not enter the world knowing to respond to the ringing of a bell (which it hears).

13.6.2.2. Conditioning. Conditioning is when learning occurs. Through a pairing of neutral stimulus and unconditioned stimulus (bell and food, respectively) the dog will learn that the bell ringing (NS) signals food coming (UCS) and salivate (UCR). The pairing must occur more than once so that needless pairings are not learned such as someone farting right before your food comes out and now you salivate whenever someone farts (...at least for a while. Eventually the fact that no food comes will extinguish this reaction but still, it will be weird for a bit).

13.6.2.3. Postconditioning. Postconditioning, or *after* learning has occurred, establishes a *new* and not naturally occurring relationship of a conditioned stimulus (CS; previously the NS) and conditioned response (CR; the same response). So, the dog now reliably salivates at the sound of the bell because he expects that food will follow, and it does.

Figure 13.2. Pavlov's Classic Experiment



13.6.3. Operant Conditioning

Operant conditioning is a type of associate learning which focuses on consequences that follow a response or behavior that we make (anything we do, say, or think/feel) and whether it makes a behavior more or less likely to occur.

13.6.3.1. Contingencies of reinforcement. The basis of operant conditioning is that you make a response for which there is a consequence. Based on the consequence you are more or less likely to make the response again. This section introduces the term contingency. A **contingency** is when one thing occurs due to another. Think of it as an If-Then statement. If I do X then Y will happen. For operant conditioning this means that if I make a behavior, then a specific consequence will follow. The events (response and consequence) are linked in time.

What form do these consequences take? There are two main ways they can present themselves.

- **Reinforcement** - Due to the consequences, a behavior/response is more likely to occur in the future. It is strengthened.
- **Punishment** - Due to the consequence, a behavior/response is less likely to occur in the future. It is weakened.

Reinforcement and punishment can occur as two types - positive and negative. These words have no affective connotation to them meaning they do not imply good or bad. *Positive* means that you are giving something - good or bad. *Negative* means that something is being taken away - good or bad. Check out Figure 13.3 for how these contingencies are arranged.

Figure 13.3. Contingencies in Operant Conditioning

	Some “ Bad ” Thing	Some “ Good ” Thing
Giving	Positive Punishment	Positive Reinforcement
Taking Away	Negative Reinforcement	Negative Punishment

Let’s go through each:

- **Positive Punishment (PP)** - If something bad or aversive is given or added, then the behavior is less likely to occur in the future. If you talk back to your mother and she slaps your mouth, this is a PP. Your response of talking back led to the consequence of the aversive slap being delivered or given to your face.
- **Positive Reinforcement (PR)** - If something good is given or added, then the behavior is more likely to occur in the future. If you study hard and earn, or are given, an A on your exam, you will be more likely to study hard in the future.
- **Negative Reinforcement (NR)** - This is a tough one for students to comprehend because the terms don’t seem to go together and are counterintuitive. But it is really simple and you experience NR all the time. This is when something bad or aversive is taken away or subtracted due to your actions, making it that you will be more likely to make the same behavior in the future when some stimuli presents itself. For instance, what do you do if you have a headache? You likely answered take Tylenol. If you do this and the headache goes away, you will take Tylenol in the future when you have a headache. NR can either result in current escape behavior or future avoidance behavior. What does this mean? *Escape* occurs when we are presently experiencing an aversive event and want it to end. We make a behavior and if the aversive event, like the headache, goes away, we will

repeat the taking of Tylenol in the future. This future action is an *avoidance* event. We might start to feel a headache coming on and run to take Tylenol right away. By doing so we have removed the possibility of the aversive event occurring and this behavior demonstrates that learning has occurred.

- **Negative Punishment (NP)** – This is when something good is taken away or subtracted making a behavior less likely in the future. If you are late to class and your professor deducts 5 points from your final grade (the points are something good and the loss is negative), you will hopefully be on time in all subsequent classes.

13.6.3.2. Primary vs. secondary (conditioned). The type of reinforcer or punisher we use is important. Some are naturally occurring while some need to be learned. We describe these as primary and secondary reinforcers and punishers. *Primary* refers to reinforcers and punishers that have their effect without having to be learned. Food, water, temperature, and sex, for instance, are primary reinforcers while extreme cold or hot or a punch on the arm are inherently punishing. A story will illustrate the latter. When I was about 8 years old I would walk up the street in my neighborhood saying, “I’m Chicken Little and you can’t hurt me.” Most ignored me but some gave me the attention I was seeking, a positive reinforcer. So I kept doing it and doing it until one day, another kid was tired of hearing about my other identity and punched me in the face. The pain was enough that I never walked up and down the street echoing my identity crisis for all to hear. This was a positive punisher and did not have to be learned. That was definitely not one of my finer moments in life.

Secondary or conditioned reinforcers and punishers are not inherently reinforcing or punishing, but must be learned. An example was the attention I received for saying I was Chicken Little. Over time I learned that attention was good. Other examples of secondary reinforcers include praise, a smile, getting money for working or earning good grades, stickers on a board, points, getting to go out dancing, and getting out of an exam if you are doing well in a class. Examples of secondary punishers include a ticket for speeding, losing television or video game privileges, being ridiculed, or a fee for paying your rent or credit card bill late. Really, the sky is the limit with reinforcers in particular.

13.6.3.3. Factors affecting the effectiveness of reinforcers and punishers. The four contingencies of behavior can be made to be more or less effective by taking a few key steps. These include:

- It should not be surprising to know that the quicker you deliver a reinforcer or punisher after a response, the more effective it will be. This is called *immediacy*. Don’t be confused by the word. If you notice, you can see immediately in it. If a person is speeding and you ticket them right away, they will stop speeding. If your daughter does really well on her spelling quiz, and you take her out for ice cream after school, she will want to do better.
- The reinforcer or punisher should be unique to the situation. So, if you do well on your report card, and your parents give you \$25 for each A, and you *only* get money for school performance, the secondary reinforcer of money will have an even greater effect. This ties back to our discussion of

contingency.

- But also, you are more likely to work harder for \$25 an A than you are \$5 an A. This is called *magnitude*. Premeditated homicide or murder is another example. If the penalty is life in prison and possibly the death penalty, this will have a greater effect on deterring the heinous crime than just giving 10 years in prison with the chance of parole.
- At times, events make a reinforcer or punisher more or less reinforcing or punishing. We call these *motivating operations* and they can take the form of an establishing or an abolishing operation. If we go to the store when hungry or in a state of *deprivation*, food becomes even more reinforcing and we are more likely to pick up junk food. This is an *establishing operation* and is when an event makes a reinforcer or punisher more potent and so more likely to occur. What if you went to the grocery store full or in a state of *satiation*? In this case, junk food would not sound appealing and you would not buy it and throw your diet off. This is an *abolishing operation* and is when an event makes a reinforcer or punisher less potent and so less likely to occur. An example of a punisher is as follows: If a kid loves playing video games and you offer additional time on Call of Duty for completing chores both in a timely fashion and correctly, this will be an establishing operation and make Call of Duty even more reinforcing. But what if you offer a child video game time for doing those chores and he or she does not like playing them? This is now an abolishing operation and the video games are not likely to induce the behavior you want.
- The example of the video games demonstrates establishing and abolishing operations, but it also shows one very important fact - all people are different. Reinforcers will motivate behavior. That is a universal occurrence and unquestionable. But the same reinforcers will not reinforce all people. This shows diversity and *individual differences*. Before implementing any type of behavior modification plan, whether on yourself or another person, you have to make sure you have the right reinforcers and punishers in place.

Alright. Now that we have established what contingencies are, let's move to a discussion of when we actually reinforce.

13.6.3.4. Schedules of reinforcement. In operant conditioning, the rule for determining when and how often we will reinforce a desired behavior is called the **reinforcement schedule**. Reinforcement can either occur *continuously* meaning every time the desired behavior is made the person or animal will receive some reinforcer, or *intermittently/partially* meaning reinforcement does not occur with every behavior. Our focus will be on partial/intermittent reinforcement.

Figure 13.4. Key Components of Reinforcement Schedules

Two Key Components

1. Fixed Variable	or	Reinforcement occurs at a set rate Rate of reinforcement changes
2. Ratio Interval	or	The number of correct responses Time elapsed between correct responses

Figure 13.4. shows that there are two main components that make up a reinforcement schedule - when you will reinforce and what is being reinforced. In the case of when, it will be either fixed or at a set rate, or variable and at a rate that changes. In terms of what is being reinforced, we will either reinforce responses or time. These two components pair up as follows:

- **Fixed Ratio schedule (FR)** - With this schedule, we reinforce some set number of responses. For instance, every twenty problems (fixed) a student gets correct (ratio), the teacher gives him an extra credit point. A specific behavior is being reinforced - getting problems correct. Note that if we reinforce each occurrence of the behavior, the definition of continuous reinforcement, we could also describe this as a FR1 schedule. The number indicates how many responses have to be made and in this case it is one.
- **Variable Ratio schedule (VR)** - We might decide to reinforce some varying number of responses such as if the teacher gives him an extra credit point after finishing between 40 and 50 problems correctly. This is useful after the student is obviously learning the material and does not need regular reinforcement. Also, since the schedule changes, the student will keep responding in the absence of reinforcement.
- **Fixed Interval schedule (FI)** - With a FI schedule, you will reinforce after some set amount of time. Let's say a company wanted to hire someone to sell their products. To attract someone, they could offer to pay them \$10 an hour 40 hours a week and give this money every two weeks. Crazy idea but it could work. J Saying the person will be paid *every* indicates fixed, and *two weeks* is time or interval. So, FI. How might knowing the timing of your paychecks be motivating?
- **Variable Interval schedule (VI)** - Finally, you could reinforce someone at some changing amount of time. Maybe they receive payment on Friday one week, then three weeks later on Monday, then two days later on Wednesday, then eight days later on Thursday. Etc. This could work, right? Not for a job but maybe we could say we are reinforced on a VI schedule if we are. An employer could decide to give small bonuses to its employees at some varying amount of time. You might receive

the bonus today and then again in three months and then in 2 weeks after that. The schedule of when to reinforce, or provide the bonus, varies and so employees will work hard not knowing when the next reinforcer will come. Again, how is this motivating?

13.6.3.5. Extinction and spontaneous recovery. We now discuss two properties of operant conditioning - extinction and spontaneous recovery. First, **extinction** is when something that we do, say, think/feel has not been reinforced for some time. As you might expect, the behavior will begin to weaken and eventually stop when this occurs. Does extinction just occur as soon as the anticipated reinforcer is not there? The answer is yes and no, depending on whether we are talking about continuous or partial reinforcement. With which type of reinforcement would you expect a person to stop responding to immediately if reinforcement is not there?

Do you suppose continuous? Or partial?

The answer is continuous. If a person is used to receiving reinforcement every time the correct behavior is made and then suddenly no reinforcer is delivered, he or she will cease the response immediately. Obviously then, with partial, a response continues being made for a while. Why is this? The person may think the schedule has simply changed. 'Maybe I am not paid weekly now. Maybe it changed to biweekly and I missed the email.' Due to this we say that intermittent or partial reinforcement shows *resistance to extinction*, meaning the behavior does weaken, but gradually.

As you might expect, if reinforcement "mistakenly" occurs after extinction has started, the behavior will re-emerge. Consider your parents for a minute. To stop some undesirable behavior you made in the past surely they took away some privilege. I bet the bad behavior ended too. But did you ever go to your grandparent's house and grandma or grandpa, or worse, BOTH..... took pity on you and let you play your video games for an hour or two (or something equivalent)? I know my grandmother used to. What happened to that bad behavior that had disappeared? Did it start again and your parents could not figure out why? Don't worry. Someday your parents will get you back and do the same thing with your kid(s). J

When extinction first occurs, the person or animal is not sure what is going on and actually begins to make the response more often (frequency), longer (duration), and more intensely. This is called an **extinction burst**. We might even see novel behaviors such as aggression. I mean. Who likes having their privileges taken away? That will likely create frustration which can lead to aggression.

One final point about extinction is important. You must know what the reinforcer is and be able to eliminate it. Say your child bullies other kids at school. Since you cannot be there to stop the behavior,

and most likely the teacher cannot be either if done on the playground at recess, the behavior will continue. Your child will continue bullying because it makes him or her feel better about themselves (a PR).

With all this in mind, you must have wondered if extinction is the same as punishment. With both, you are stopping an undesirable behavior, correct? Yes, but that is the only similarity they share. Punishment reduces unwanted behavior by either giving something bad or taking away something good. Extinction is simply when you take away the reinforcer for the behavior. This could be seen as taking away something good, but the good in punishment is not usually what is reinforcing the bad behavior. If a child misbehaves (the bad behavior) for attention (the PR), then with extinction you would not give the PR (meaning nothing happens) while with punishment, you might slap his or her behind (a PP) or taking away tv time (an NP).

You might have wondered if the person or animal will try to make the response again in the future even though it stopped being reinforced in the past. The answer is yes and is called **spontaneous recovery**. One of two outcomes is possible. First, the response is made and nothing happens. In this case extinction continues. Second, the response is made and a reinforcer is delivered. The response re-emerges. Consider a rat that has been trained to push a lever to receive a food pellet. If we stop delivering the food pellets, in time, the rat will stop pushing the lever. The rat will push the lever again sometime in the future and if food is delivered, the behavior spontaneously recovers.

13.6.4. Observational Learning

13.6.4.1. Learning by watching others. There are times when we learn by simply watching others. This is called **observational learning** and is contrasted with **enactive learning**, which is learning by doing. There is no firsthand experience by the learner in observational learning unlike enactive. As you can learn desirable behaviors such as watching how your father bags groceries at the grocery store (I did this and still bag the same way today) you can learn undesirable ones too. If your parents resort to alcohol consumption to deal with the stressors life presents, then you too might do the same. What is critical is what happens to the model in all of these cases. If my father seems genuinely happy and pleased with himself after bagging groceries his way, then I will be more likely to adopt this behavior. If my mother or father consumes alcohol to feel better when things are tough, and it works, then I might do the same. On the other hand, if we see a sibling constantly getting in trouble with the law then we may not model this behavior due to the negative consequences.

13.6.4.2. Bandura's classic experiment. Albert Bandura conducted the pivotal research on observational learning and you likely already know all about it (Bandura, Ross, & Ross, 1961; Bandura, 1965). In Bandura's experiment, children were first brought into a room to watch a video of an adult playing nicely or aggressively with a Bobo doll. This was a model. Next, the children are placed in a room with a lot of toys in it. In the room is a highly prized toy but they are told they cannot play with it.

All other toys are fine and a Bobo doll is in the room. Children who watched the aggressive model behaved aggressively with the Bobo doll while those who saw the nice model, played nice. Both groups were frustrated when deprived of the coveted toy.

13.6.4.3. Observational learning and behavior modification. Bandura said if all behaviors are learned by observing others and we model our behaviors on theirs, then undesirable behaviors can be altered or relearned in the same way. *Modeling* techniques are used to change behavior by having subjects observe a model in a situation that usually causes them some anxiety. By seeing the model interact nicely with the fear evoking stimulus, their fear should subside. This form of behavior therapy is widely used in clinical, business, and classroom situations. In the classroom, we might use modeling to demonstrate to a student how to do a math problem. In fact, in many college classrooms this is exactly what the instructor does. In the business setting, a model or trainer demonstrates how to use a computer program or run a register for a new employee.

Module Recap

That concludes our look at cognitive process and how they motivate behavior. As we have discussed so far in this course, behavior is controlled by internal processes and so when we engage in motivated behavior, it is due to commands sent out to the body from the nervous system and endocrine system. It does not matter if the action we make is self-initiated or in response to an environmental stimulus. Module 14 covers internal process similar to this module but in relation to physiological processes such as efforts to reduce drives and homeostasis. I hope you enjoyed the discussion. One final module before we round things out.

Module 14: Motivation and Physiological Processes

Module Overview

Module 14 is our final content heavy module in the book. In Module 13 we examined motivated behavior and how it arises from cognitive processes. In this module we will continue that discussion but look at physiological processes to include biological drives and substance abuse.

Note to WSU Students: The topic of this module overviews what you would learn in PSYCH 372: Biological Basis of Behavior, PSYCH 265: Biopsychological Effects of Alcohol and Other Drugs, PSYCH 230: Human Sexuality, PSYCH 324: Psychology of Gender, and PSYCH 333: Abnormal Psychology at Washington State University.

Module Outline

- 14.1. Biological Drives: Motivated to Survive
- 14.2. Substance Abuse: Motivated by a Desire to Feel Better

Module Learning Outcomes

- Describe how we are motivated to maintain balance.
- Outline the biological drives of temperature, sleep, hunger, thirst, and sexual behavior.
- Describe how substances can be used to motivate a desire to feel better.

14.1. BIOLOGICAL DRIVES: MOTIVATED TO SURVIVE

Section Learning Objectives

- Define and exemplify homeostasis.

- Define thermoregulation and list types of motivated behavior that affect body temperature.
- Identify structures and mechanisms that regulate sleep.
- Contrast hunger and satiety.
- Describe internal and external signals affecting hunger.
- Describe the two types of thirst.
- Describe structures controlling sexual behavior.
- Outline the sexual response pattern.

14.1.1. Homeostasis

Consider what steps you take to obtain sustenance when hungry, to find water when thirsty, to warm up if cold, or to rest when sleepy. Whatever behaviors are involved, you engage in them almost automatically, and so much so that you likely take for granted how much internal forces affect your daily behavior. Efforts to correct such deficiencies show the work of biological drives (the push of motivation) and attempts to maintain **homeostasis** or balance within the body. Really, what we are trying to do is maintain an optimal or ideal level for various biological processes such as our body temperature, glucose levels in the blood, blood pressure, or sleep. How so?

Actually, you sort of know how this works already, and especially so if you have a thermostat in your home. You set it to the temperature you want, say 72 degrees. This is the *ideal* temperature you want and serves as a set point. The thermostat compares the ideal temperature to the actual temperature. If the house is at 69 degrees, then the thermostat will turn on the heat and keep it on until the temperature rises to our set point of 72. At that point, it shuts off. If the house is at 75 degrees, the thermostat initiates action to lower the temperature by turning on the air condition. If actual and ideal are the same, no action is needed. Your body does the same thing. How so? Let's examine a few drives and how homeostasis is maintained.

14.1.2. Temperature

Since our example dealt with temperature it seems fitting to start here. Maintaining a set core internal temperature is called **thermoregulation**. For the average person, the core temperature falls between 98 and 100 degrees and going to the extremes can have detrimental effects. If your temperature falls to 95 degrees, you experience hypothermia which can lead to cardiac arrest, brain damage, and potentially death. A rise in temperature to about 107.6 degrees Fahrenheit can cause brain damage or death.

Body temperature can be affected by having a fever, working out, using drugs, digesting food after dinner, or drinking alcohol. Thermoregulation is controlled by the hypothalamus which sends signals out via the peripheral nervous system to your organs, glands, and muscles giving them instructions on

how to lower or raise your core temperature. This might include sweating or vasodilation to cool down and vasoconstriction and thermogenesis to heat up.

14.1.3. Sleep

Though we know that sleep is a necessary requirement for all human beings, and is essential for survival, the exact reason(s) is/are not as clear. We spend about one-third of our time sleeping. Several brain structures are involved in the regulation of sleep. First, the hypothalamus contains the **suprachiasmatic nucleus** (SCN) which is a cluster of cells that receives information about light exposure from the eyes and controls our behavioral rhythms. People with damage to this area sleep erratically during the day because their light-dark cycle and circadian rhythms are not in synch. During all stages of sleep but REM sleep, the **thalamus**, or sensory relay station, becomes quiet and allows you to tune out the external world. The **pineal gland** receives signals from the SCN and increases production of the hormone *melatonin*, which aids in sleeping once the lights are off.

Sleep is regulated by two internal biological mechanisms. First, **circadian rhythms** affect fluctuations in wakefulness, metabolism, body temperature, and the release of hormones. Specifically, they control the timing of sleep and lead you to feel sleepy at night. Second, sleep-wake homeostasis tracks how much sleep you need and gives the body a reminder to sleep after a certain amount of time. It also regulates sleep intensity.

How much sleep do you need? There is no magic number and in general, it is recommended that adults sleep 7-9 hours a night while babies sleep 16-18 hours a day and school-aged children and teens sleep about 9.5 hours.

For more on sleeping check out the following information published by the National Institute of Neurological Disorders and Stroke:

<https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep>

14.1.4. Hunger

The biological drive of **hunger**, or desiring to eat, relates to the end of this motivated behavior once we are full, called **satiety**. Basically, we eat because there is a deprivation in the amount of glucose in our blood to sustain activity and once we have restored that glucose level to its set point, hunger ends. In other words, we have achieved homeostasis again. The feeling of hunger is not pleasant and results in feeling shaky, lethargic, and possibly being sick to our stomach. We want to do something about this. So how do we know when to eat?

Signals arise from both the stomach (surprising, right?) and the blood, but the stomach plays less of a role than we might realize. We all have experienced hunger pangs or our stomach growling, or the feeling of being full especially after one of our main food holidays (Christmas, Easter, or Thanksgiving). These stomach indicators relate to being very hungry (i.e. being famished) or very full (i.e. stuffed) but that is about it.

What about other possible signals? I mentioned the blood and the brain receives information from the blood about levels of *glucose*, or sugar used by body cells for energy. When our glucose levels are low we are motivated to eat and restore these levels. The brain also regulates hunger through the action of the hormone *ghrelin* which increases appetite and *leptin* which reduces appetite. Other important hormones include *GLP-1* which reduces appetite and tells the pancreas to release insulin, *CCK* which improves digestion by reducing the rate at which food is emptied from the stomach and into the small intestine, *PPY* which causes satiety by being secreted into the bloodstream by the small intestine and then binding to receptor sites in the brain, and *neuropeptide Y* which leads to increased consumption of carbohydrates.

Though many areas of the brain are involved in the regulation of hunger, the **hypothalamus** plays a pivotal role. In terms of knowing when to start eating, the *lateral hypothalamus* is involved and if stimulated with an electrode, an animal that is in a state of satiation will begin eating. In terms of satiety, the *ventromedial hypothalamus* tells an animal to stop eating but if destroyed, overeating results. Finally, the *paraventricular nucleus* is involved in satiety as shown by stimulating it and in overeating if destroyed or damaged. It helps to regulate blood sugar levels.

In addition to these internal signals to eat, several external cues are important too. First, we sometimes eat not because we are hungry, but because it is time to eat. Time of day factors in such that most people eat at noon because our society has been told that we should eat then. Or we might eat on our lunch break at work whether we are hungry or not. Second, social factors play in. We may eat because our friends are doing so and don't want to be left out. Third, the sight of food, or its smell, may motivated us to eat. Fourth, to deal with life we sometimes engage in comfort eating as a tension reduction strategy, or to deal with stress (See Module 4). Fifth, but more so a cue as to what to eat, culture plays in. Some cultures find our eating of ground beef from cows to be appalling, as much as we find their eating of cats or dogs to be so. Sixth, and as mentioned already, we tend to overeat during certain times of the year such as holidays - Thanksgiving, Christmas, and Easter.

Going back to our discussion of behavioral change from Module 6, if we are trying to get in shape by reducing our caloric intake, we need to take into consideration temptations that could lead us to engage in undesirable or problem behavior. Social eating is one such example of eating when we are not actually hungry.

Note: A discussion of eating disorders is also relevant here but was discussed in Section 10.5.1.2 already. Please look at it again before moving on.

14.1.5. Thirst

There are two kinds of thirst that we can experience. Yes, two. If you eat a salty meal you experience the first type called **intracellular thirst**. Excessive salt, such as found in potato chips, causes fluid to be drawn out of our cells and as they “shrink” we become thirsty. No worries. If we drink water (nothing added to it such as the flavor aides) we can restore this deficiency. The second type of thirst occurs when we are sweating, have diarrhea, vomit, or are bleeding, and is called **extracellular thirst**. Essentially, water is lost from the fluid surrounding our cells and drinking a saline solution helps such as Gatorade or Powerade.

14.1.6. Sex

Sexual behavior is an interesting type of motivated behavior as it is not needed for survival in the same sense as hunger or thirst, but is needed for reproduction and continuation of the species. Understanding sexual behavior is important, as a 2017 survey conducted by the Centers for Disease Control and Prevention (CDC) of high school students shows:

- 40% of students said they had sexual intercourse
- 10% have had more than one sexual partner
- 30% had sexual intercourse during the previous 3 months and of this, 46% did not use a condom the last time they had sex and 14% did not use any method to prevent pregnancy.
- In terms of health outcomes, 21% of all new HIV diagnoses in the US in 2016 were people aged 13-24, half of the 20 million new STD cases in the US were people aged 15-24, and about 210,000 babies were born to girls aged 15-19 in 2016

Source: <https://www.cdc.gov/healthyyouth/sexualbehaviors/>

Human sexual behavior is activated by the sex hormones estrogens, progestins, and androgens. All three circulate in the blood of males and females but females have greater levels of the first two and males have higher levels of the last. Recall from Module 10 that during adolescence hormone levels rise and lead to increases in sexual desire and behavior.

According to Masters and Johnson (1966) there is a distinct pattern of physiological arousal for men and women, before, during, and after sexual activity, and called the **sexual response pattern**. How so? Phase 1 is *excitement* and is characterized by increased muscle tension, faster heart rate, the breasts becoming fuller and the nipples hardening, vaginal lubrication beginning, and the man secreting a lubricating liquid. Phase 2 is *plateau* and extends to the brink of orgasm and is an intensification of the changes began in phase 1. Phase 3 is *orgasm* and is the climax of the cycle but lasts only a few seconds. The uterus in women and the penis in men undergo rhythmic contractions, and in men results in the

ejaculation of semen. For men and women, the phase is intensely pleasurable and leads to a release of both physical and psychological tension. Phase 4 is *resolution* and now the body returns to its normal level of functioning. Swelled or erect body parts return to normal and sexual partners experience intimacy, fatigue, and a general sense of well-being. Men enter a *refractory period* during which they cannot achieve an orgasm again. How long this last depends on the man and the time lengthens with age.

14.2. SUBSTANCE ABUSE: MOTIVATED BY A DESIRE TO FEEL BETTER

Section Learning Objectives

- Define substances and substance abuse.
- Describe properties of substance abuse.
- Describe specific substances that can be used and abused.
- Describe the biological causes of substance-related and addictive disorders.
- Describe the cognitive causes of substance-related and addictive disorders.
- Describe the behavioral causes of substance-related and addictive disorders.
- Describe the sociocultural causes of substance-related and addictive disorders.

In this second section of Module 14, I want to discuss the issue of drug and substance abuse. At times, people choose to deal with life and all its stressor with drugs, alcohol, and/or cigarettes. Of course, they can also use comfort foods as has been discussed throughout this book. Taken together, these are tension reduction strategies, and all can become problematic if used to excess.

Please note that the content of Section 14.2.1 comes from Module 11 of *Abnormal Psychology*, 1st edition, by Alexis Bridley and Lee Daffin. If you wish to see the entire module, please visit:

(<https://opentext.wsu.edu/abnormal-psych/chapter/module-11-substance-related-and-addictive-disorders/>) and the rest of the book can be accessed through this link. Be advised I have done some editing and tailoring of this content to fit the current textbook, but the essence of the content and message is the same.

14.2.1. Substance Abuse

Substance-related disorders are among the most prevalent psychological disorders with roughly 100 million people in the United States reporting the use of an illegal substance sometime throughout their life (SAMHSA, 2014). While this disorder was previously classified as “drug abuse,” the evolvement of the disorder has sparked abuse of other substances such as alcohol, tobacco, and caffeine, thus better classifying the disorder as abuse of **substances**.

What are substances? **Substances** are any ingested materials that cause temporary cognitive, behavioral, and/or physiological symptoms within the individual. These changes that are observed directly after or within a few hours of ingestion of the substance are classified as **substance intoxication** (American Psychiatric Association, 2013). Substance intoxication symptoms vary greatly and are dependent on the type of substance ingested. Specific substances and their effects will be discussed later in the module.

Repeated use of these substances, or frequent substance intoxication can develop into a long-term problem known as **substance abuse**. Abuse occurs when an individual consumes the substance for an extended period of time or has to ingest large amounts of the substance to get the same effect a substance provided previously. The need to continually increase the amount of ingested substance is also known as **tolerance**. As tolerance builds, additional physical and psychological symptoms present, often causing significant disturbances in an individual’s personal and/or professional life. Individual’s with substance abuse often spend a significant amount of time engaging in activities that revolve around their substance use, thus spending less time in recreational activities that once consumed their time. Sometimes, there is a desire to reduce or abstain from substance use, however, cravings and **withdrawal** symptoms often prohibit this from occurring on one’s own attempts. Common withdrawal symptoms include but are not limited to: cramps, anxiety attacks, sweating, nausea, tremors, and hallucinations. Depending on the substance and the tolerance level, most withdrawal symptoms last anywhere from a few days to a week. For those with extensive substance abuse- or multiple substances being abused- withdrawal should be closely monitored in a hospital setting to avoid serious possible consequences such as seizures, stroke, or even death.

According to the DSM-5 (APA, 2013), an individual is diagnosed with *Substance Intoxication, Use, and/or Withdrawal* specific to the substance(s) the individual is ingesting. While there are some subtle differences in symptoms, particularly psychological, physical, and behavioral symptoms, the general diagnostic criteria for *Substance Intoxication, Use, and Withdrawal* remains the same across substances. Therefore, the general diagnostic criteria for *Substance Intoxication, Use, and Withdrawal* is reviewed below, with more specific details of psychological, physical, and/or behavioral symptoms in the Types of Substances Abused section.

For a diagnosis of *Substance Intoxication*, the individual must have recently ingested a substance (APA,

2013). Immediately following the ingestion of this substance, significant behavioral and/or psychological change is observed. In addition, physical and physiological symptoms present as a direct result of the substance ingested. As stated above, these behavioral, physical and physiological symptoms are dependent on the type of substance that is ingested and therefore, discussed in more detail within each substance category (i.e. depressants, stimulants, hallucinogens/cannabis/combo).

In order to meet criteria for *Substance Use Disorder*, an individual must experience significant impairment or distress over the course of 12-months due to their use of a substance (APA, 2013). Distress or impairment can be described as any of the following: inability to complete or lack of participation in work, school or home obligations/activities; increased time spent on activities obtaining, using, or recovering from substance use; impairment in social or interpersonal relationships; use of substance in a potentially hazardous situation; psychological problems due to recurrent substance abuse; craving for substance; an increase in the amount of substance used over time (i.e. tolerance); difficulty reducing the amount of substance used despite desire to reduce/stop using the substance; and/or withdrawal symptoms (APA, 2013). While the number of these symptoms may vary among individuals, only two symptoms are required to be present for a diagnosis of a *Substance Use Disorder*.

Finally, *Substance Withdrawal* is diagnosed when there is cessation or reduction of a substance that has been used for a long period of time. Individuals undergoing substance withdrawal will experience physiological and/or psychological symptoms within a few hours after cessation/reduction (APA, 2013). These symptoms cause significant distress or impairment in daily functioning. Similar to *Substance Intoxication*, physiological and/or psychological symptoms during substance withdrawal are often specific to the substance abused and are discussed in more detail within each substance category later in the module.

14.2.2. Types of Substances Abused

The substances that are most often abused can be divided into three categories based on how they impact one's physiological state: depressants, stimulants, and hallucinogens/cannabis/combo.

14.2.2.1. Depressants. Depressant substances such as alcohol, sedative-hypnotic drugs, and opioids, are known to have a depressing, or inhibiting effect on one's central nervous system; therefore, they are often used to alleviate tension and stress. Unfortunately, when used in large amounts, they can also impair an individual's judgment and motor activity.

While **alcohol** is one of the only legal (over the counter) substances we will discuss, it is also the most commonly consumed substance. According to the 2015 National Survey on Drug Use and Health, approximately 70% of individuals drank an alcoholic beverage in the last year and nearly 56% of individuals drank an alcoholic beverage in the past month (SAMHSA, 2015). While the legal age of consumption in the United States is 21, approximately 78% of teens report that they have drunk alcohol

at some point in their life (SAMHSA, 2013).

Despite the legal age of consumption, many college-aged students engage in binge or heavy drinking. In fact, 45% of college age students report engaging in binge drinking, with 14% engaging in binge drinking at least 5 days per month (SAMHSA, 2013). In addition to these high levels of alcohol consumption, college age students also engage in other behaviors such as skipping meals which can impact the rate of alcohol intoxication, as well as place them at risk for dehydration, blacking out, and developing alcohol induced seizures (Piazza-Gardner & Barry, 2013).

The “effective” substance of alcohol, *ethyl alcohol*, is a chemical that is absorbed quickly into the blood via the lining of the stomach and intestine. Once in the blood stream, ethyl alcohol travels to the central nervous system (i.e. brain and spinal cord) and produces *depressive* symptoms such as impaired reaction time, disorientation, and slurred speech. These symptoms are produced due to the ethyl alcohol binding to GABA receptors, thus preventing GABA from providing inhibitory messages and allowing the individual to relax (Filip et al., 2015).

The effect of ethyl alcohol in moderation allows for an individual to relax, engage more easily in conversation, and in general, produces a confident and happy personality. However, when consumption is increased or excessive in nature, the central nervous system is unable to adequately metabolize the ethyl alcohol, and negative effects begin to present. Symptoms such as blurred vision, difficulty walking, slurred speech, slowed reaction time, and sometimes, aggressive behaviors are observed.

The extent to which these symptoms present are directly related to the concentration of ethyl alcohol within the body, as well as the individual’s ability to metabolize the ethyl alcohol. There are a lot of factors that contribute to how quickly one’s body can metabolize ethyl alcohol. Food, gender, body weight, and medications are among the most common factors that affect alcohol absorption (NIAAA,1997). More specifically, recent consumption of food, particularly that high in fat and carbohydrates, slows the absorption rate of ethyl alcohol, thus reducing its effects. With regards to gender, women absorb and metabolize alcohol differently than man, likely due to the smaller amount of body water and the lower activity of an alcohol metabolizing enzyme in the stomach. Another factor related to gender is body weight- with individuals with more body mass metabolizing the alcohol at a slower rate than those who weigh less. Finally, various medications, both over the counter and prescription based can impact the livers ability to metabolize alcohol, thus impacting the severity of symptoms that present (NIAAA, 1997).

Sedative-Hypnotic drugs, more commonly known as **anxiolytic drugs**, have a calming and relaxing effect on individuals. When used at a clinically effective amount, they can have a sedative effect, thus making them an appropriate drug for treating anxiety related disorders. In the early 1900’s, **barbiturates** were introduced as the main sedative and hypnotic drug; however, due to their addictive nature, as well as respiratory distress when consumed in large amounts, they have been largely replaced by **benzodiazepines** which are considered a safer alternative as they have less addictive qualities (Filip et al., 2014)

Commonly prescribed benzodiazepines— Xanax, Ativan, and Valium—have a similar effect to alcohol as they too bind to the GABA receptors and increase GABA activity (Filip et al., 2014). This increase in GABA produces a sedative and calming effect. Benzodiazepines can be prescribed for both temporary (relief anxiety on flight or prior to surgery) or long-term use (generalized anxiety disorder). While they do not produce respiratory distress in large dosages like benzodiazepines, they can cause intoxication and addictive behaviors due to their effects on tolerance.

Opioids are naturally occurring, derived from the sap of the opium poppy. In the early 1800's, **morphine** was isolated from opium by German chemist Friedrich Wilhelm Adam Serturner. Due to its analgesic effect, it was named after the Greek god of dreams, Morpheus (Brownstein, 1993). Its popularity grew during the Civil War as it was the primary medication given to soldiers with battle injuries. Unfortunately, this is also when the addictive nature of the medication was discovered, as many soldiers developed "Soldier's Disease" as a response to tolerance of the drug (Casey, 1978).

In an effort to alleviate the addictive nature of morphine, **heroin** was synthesized by the German chemical company Bayer in 1898, and was offered in a cough suppressant (Yes, Bayer promoted Heroin). For years, heroin remained in cough suppressants as well as other pain reducers until it was discovered that heroin was actually more addictive than morphine. In 1917, Congress identified that *all* drugs derived from opium were addictive, thus banning the use of opioids in over the counter medications.

Opioids are unique in that they provide both euphoria and drowsiness. Tolerance to these drugs builds quickly, thus resulting in an increased need of the medication to produce desired effects. This rapid tolerance is also likely responsible for opioids highly addictive nature. Opioid withdrawal symptoms can range from restlessness, muscle pain, fatigue, anxiety, and insomnia. Unfortunately, these withdrawal symptoms, as well as intense cravings for the drug can persist for several months, with some reports up to years. Because of the intensity and longevity of these withdrawal symptoms, many individuals struggle to remain abstinent, and accidental overdoses are common (CDC, 2013).

The rise of abuse and misuse of opioid products in the early-to-mid 2000s is a direct result of the increased number of opioid prescription medications containing *oxycodone* and *hydrocodone* (Jayawant & Balkrishnana, 2005). The 2015 report estimated 12.5 million Americans were abusing prescription narcotic pain relievers in the past year (SAMHSA, 2016). In efforts to reduce the abuse of these medications, the FDA developed programs to educate prescribers about the risks of misuse and abuse of opioid medications.

14.2.2.2. Stimulants. The two most common types of stimulants abused are cocaine and amphetamines. Unlike depressants that reduce the activity of the central nervous system, stimulants have the opposite effect, increasing the activity in the central nervous system. Physiological changes that occur with stimulants are increased blood pressure, heart rate, pressured thinking/speaking, and rapid, often jerky behaviors. Because of these symptoms, stimulants are often used for their feelings of euphoria, to reduce appetite, and prevent sleep.

Similar to opioids, **cocaine** is extracted from a South American plant- the coca plant- and produces feelings of energy and euphoria. It is the most powerful natural stimulant known to date (Acosta et al., 2011). As stated, low doses can produce feelings of excitement, talkativeness, and euphoria; however, as the amount of ingested cocaine increases, physiological changes such as rapid breathing, increased blood pressure, and excessive arousal can be observed. The psychological and physiological changes from cocaine are due to an increase of *dopamine*, *norepinephrine* and *serotonin* in various brain structures (Haile, 2012; Hart & Ksir, 2014).

One key feature of cocaine use is the rapid high of *cocaine intoxication*, followed by the rapid letdown, or *crashing*, as the drug diminishes within the body. During the euphoric intoxication, individuals will experience poor muscle coordination, grandiosity, compulsive behavior, aggression, and possible hallucinations and/or delusions (Haile, 2012). Conversely, as the drug leaves the system, the individual will experience negative effects such as headaches, dizziness, and fainting (Acosta et al., 2011). These negative feelings often produce a negative feedback loop, encouraging individuals to ingest more cocaine to alleviate the negative symptoms. This also increases the change of accidental overdose.

Cocaine is unique in that it can be ingested various different ways. While cocaine was initially snorted via the nasal cavity, individuals found that if the drug was smoked or injected, it's effects were more powerful and longer lasting (Haile, 2012). The most common way cocaine is currently ingested is via **freebasing**, which involves heating cocaine with ammonia to extract the cocaine base. This method produces a form of cocaine that is almost 100 percent pure. Due to its low melting point, freebased cocaine is easy to smoke via a glass pipe. Inhaled cocaine is absorbed into the blood stream and brain within 10-15 seconds suggesting its effects are felt almost immediately (Addiction Centers of America).

Crack is a derivative of cocaine that is formed by combining cocaine with water and another substance (commonly baking soda) to create a solid structure that is then broken into smaller pieces. Because of this process, it requires very little cocaine to make crack, thus making it a more affordable drug. Coined for the crackling sound that is produced when it is smoked, it is also highly addictive, likely due to the fast-acting nature of the drug. While the effects of cocaine peak in 20-30 minutes and last for about 1-2 hours, the effects of crack peak in 3-5 minutes and last only for up to 60 minutes (Addiction Centers of America).

Amphetamines are manufactured in a laboratory setting. Currently, the most common amphetamines are prescription medications such as Ritalin, Adderall, and Dexedrine (prescribed for sleep disorders). These medications produce an increase in energy and alertness and reduce appetite when taken at clinical levels; however, when consumed at larger dosages, it can produce intoxication similar to psychosis, including violent behaviors. Due to the increased energy levels and appetite suppressant qualities, these medications are often abused by students studying for exams, athletes needing extra energy, and individuals seeking weight loss (Haile, 2012). Biologically, similar to cocaine, amphetamines effect the central nervous system by increasing the amount of dopamine, norepinephrine, and serotonin in the brain (Haile, 2012).

Methamphetamine, a derivative of amphetamine, is often abused due to its low cost and feelings of euphoria and confidence; however, it can have serious health consequences such as heart and lung damage (Hauer, 2010). Most commonly used intravenously or nasally, methamphetamine can also be eaten or heated to a temperature in which it can be smoked. The most notable effects of methamphetamine use are the drastic physical changes to one's appearance including significant teeth damage and facial lesions (Rusyniak, 2011).

While I'm sure you all are well aware of how **caffeine** is consumed, you may be surprised to learn that in addition to coffee, energy drinks, and soft drinks, caffeine can also be found in chocolate and tea. Because of the vast use of caffeine, it is the most widely consumed substance in the world, with approximately 90% of Americans consuming some type of caffeine *every day* (Fulgoni, Keast, & Lieberman, 2015). While caffeine is often consumed in moderate dosages, caffeine intoxication and withdrawal can occur. In fact, an increase in caffeine intoxication and withdrawal has been observed with the simultaneous popularity of energy drinks. Common energy drinks such as Monster and RedBull have nearly double the amount of caffeine of tea and coke (Bigard, 2010). While these drinks are commonly consumed by adults, a startling 30% of middle and high schoolers also report regular consumption of energy drinks to assist with academic and athletic responsibilities (Terry-McElrath, O'Malley, & Johnston, 2014). The rapid increase in caffeinated beverages has led to an increase in ER visits due to the intoxication effects (SAMHSA, 2013).

14.2.2.3. Hallucinogens/Cannabis/Combination. The final category includes both hallucinogens and cannabis- both of which produce sensory changes after ingestion. While hallucinogens are known for their ability to produce more severe delusions and hallucinations, cannabis also has the capability of producing delusions or hallucinations, however, this typically occurs only when large amounts of cannabis are ingested. More commonly, cannabis has been known to have stimulant and depressive effects, thus classifying itself in a group of its own due to the many different effects of the substance.

Hallucinogens come from natural sources and have been involved in cultural and religious ceremonies for thousands of years. Synthetic forms of hallucinogens have also been created- most common of which are *PCP*, *Ketamine*, *LSD* and *Ecstasy*. In general, hallucinogens produce powerful changes in sensory perception. Depending on the type of drug ingested, effects can range from hallucinations, changes in color perception, or distortion of objects. Additionally, some individuals report enhanced auditory, as well as changes in physical perception such as tingling or numbness of limbs and interchanging hot and cold sensations (Weaver & Schnoll, 2008). Interestingly, the effect of hallucinogens can vary both between individuals, as well as *within* the same individual. This means that the same amount of the same drug may produce a positive experience one time, but a negative experience the next time.

Overall, hallucinogens do not have addictive qualities; however, individuals can build a tolerance, thus needing larger quantities to produce similar effects (Wu, Ringwalt, Weiss, & Blazer, 2009). Furthermore, there is some evidence that long term use of these drugs results in psychosis, mood, or anxiety disorders due to the neurobiological changes after using hallucinogens (Weaver & Schnoll, 2008).

Similar to hallucinogens and a few other substances, **cannabis** is also derived from a natural plant- the hemp plant. While the most powerful of hemp plants is *hashish*, the most commonly known type of cannabis, marijuana, is a mixture of hemp leaves, buds, and tops of plants (SAMHSA, 2014). The potency of cannabis is impacted by many external factors such as the climate it was grown in, the way the cannabis was prepared, and the duration of storage. Of the active chemicals within cannabis, **tetrahydrocannabinol (THC)** appears to be the single component that determines the potent nature of the drug. Various strains of marijuana have varying amounts of THC; hashish contains a high concentration of THC, while marijuana has a small concentration.

THC binds to cannabinoid receptors in the brain which produces psychoactive effects. These effects vary depending on both an individual's body chemistry, as well as various strains and concentrations of THC. Most commonly, people report feelings of calm and peace, relaxation, increased hunger, and pain relief. Occasionally, negative symptoms such as increased anxiety or paranoia, dizziness, and increased heart rate also occur. In rare cases, individuals develop psychotic symptoms or schizophrenia following cannabis use (Donoghue et al., 2014).

While nearly 20 million American's report regular use of marijuana, only ten percent of these individuals will develop a dependence on the drug (SAMHSA, 2013). Of particular concern is the number of adolescents engaging in cannabis use. One in eight 8th graders, one in four 10th graders, and one in three 12th graders report use of marijuana in the past year (American Academy of Child and Adolescent Psychiatry, 2013). Individuals who begin cannabis abuse during adolescence are at an increased risk to develop cognitive effects from the drug due to the critical period of brain development during adolescence (Gruber, Sagar, Dahlgren, Racine, & Lukas, 2012). Increased discussion about the effects of marijuana use, as well as psychoeducation about substance abuse in general is important in preventing marijuana use during adolescence.

It is not uncommon for substance abusers to consume more than one type of substance at a time. This **combination** of substance use can have dangerous results depending on the interactions between substances. For example, if multiple depressant drugs (i.e. alcohol and benzodiazepines and/or opiates) are consumed at one time, an individual is at risk for severe respiratory distress or even death, due to the compounding depressive effects on the central nervous system. Additionally, when an individual is under the influence of one substance, judgement may be impaired, and ingestion of a larger amount of another drug may lead to an accidental overdose. Finally, the use of one drug to counteract the effects of another drug—taking a depressant to combat the effects of a stimulant—is equally as dangerous as the body is unable to regulate homeostasis.

14.2.3. Etiology of Substance Related and Addictive Disorders

14.2.3.1. Biological - Genetics. Similar to other mental health disorders, substance abuse is genetically influenced. With that said, it is different than other mental health disorders in that if the

individual is *not* exposed to the substance, they will not develop substance abuse.

Heritability of alcohol is among the most well studied substances, likely due to the fact that it is the only legal substance (with the exception of cannabis in some states). Twin studies have indicated a range of 50-60% heritability risk for alcohol disorder (Kendler et al., 1997). More recent studies exploring the heritability of other substance abuse, particularly drug use, suggests there may be a stronger heritability link than previously thought (Jang, Livesley, & Vernon, 1995). Twin studies indicate that the genetic component of drug abuse is stronger than drug use in general, meaning that genetic factors are more significant for abuse of a substance over nonproblematic use (Tsuang et al., 1996). Merikangas and colleagues (1998) actually found an 8-fold increased risk for developing a substance abuse disorder across a wide range of substances.

Unique to substance abuse is the fact that both genetic and familial influence are both at play. What does this mean? Well, biologically, the individual may be genetically predisposed to a substance abuse; additionally, the individual may also be at risk due to their familial environment where their parents and/or siblings are also engaging in substance abuse. Individuals whose parents abuse substances may have a greater opportunity to ingest substances, thus promoting drug-seeking behaviors. Furthermore, families with a history of substance abuse may have a more accepting attitude of drug use than families with no history of substance abuse (Leventhal & Schmitz, 2006).

14.2.3.2. Biological - Neurobiological. A longstanding belief about how drug abuse begins and is maintained is the *brain reward system*. A *reward* can be defined as any event that increases the likelihood of a response and has a pleasurable effect. Majority of research on the brain reward system has focused on the mesocorticolimbic dopamine system, as it appears this area is the primary reward system of most substances that are abused. As research has evolved in the field of substance abuse, five additional neurotransmitters have also been implicated in the reinforcing effect of addiction: dopamine, opioid peptides, GABA, serotonin, and endocannabinoids. More specifically, dopamine is less involved in opioid, alcohol, and cannabis. Alcohol and benzodiazepines lower the production of GABA, while cocaine and amphetamines are involved in the lowering of dopamine. Cannabis has been shown to reduce the production of endocannabinoids.

14.2.3.3. Cognitive. Cognitive theorists have focused on the beliefs regarding the anticipated effects of substance use. Defined as the *expectancy effect*, drug-seeking behavior is presumably motivated by the desire to attain a particular outcome by ingesting a substance. The expectancy effect can be defined in both positive and negative forms. Positive expectations are thought to increase drug-seeking behavior, while negative experiences would decrease substance use (Oei & Morawska, 2004). Several alcohol studies have examined the expectancy effect on the use of alcohol. Those with alcohol abuse reported expectations of tension reduction, enhanced sexual experiences, and improved social pleasure (Brown, 1985). Additionally, observing positive experiences, both in person and through television or social media also shapes our drug use expectancies.

While some studies have explored the impact of negative expectancy as a way to eliminate substance

abuse, research has failed to continually support this theory, suggesting that positive experiences and expectations are a more powerful motivator of substance abuse than the negative experiences (Jones, Corbin, Fromme, 2001).

14.2.3.4. Behavioral. Operant conditioning has been implicated in the role of developing substance use disorders. As you may remember, operant conditioning refers to the increase or decrease of a behavior, due to a reinforcement or punishment. Since we are talking about increasing substance use, behavioral theorists suggest that substance abuse is *positively and negatively reinforced* due to the effects of a substance.

Positive reinforcement occurs when the substance use is increased due to the positive or pleasurable experiences of the substance. More specifically, the rewarding effect or pleasurable experiences while under the influence of various substances directly impacts the likelihood that the individual will use the substance again (Wise & Koob, 2013). Studies of substance use on animals routinely supports this theory as animals will work to receive injections of various drugs (Wise & Koob, 2013).

Negative reinforcement, or the increase of a given behavior due to the removal of a negative effect, also plays a role in substance abuse in two different ways. First, many people ingest a substance as an escape from their unpleasant life- whether it be physical pain, stress, or anxiety, to name a few. Therefore, the substance temporarily provides relief from a negative environment, thus reinforcing future substance abuse (Wise & Koob, 2013). The second way negative reinforcement is involved in substance abuse is during symptoms of withdrawal. As previously mentioned, withdrawal from a substance often produces significant negative symptoms such as nausea, vomiting, uncontrollable shaking, etc. To eliminate these symptoms, an individual will consume more of the substance, thus again escaping the negative symptoms and enjoying the “highs” of the substance.

14.2.3.5. Sociocultural. Arguably, one of the strongest influences of substance abuse is the impact of one’s friends and immediate environment. Peer attitudes, perception of one’s friends drug use, pressure from peers to use substances, and beliefs about substance use are among the strongest predictors of drug use patterns (Leventhal & Schmitz, 2006). This is particularly concerning during adolescence when patterns of substance use typically begin.

Additionally, research continually supports a strong relationship between second generation substance abusers (Wilens et al., 2014). The increased likelihood of family members substance abuse is likely related to both a genetic predisposition, as well as the accepting attitude of the familial environment (Chung et al., 2014). Not only does a child have early exposure to these substances if their parent has a substance abuse problem, but they are also less likely to have parental supervision which may impact their decision related to substance use (Wagner et al., 2012). One potential protective factor against substance use is religiosity. More specifically, families that promote religiosity may actually reduce substance use by promoting negative experiences (Galen & Rogers, 2004).

Another sociocultural view on substance abuse is stressful life events, particularly those related to

financial stability. Prevalence rates of substance abuse is higher in poorer people (SAMHSA, 2014). Furthermore, additional stressors such as childhood abuse/trauma, negative work environments, as well as discrimination are also believed to contribute to the development of a substance use disorder (Hurd, Varner, Caldwell, & Zimmerman, 2014; McCabe, Wilsnack, West, & Boyd, 2010; Unger et al., 2014).

Module Recap

Module 14 presented you with a second way that internal forces motivate behavior. In this case, we discussed physiological processes involving drives and addicted behavior. Drives included hunger, thirst, temperature, sex, and sleep. We explored the various ways the brain and other systems cause motivated behavior to restore homeostasis and in the case of hunger, how external signals factor in too. We looked at addiction from the perspective of clinical psychology and you could re-examine the process of change, and in particular what DiClemente had to say, from Module 6.

With that, the core content of the textbook is covered. To round things out, I will engage in a brief discussion of motivated behavior, for better or worse, and offer an explanation in terms of universal human values in Module 15.

Module 15: Motivation, for Better or Worse

Module Overview

At last we make it to the final module in the book. Over the past 14 modules I have laid a framework for understanding motivated behavior by discussing basic ideas in motivation, emotion, goals, stress and coping, economics, personality, and needs. We began the process of applying this knowledge by discussing behavior modification, religious behavior, development, health and wellness, social processes, cognition and memory, and issues related to physiological processes. In Module 15 we will continue to apply what we have learned but in terms of types of motivated behavior that lead to positive ends and those that lead to negative ends. I call this motivation for better and motivation for worse. Topics not covered in this book so far, or at least minimally, will be introduced to include understanding normal and abnormal behavior; love and jealousy; social facilitation and social loafing; social influence and its three forms of compliance, conformity, and obedience; helping behavior; forgiveness; health promoting and defeating behaviors; prejudice and discrimination; mob behavior; and the stigmatization of mental disorders. Once this is complete, and it is a tall order to fill, we will focus on a possible explanation that underlies all of these behaviors and many covered in the book so far - universal human values. This module is really meant to tie up loose ends, introduce new topics taught in various psychology courses, and propose a new way of understanding motivated behavior. I hope you enjoy it.

Module Outline

- 15.1. Motivation, for Better
- 15.2. Motivation, for Worse
- 15.3. Explaining Behavior, For Better or Worse, Through Values

Module Learning Outcomes

- Outline ways in which we engage in motivated behavior for the betterment of ourselves and others.
- Outline ways in which we engage in motivated behavior to the detriment of ourselves and others.
- Argue for values as a high-level explanation for the behaviors presented in this module and all preceding ones.

15.1. MOTIVATION, FOR BETTER

Section Learning Objectives

- Explain why exercise is a type of motivated behavior for the better.
- Propose a way to understand what normal behavior is through positive psychology.
- Explain why love is a type of motivated behavior for the better.
- Explain why social facilitation is a type of motivated behavior for the better.
- Explain why helping behavior is a type of motivated behavior for the better.
- Explain why forgiveness is a type of motivated behavior for the better.
- Explain why compliance is a type of motivated behavior for the better.
- Explain why conformity is a type of motivated behavior for the better.

15.1.1. Health Promoting Behaviors - Exercise

If you are going to engage in any health promoting behavior, exercise is a way to get a lot of bang for your buck. It has tremendous benefits to include weight loss, reducing the risk of heart diseases, improving mood, managing blood sugar and insulin levels, strengthening bones and muscles, reducing the risk of some cancers such as colon and lung, improving sleep, improving sexual health, buffering against the effects of stress, and quite possibly most important, it can help us living longer (<https://medlineplus.gov/benefitsofexercise.html>).

Exercise takes several different forms. First, *endurance* or *aerobic exercise* increases our breathing and heart rate over an extended period of time and can include going for a walk after dinner, swimming, going for a run outside or on the treadmill, and using an elliptical. In contrast, *anerobic exercise* involves no additional oxygen consumption since energy is expelled in short, intensive bursts such as playing baseball or short-distance running. Second, *strength* or *resistance training*, also called isotonic exercise, involves lifting weights with the intent being of making your muscles stronger. Third, *balance* exercises help with walking on uneven surfaces and can reduce falls and can include tai chi or standing on one leg. Finally, *flexibility* involves stretching muscles which aid in staying limber.

So how do you make exercise a part of your daily routine? Medline Plus suggests making every day activities more active. Instead of taking the elevator or escalator, use the stairs. You should also exercise with others such as family and friends. The site states, "Having a workout partner may make you more likely to enjoy exercise. You can also plan social activities that involve exercise. You might also consider joining an exercise group or class, such as a dance class, hiking club, or volleyball team."

You should also listen to music, watch television, or try new machines and exercises to make working out more fun. Track your progress so that you can see how much you are improving and to stay motivated. Finally, finding activities to do when the weather is bad is recommended.

Of course, exercising does come with its risks. Injuries and soreness are possible, but most people accept them and if you exercise safely and use proper equipment, you can avoid or minimize these negative consequences. It is good to listen to our body and not overdo it. Exercise addiction is another possibility and is when a person shows a strong emotional attachment to exercise (Ackard, Brehm, & Steffen, 2002). Withdrawal symptoms such as depression and anxiety occur if the person is prevented from working out.

For more on exercising and physical fitness, please visit:

- <https://medlineplus.gov/exerciseandphysicalfitness.html>
- <https://familydoctor.org/the-exercise-habit/?adfree=true>

15.1.2. Understanding Normal Behavior

Any understanding of normal behavior is in the eye of the beholder and most psychologists have found it easier to explain what is wrong with people than what is right. How so?

Psychology worked with the disease model for over 60 years, from about the late 1800s into the middle part of the 19th century. The focus was simple - curing mental disorders - and included such pioneers as Freud, Adler, Klein, Jung, and Erickson. These names are synonymous with the psychoanalytical school of thought. In the 1930s, behaviorism, under B.F. Skinner, presented a new view of human behavior. Simply, human behavior could be modified if the correct combination of reinforcements and punishments were used. This view point espoused the dominant worldview still present at the time - *mechanism* - and that the world could be seen as a great machine and explained through the principles of physics and chemistry. In it, human beings were smaller machines in the larger machine of the universe.

Moving into the mid to late 1900s, we developed a more scientific investigation of mental illness which allowed us to examine the roles of both nature and nurture and to develop drug and psychological treatments to “make miserable people less miserable.” Though this was good, there were three consequences as pointed out by Martin Seligman in his 2008 TED Talk entitled, “The new era of positive psychology.” These are:

- “The first was moral; that psychologists and psychiatrists became victimologists, pathologizers; that our view of human nature was that if you were in trouble, bricks fell on you. And we forgot that

people made choices and decisions. We forgot responsibility. That was the first cost.”

- “The second cost was that we forgot about you people. We forgot about improving normal lives. We forgot about a mission to make relatively untroubled people happier, more fulfilled, more productive. And “genius,” “high-talent,” became a dirty word. No one works on that.”
- “And the third problem about the disease model is, in our rush to do something about people in trouble, in our rush to do something about repairing damage, it never occurred to us to develop interventions to make people happier — positive interventions.”

One attempt to address the limitations of both psychoanalysis and behaviorism came from 3rd force psychology - humanistic psychology - under such figures as Abraham Maslow and Carl Rogers starting in the 1960s. As Maslow, said, “The science of psychology has been far more successful on the negative than on the positive side; it has revealed to us much about man’s shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his full psychological height. It is as if psychology had voluntarily restricted itself to only half its rightful jurisdiction, and that the darker, meaner half (Maslow, 1954, p. 354).” Humanistic psychology instead addressed the full range of human functioning and focused on personal fulfillment, valuing feelings over intellect, hedonism, a belief in human perfectibility, emphasis on the present, self-disclosure, self-actualization, positive regard, client centered therapy, and the hierarchy of needs. Again, these topics were in stark contrast to much of the work being done in the field of psychology up to and at this time.

In 1996, Martin Seligman became the president of the American Psychological Association (APA) and called for a **positive psychology** or one that had a more positive conception of human potential and nature. Building on Maslow and Roger’s work, he ushered in the scientific study of such topics as happiness, love, hope, optimism, life satisfaction, goal setting, leisure, and subjective well-being. Though positive and humanistic psychology have similarities, it should be pointed out their methodology was much different. While humanistic psychology generally relied on qualitative methods, positive psychology utilizes a quantitative approach and aims to make the most out of life’s setbacks, relate well to others, find fulfillment in creativity, and finally help people to find lasting meaning and satisfaction (http://www.positivepsychologyinstitute.com.au/what_is_positive_psychology.html)

So to understand what normal behavior is do we look to positive psychology for an indication or do we first define abnormal behavior and then reverse engineer a definition of what normal is? Our preceding discussion gave suggestions about what normal behavior is but could the darker elements of our personality also make up what is normal, to some extent? Possibly. The one truth is that no matter what behavior we display, if taken to the extreme, it can become disordered - whether trying to control others through social influence or helping people in an altruistic fashion. As such, we can consider **abnormal behavior** to be a combination of personal distress, psychological dysfunction, deviance from social norms, dangerousness to self and others, and costliness to society. More on this in Section 15.2.2.

15.1.3. Love

In Section 12.3 we discussed interpersonal attraction. One outcome of this attraction to others, or the need to affiliate/belong (Section 8.2) is love. What is love? According to a 2011 article in Psychology Today entitled '*What is Love, and What Isn't It?*' love is a force of nature, is bigger than we are, inherently free, cannot be turned on as a reward or off as a punishment, cannot be bought, cannot be sold, and cares what becomes of us (<https://www.psychologytoday.com/intl/blog/love-without-limits/201111/what-is-love-and-what-isnt>). Adrian Catron writes in an article entitled, "What is Love? A Philosophy of Life" that "the word love is used as an expression of affection towards someone else....and expresses a human virtue that is based on compassion, affection and kindness." He goes on to say that love is a practice and you can practice it for the rest of your life. (https://www.huffpost.com/entry/what-is-love-a-philosophy_b_5697322). And finally, the Merriam Webster dictionary online defines love as "strong affection for another arising out of kinship or personal ties" and "attraction based on sexual desire: affection and tenderness felt by lovers." (Source: <https://www.merriam-webster.com/dictionary/love>).

Robert Sternberg (1986) said love is composed of three main parts (called the **triangular theory of love**): intimacy, commitment, and passion. First, **intimacy** is the emotional component and involves how much we like, feel close to, and are connected to another person. It grows steadily at first, slows down, and then levels off. Features include holding the person in high regard, sharing personal affects with them, and giving them emotional support in times of need. Second, **commitment** is the cognitive component and occurs when you decide you truly love the person. You decide to make a long-term commitment to them and as you might expect, is almost non-existent when a relationship begins and is the last to develop usually. If a relationship fails, commitment would show a pattern of declining over time and eventually returns to zero. Third, **passion** represents the motivational component of love and is the first of the three to develop. It involves attraction, romance, and sex and if a relationship ends, passion can fall to negative levels as the person copes with the loss.

This results in eight subtypes of love which explains differences in the types of love we express. For instance, the love we feel for our significant other will be different than the love we feel for a neighbor or coworker, and reflect different aspects of the components of intimacy, commitment, and passion as follows:

Table 15.1. Types of Love (According to Sternberg)

Type of Love	Intimacy	Commitment	Passion	Example
Nonlove	No	No	No	
Liking	Yes	No	No	Friendships
Infatuation	No	No	Yes	Experiencing love at first sight or being obsessed with a person
Empty	No	Yes	No	Stagnant relationships
Fatuous	No	Yes	Yes	Relationships motivated by passion
Companionate	Yes	Yes	No	Relationships lacking passion such as those between family members or close friends
Romantic	Yes	No	Yes	Being bonded emotionally and physically to another person
Consummate	Yes	Yes	Yes	Complete love

15.1.4. Social Facilitation

Have you ever noticed that when you go to the gym you workout harder if someone else is with you (i.e. a workout buddy) but you don't necessarily put in the same effort if alone? This is called **social facilitation** and is when the presence of other people affects our performance depending on the type of task. Zajonc (1965, 1980) said that performance increases across three steps starting with the presence of others causing a rise in our physiological arousal which motivates our behavior. This allows us to make what he called the *dominant response*, or the reaction that follows the quickest and easiest from a stimulus. Whether this response is accurate or not depends on how difficult the task is. The dominant

response is usually the correct one for easy tasks but not necessarily for difficult tasks. Think about when you study for an upcoming exam for the first time. If a fellow classmate quizzes you, your arousal will increase and strengthen the dominant response. But your performance will go down since the material being studied is new at this point and you have not had a chance to really understand it and commit it to memory. What about five days later, after studying tirelessly for the exam, but in keeping with the recommendations I shared in Module 13, and an hour before the exam? How might this classmate's quizzing (or presence) affect your performance? As before you are aroused, making the dominant response, but this time your performance is much better as the task is now easy for you. I predict you will satisfy your achievement motivation by earning a high grade on the exam.

15.1.5. Helping Behavior

When do you help others? Do you lend assistance in every situation or are you more likely to help in some situations than others? We might engage in this type of motivated behavior because we really want to help others, called **altruistic behavior**. We expect nothing in return or have no expectation of reciprocation. Or we might help someone because we expect that in the future when we are facing a similar situation they will help us, called **reciprocal altruism** (Krebs, 1987). If we help a friend move into their new apartment we expect help from this individual when we move our next time. Or we might help with an expectation of a specific form of repayment, called **perceived self-interest**. We offer our boss a ride home because we believe he will give us a higher raise when our annual review comes up.

Attribution theory says there are factors in the situation and those in the person that affect helping behavior (See Section 12.1 if you need to refresh your memory on this). In terms of the latter, if we sense greater personal responsibility we will be more likely to help such as there being no one else around but us. If we see a motorist stranded on the side of the road on an isolated country road, and we know no other vehicle is behind us or approaching, responsibility solely falls on us and we will be more likely to help. We might also help because we have a need for approval such as we realize by helping save the old lady from the burning building we could get our name in the paper. Mood, our topic in Module 2, plays in too. Do you think we will be more likely to help when in a good or bad mood? If you said good mood, you are correct. Think about a bad mood and the cliché 'Misery loves company.' My wife has a great expression she uses when in a bad mood to illustrate this - 'Sucks to be you.' In a good mood, she will move heaven and earth to help someone out. Finally, we will be more likely to help if we don't expect to experience any type of embarrassment when helping. Let's say you stop to help a fellow motorist with a flat tire. If you are highly competent at changing tires (see Module 1) then you will not worry about being embarrassed. But if you know nothing about tires, but are highly interpersonally attracted to the stranger on the side of the road holding a tire iron with a dumbstruck look on his or her face, you likely will look foolish if you try to change the tire and demonstrate your ignorance of how to do it (your solution is usually to call your autoclub or AAA when faced with the same stressor). These are some dispositional reasons why we may or may not help.

What about situational factors? As we saw above, if we are the only one on the scene (or at least one of a very small few) we will feel personal responsibility and help. But what if we are among a large group of people who could help. Will you step up then? You still might, but the **bystander effect** (Latane & Darley, 1970) says likely not. Essentially, the chances that we will aid someone needing help decreases as the number of bystanders increases. The phenomenon draws its name from the murder of Ms. Kitty Genovese in March 1964. Thirty-eight residents of New York City failed to aid the 24-year-old woman who was attacked and stabbed twice by Winston Moseley as she walked to her building from her car. Not surprisingly, she called for help which did successfully scare Winston away, but when no one came out to help her, despite turning on lights in their apartments and looking outside, he returned to finish what he started. Ms. Genovese later died from her wounds. Very sad but ask yourself, what would you do? Of course, we would say we would help...or we hope that we would but history and research says otherwise. Another situational factor is ambiguity. Let's say you are driving down the road and see someone pulled on the side. You can see them in the front seat but cannot tell what they are doing. If the situation does not clearly suggest an emergency, you will likely keep driving. Maybe the person was acting responsibly and pulled over to send a text or take a call and is not in need of any assistance at all.

15.1.6. Forgiveness

According to the Mayo Clinic, **forgiveness** involves letting go of resentment and any thought we might have about getting revenge on someone for past wrongdoing. So what are the benefits of forgiving others? Our mental health will be better, we will experience less anxiety and stress, we may experience fewer symptoms of depression, our heart will be healthier, we will feel less hostility, and our relationships overall will be healthier.

It's easy to hold a grudge. Let's face it, whatever the cause, it likely left us feeling angry, confused, and sad. We may even be bitter not only to the person who slighted us but extend this to others who had nothing to do with the situation. We might have trouble focusing on the present as we dwell on the past and feel like life lacks meaning and purpose.

But even if we are the type of person who holds grudges, we can learn to forgive. The Mayo Clinic offers some useful steps to help us get there. First, we should recognize the value of forgiveness. Next, we should determine what needs healing and who we should forgive and for what. Then we should consider joining a support group or talk with a counselor. Fourth, we need to acknowledge our emotions, the harm they do to us, and how they affect our behavior. We then attempt to release them. Fifth, choose to forgive the person who offended us leading to the final step of moving away from seeing ourselves as the victim and "release the control and power the offending person and situation have had in your life."

At times, we still cannot forgive the person. They recommend practicing empathy so that we can see the situation from their perspective, praying, reflecting on instances of when you offended another person and they forgave you, and be aware that forgiveness does not happen all at once but is a process.

Read the article by visiting:
<https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/forgiveness/art-20047692>

15.1.7. Social Influence - Conformity

Have you ever changed your behavior to match the behavior of a group? Maybe you wanted to behave the same as others, so you did not stand out. This is called **conformity** and can be a useful behavior to engage in especially if you are motivated to be accepted by the group, called **normative social influence**, or are not sure how to act and the actions of other group members provide you with a cue called **informative social influence**. In the case of the former, a new student at a university may conform to the standards of a fraternity or sorority to be accepted by the chapter. This makes sense if you consider that human beings have a need to affiliate. In the case of the latter, many new students are excited to go to their first home football game. The environment is exciting and they really want to be part of the larger community of students and fans of the team from within the area. If you have ever been to a sports event you know there are certain types of rituals that are practiced by all such as what to do after a touchdown by the home team, after your team earns a first down, when the mascot tries to motivate the crowd, or at the end when the school fight song is sung. Veteran students act almost on auto-pilot, but like the new student at his or her first game (or the same for a fan at a game for the first time), they had to learn and took cues by observing the actions of others.

Solomon Asch (1951, 1956) demonstrated conformity in the lab through a simple experiment. He asked a group of six to eight participants to sit at a table and compare lines. They were shown a sample line and then asked which of three comparison lines matched the sample. The correct answer was fairly certain because the incorrect answers were obviously not even close to looking like the sample. Asch went around the table and asked each participant which comparison line matched the sample. Here's the thing. All participants, but one, were part of the study unbeknownst to the actual participant. These confederates were asked for their answer first and on 6 of 18 trials gave the correct answer. That means on 12 of 18 they gave an intentionally wrong answer. So what did the participant do? The results showed that participants conformed to the actions of the group 35% of the time. To make sure something else did not better explain the results than conformity, such as the participants truly being confused by the task, a control group was used in which participants responded to the trials alone. In this case, mistakes were made only 5% of the time indicating that the participants in the experimental group were conforming as hypothesized. What did Asch conclude? Well that under some circumstances people conform even in the face of clear physical evidence to the contrary. Why is that?

As with helping behavior, situational and dispositional factors are at work. In the case of dispositional, if we are attracted to the group, expect future interactions with the group, are low status compared to other group members (such as being in a training class with supervisors and you are just a normal worker bee), and you want to be accepted to by the group, we are more likely to conform. In the case of situational factors, conformity increases up to about 4 people. In other words, it does not keep rising as

the group size increases but levels off. What if the unanimity of the group is broken, meaning we have at least one ally. Conformity falls from 35% to 25%. And finally, what if the task is difficult or complicated. Conformity will be higher likely because we believe we are not understanding what we should be doing and will follow the lead of other group members who seem to comprehend.

15.1.8. Social Influence - Compliance

Efforts to get you to say yes to some request fall under the type of social influence called **compliance**. In his book, *Influence: The Psychology of Persuasion*, Robert B. Cialdini (1984) describes specific weapons of influence compliance professionals, or people whose job it is to get you to say yes such as car salesmen, telemarketers, politicians, and fundraisers, will use. These include tactics centered on reciprocation, commitment and consistency, social proof, liking, authority, and scarcity.

First, **reciprocation** says that we are more willing to comply with a request from another person if they did us a favor or gave a concession previously. We feel compelled to pay them back. Two techniques can be used. The Home Shopping Network often will show a deal and then right when you think they are finished describing it, will add on an additional item for free, and another after that, and finally will give free shipping if we make the purchase now. This is appropriately named "*that's-not-all*." Another technique has a seller, motivated to get rid of a product, ask a higher price than he/she really wants. When rejected, the price is lowered. The buyer now feels compelled to agree to the more favorable terms since a concession was made. This is called the *door-in-the-face technique*. Occasionally, we might find a naïve person who accepts our initial offer but if we have to reduce our price, this was expected all along.

Second, **commitment and consistency** states that once we have committed to a position we are more likely to display behavior consistent with our initial action when asked to comply with new requests. In the *lowball procedure* we agree to a deal but soon after, the terms are changed. We accept the new terms even though they are less favorable. In the *foot-in-the-door technique* a small request is asked for and agreed to, such as donating \$5 to a charity. The person asking for the money then makes a larger request, say to donate \$20 to the cause. Since we already agreed to donate money, we accepted the larger amount in lieu of the smaller one.

Third, **social proof** states that we are more willing to comply with a request if we believe other people like us are acting in the same way. This is why commercials are tailored to who is watching at any given time during the day. Early morning and maybe late afternoon when kids are watching, advertisers will show kids enjoying a new toy. Middle of the day when housewives are watching, the people in commercials are of the same demographic as them. If you are watching specific channels such as Univision or BET, commercials will have Hispanic or African Americans, respectively. Again, its all about motivating our behavior by making us think that others like us are doing the same thing.

Fourth, have you ever tried to get someone to do something by making yourself seem extra likeable to them? If so, you are using techniques falling under **friendship/liking**. I mean let's face it. Are you more likely to comply with a request from your best friend or worst enemy? If we are specifically trying to present ourselves as more attractive or likeable to a person so that they comply with our request to purchase a new bedroom set, we are using the technique of *ingratiation*. If we use compliments about something someone said, how they look, or what they do, we are using *flattery* and for it to work, it has to appear sincere and genuine.

Fifth, we are more likely to comply with a request if it comes from someone who knows what they are talking about. They are an **authority** on the subject and so we should listen to them. LeBron James should know what he is talking about when it comes to what tennis shoes to wear when playing basketball, right? Drug commercials will often have doctors discussing the benefits of the latest drug for restless leg syndrome or diabetes. I guess I should have written doctors in quotes such as "doctors" because the person we think is a doctor is really an actor, but still, the deception has the intended effect. We believe what this professional says because they have legitimate power and knowledge that we do not, conveyed by their position.

Finally, we are more likely to comply with a request if we believe a product is running out or becoming **scarce**. Act now. While supplies last. Final days of the sale are all examples of the *deadline technique*. Sale ads typically employ this strategy as do coupons restaurants and stores use. If you want a really great example of this strategy, just check out the Hooked app on your phone or on the web at - <http://hookedapp.com/>. Outside of using time to indicate a deal is scarce, some marketers will indicate only a certain number of a product exist and so if you want one, you need to do something about it as quick as you can - i.e. go buy it. Can you say Black Friday (which now starts on Thanksgiving night...or a week in advance...and runs for days after Friday... so much for the excitement of shopping the day after Thanksgiving)?

15.2. MOTIVATION, FOR WORSE

Section Learning Objectives

- Explain why smoking is a type of motivated behavior for the worst.
- Propose a way to understand what abnormal behavior is using features stated in the DSM-5.
- Explain why jealousy is a type of motivated behavior for the worst.
- Explain why social loafing is a type of motivated behavior for the worst.
- Explain how prejudice and discrimination can lead to motivated behavior for the worst.

- Explain why stigmatization of mental disorders is a type of motivated behavior for the worst.
- Explain why mob behavior is a type of motivated behavior for the worst.
- Explain why obedience is a type of motivated behavior for the worst.

15.2.1. Health Defeating Behaviors - Smoking

According to the CDC, smoking is “the single largest preventable cause of death and disease in the United States” About 480,000 Americans die each year from cigarette smoking and 41,000 of these deaths are due to secondhand smoke. Smoking rates are highest among American Indian/Alaska Natives, men, people aged 45-64 years, those with a GED, military personnel compared to civilians, homosexuals compared to heterosexuals, and people below the poverty line.

Source

<https://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html>

So why might someone start to smoke, even though we know the risks today? Social pressure, especially during adolescence, is one major cause. Teens want to be cool or to try something new out and a 2014 Surgeon General’s Report showed that about 90% of adult smokers started before age 18 and nearly 100% started by age 26. The tobacco industry also spends billions of dollars each year creating and marketing ads which make smoking seem glamorous and safe, and it does not help that it is shown in popular media and in video games.

People continue to smoke due to being addicted to nicotine. The CDC says, “Nicotine affects a smoker’s behavior, mood, and emotions. If a smoker uses tobacco to help manage unpleasant feelings and emotions, it can become a problem for some when they try to quit. The smoker may link smoking with social activities and many other activities, too. All of these factors make smoking a hard habit to break.” Positive reinforcement from smoking to include feeling relaxed and the smell of tobacco and negative reinforcement to include getting rid of the unpleasant feelings the CDC talked about all contribute to continuing the behavior. Avoidance of withdrawal symptoms to include irritability, dizziness, depression, weight gain, feeling tired, constipation and gas, headaches, feeling restless, and having trouble sleeping occur and in keeping with negative reinforcement.

Source

<https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/why-people-start-using-tobacco.html>

Of course, the consequences of not quitting are severe, with death a definite option. Smoking is linked to lung diseases such as COPD and asthma; cancers such as lung, larynx, blood, bladder, stomach, and kidney (really smoking can cause cancer anywhere in the body); cataracts; type 2 diabetes mellitus; stroke; cardiovascular disease; and preterm delivery in pregnant women. Smoking also causes bad breath, longer healing times for wounds, a higher risk of peptic ulcers, decreased sense of smell and taste which can affect your quality of life, and increased risk of gum disease and tooth loss.

So why should you be motivated to quit if you are a smoker? Obviously, you can live longer. According to the CDC, 1 year after quitting the risk of a heart attack drops sharply; 2-5 years later the risk for a stroke falls to about that of a nonsmoker; 5 years later the risks for cancers such as mouth, throat, and esophagus drop by half; and 10 years later the risk for lung cancer drops by half. Quitting saves a considerable amount of money considering packs of cigarettes can cost between \$5 and \$10 and smoking just one pack a day at the lower end of the range could save you over \$1,800.00 a year. Smoking is becoming a hassle as more cities and states pass clean indoor air laws in public places. And finally, cigarette smoke can harm or kill your loved ones – people who may never have picked up a cigarette in their life. The American Lung Association says, “Children who live with smokers get more chest colds and ear infections, while babies born to mothers who smoke have an increased risk of premature delivery, low birth weight and sudden infant death syndrome (SIDS).”

Source - <https://www.lung.org/stop-smoking/i-want-to-quit/reasons-to-quit-smoking.html>

Note: Other health defeating behaviors such as alcohol, drug use, and comfort eating could be added to this section but in the interest of space, will not be.

15.2.2. Features and Costs of Abnormal Behavior

In Section 15.1.2, I showed that what we might consider normal behavior is difficult to define. Equally difficult is understanding what abnormal behavior is, which may be surprising to you. The American Psychiatric Association, in its publication, the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5 for short), states that though “no definition can capture all aspects of all disorders in the range contained in the DSM-5” certain aspects are required. These include:

- **Dysfunction** - includes “clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning” (pg. 20). Abnormal behavior, therefore, has the capacity to make our well-being difficult to obtain and can be assessed by looking at an individual’s current performance and comparing it to what is expected in general or how the person has performed in the past. As such, a good employee who suddenly demonstrates poor performance may be experiencing an environmental demand leading to stress and ineffective coping mechanisms. Once the demand resolves itself the person’s performance should return to normal according to this principle.
- **Distress** - When the person experiences a disabling condition “in social, occupational, or other important activities” (pg. 20). Distress can take the form of psychological or physical pain, or both concurrently. Alone though, distress is not sufficient enough to describe behavior as abnormal. Why is that? The loss of a loved one would cause even the most “normally” functioning individual pain.

An athlete who experiences a career ending injury would display distress as well. Suffering is part of life and cannot be avoided. And some people who display abnormal behavior are generally positive while doing so.

- **Deviance** – Closer examination of the word abnormal shows that it indicates a move away from what is normal, or the mean (i.e. what would be considered average and in this case in relation to behavior), and so is behavior that occurs infrequently (sort of an outlier in our data). Our *culture*, or the totality of socially transmitted behaviors, customs, values, technology, attitudes, beliefs, art, and other products that are particular to a group, determines what is normal and so a person is said to be deviant when he or she fails to follow the stated and unstated rules of society, called **social norms**. What is considered “normal” by society can change over time due to shifts in accepted values and expectations. For instance, homosexuality was considered taboo in the U.S. just a few decades ago but today, it is generally accepted. Likewise, PDAs, or public displays of affection, do not cause a second look by most people unlike the past when these outward expressions of love were restricted to the privacy of one’s own house or bedroom. In the U.S., crying is generally seen as a weakness for males but if the behavior occurs in the context of a tragedy such as the Vegas mass shooting on October 1, 2017 in which 58 people were killed and about 500 were wounded while attending the Route 91 Harvest Festival, then it is appropriate and understandable. Finally, consider that statistically deviant behavior is not necessarily negative. Genius is an example of behavior that is not the norm.

Though not part of the DSM conceptualization of what abnormal behavior is, many clinicians add **dangerousness** to this list, or when behavior represents a threat to the safety of the person or others. It is important to note that having a mental disorder does not mean you are also automatically dangerous. The depressed or anxious individual is often no more a threat than someone who is not depressed and as Hiday and Burns (2010) showed, dangerousness is more the exception than the rule. Still, mental health professionals have a duty to report to law enforcement when a mentally disordered individual expresses intent to harm another person or themselves. It is important to point out that people seen as dangerous are also not automatically mentally ill.

This leads us to wonder what the cost of mental illness is to society. The National Alliance on Mental Illness (NAMI) indicates that depression is the number one cause of disability across the world “and is a major contributor to the global burden of disease.” Serious mental illness costs the United States an estimated \$193 billion in lost earning each year. They also point out that suicide is the 10th leading cause of death in the U.S. and 90% of those who die due to suicide have an underlying mental illness. In relation to children and teens, 37% of students with a mental disorder age 14 and older drop out of school which is the highest dropout rate of any disability group, and 70% of youth in state and local juvenile justice systems have at least one mental disorder. Source: <https://www.nami.org/Learn-More/Mental-Health-By-the-Numbers>. In terms of worldwide impact, the World Economic Forum used 2010 data to estimate \$2.5 trillion in global costs in 2010 and projected

costs of \$6 trillion by 2030. The costs for mental illness are greater than the combined costs of cancer, diabetes, and respiratory disorders (Whiteford et al., 2013). And finally, “The Social Security Administration reports that in 2012, 2.6 and 2.7 million people under age 65 with mental illness-related disability received SSI and SSDI payments, respectively, which represents 43 and 27 percent of the total number of people receiving such support, respectively” (Source: <https://www.nimh.nih.gov/about/directors/thomas-insel/blog/2015/mental-health-awareness-month-by-the-numbers.shtml>). So as you can see the cost of mental illness is quite staggering for both the United States and other countries.

In conclusion, though there is no one behavior that we can use to classify people as abnormal, most clinical practitioners agree that any behavior that strays from what is considered the norm or is unexpected and has the potential to harm others or the individual, is abnormal behavior.

15.2.3. Jealousy

In Section 15.1 we discussed love and types of it. The dark side of love is what is called **jealousy**, or a negative emotional state arising due to a perceived threat to one’s relationship. Take note of the word perceived here. The threat does not have to be real for jealousy to rear its ugly head and what causes men and women to feel jealous varies. For women, a man’s emotional infidelity leads her to fear him leaving and withdrawing his financial support for her offspring while sexual infidelity is of greater concern to men as he may worry that the children he is supporting are not his own. Jealousy can also arise among siblings who are competing for their parent’s attention, among competitive coworkers especially if a highly desired position is needing to be filled, and among friends. From an evolutionary perspective, jealousy is essential as it helps to preserve social bonds and motivates action to keep important relationships stable and safe. But it can also lead to aggression (Dittman, 2005) and mental health issues.

15.2.4. Social Loafing

In Section 15.1.4 we discussed how the presence of others can improve performance for easy tasks but make it worse for hard tasks, called social facilitation. If, in general, others can help us, their presence can also hurt us, called **social loafing** (Latane et al., 1979). Group work is a great example of this. If a group is relatively large, we may feel that others can pick up the slack if we do not complete our deliverables. Think about large lecture halls too. If the professor asks a question, you are one of maybe 100 students who could answer it. If you think about it in terms of percentages and in terms of responsibility, you are only 1% responsible for answering the question. What if your class has 250 students as some of my Introduction to Psychology sections have had in the past? Now your responsibility is a whopping 0.4%. What if your class is much smaller and has 30 students? Your

responsibility is 3.33% for answering the question.

Did you know that employers have recognized that social loafing in the workplace is serious enough of an issue that they now closely monitor what their employees are doing, in relation to surfing the web, online shopping, playing online games, managing finances, searching for another job, checking Facebook, sending a text, or watching Youtube videos? They are, and the phenomenon is called *cyberloafing*. Employees are estimated to spend from three hours a week up to 2.5 hours a day cyberloafing. So what can employers do about it? Kim, Triana, Chung, and Oh (2015) reported that employees high in the personality trait of Conscientiousness (see Module 7 for a discussion) are less likely to cyberloaf when they perceive greater levels of organizational justice. So they recommend employers to screen candidates during the interview process for conscientiousness and emotional stability, develop clear policies about when personal devices can be used, and “create appropriate human resource practices and effectively communicate with employees so they feel people are treated fairly” (Source: <https://news.wisc.edu/driven-to-distraction-what-causes-cyberloafing-at-work/>). Cyberloafing should be distinguished from leisure surfing which Matthew McCarter of The University of Texas at San Antonio says can relieve stress and help employees recoup their thoughts (Source: <https://www.sciencedaily.com/releases/2016/01/160120111527.htm>).

How can we reduce social loafing? If an individual’s contribution to the group project can be identified and evaluated by others, if the group is small, if it is cohesive meaning the person values group membership, the task is seen as important, and if there is punishment for poor performance, social loafing will be less of an issue (Karau & Kipling, 1993). Back to the example of the professor asking a question in class. One strategy I use is to not ask the whole class, per se, but a much smaller area. I tend to bracket or identify a specific row or group of students to answer a question. If this is just 10 students of the class of 250, an individual student’s responsibility for answer has just risen from 0.4% to 10% or a 25-fold increase.

15.2.5. Prejudice and Discrimination

I am sure you have heard the terms prejudice and discrimination in the past and may think they are synonyms. Actually, they are not. **Prejudice** occurs when someone holds a negative belief about a group of people. In contrast, **discrimination** is when a person acts in a way that is negative against a group of people. So, prejudice is an attitude while discrimination is a behavior.

Interestingly, a person could be prejudicial but not discriminatory. Most people do not act on their attitudes about others due to social norms against such actions. A person could also be discriminatory without being prejudicial. Say an employer needs someone who can lift up to 75lbs on a regular basis. If you cannot do that and are not hired, you were discriminated against but that does not mean that the employer has prejudicial beliefs about you. The same would be said if a Ph.D. was required for a position and you were refused the job since you only have a bachelor’s degree.

How might we be motivated in a negative way in relation to prejudice? Well, we have a tendency to see members of an outgroup as being more similar than members of our ingroup, called **out-group homogeneity**. We also tend to display favoritism toward our group and hold a negative view of members outside this group, called the **in-group/out-group bias**. This might lead us to worry about being judged by a negative stereotype applied to all members of our group. Steele et al. (1997) called this the **stereotype threat** and has been shown to impair the academic performance of African Americans (Steele & Aronson, 1995), though helping these students see intelligence as malleable reduced their vulnerability to the phenomenon (Good, Aronson, & Inzlicht, 2003; Aronson, Fried, & Good, 2002).

It is possible that we are not even aware we hold such attitudes towards other people, called an **implicit attitude**. Most people when asked if they hold a racist attitude would vehemently deny such a truth but research using the Implicit Association Test (IAT) show otherwise (Greenwald et al., 1998). The test occurs in four stages. First, the participant is asked to categorize faces as black or white by pressing the left- or right-hand key. Next, the participant categorizes words as positive or negative in the same way. Third, words and faces are paired and a participant may be asked to press the left-hand key for a black face or positive word and the right-hand key for a white face or negative word. In the fourth and final stage, the task is the same as in Stage 3 but now black and negative are paired and white and good are paired. The test measures how fast people respond to the different pairs and in general the results show that people respond faster when liked faces are paired with positive words and similarly, when disliked faces are paired with negative words.

Check out the Project Implicit website at - <https://implicit.harvard.edu/implicit/>

15.2.6. Stigmatization of Mental Disorders

Excerpt from Module 1 of *Abnormal Behavior, 1st edition*, by Alexis Bridley and Lee Daffin - <https://opentext.wsu.edu/abnormal-psych/chapter/module-1-what-is-abnormal-psychology/>

Overlapping with prejudice and discrimination in terms of how people with mental disorders are treated is **stigma**, or when negative stereotyping, labeling, rejection, and loss of status occur. Stigma takes on three forms as described below:

- *Public stigma* - When members of a society endorse negative stereotypes of people with a mental disorder and discriminate against them. They might avoid them all together resulting in social isolation. An example is when an employer intentionally does not hire a person because their mental illness is discovered.
- *Label avoidance* - In order to avoid being labeled as “crazy” or “nuts” people needing care may avoid seeking it all together or stop care once started. Due to these labels, funding for mental

health services could be restricted and instead, physical health services funded.

- *Self-stigma* - When people with mental illnesses internalize the negative stereotypes and prejudice, and in turn, discriminate against themselves. They may experience shame, reduced self-esteem, hopelessness, low self-efficacy, and a reduction in coping mechanisms. An obvious consequence of these potential outcomes is the *why try* effect, or the person saying 'Why should I try and get that job. I am not worthy of it' (Corrigan, Larson, & Rusch, 2009; Corrigan, et al., 2016).

Another form of stigma that is worth noting is that of **courtesy stigma** or when stigma affects people associated with the person with a mental disorder. Karnieli-Miller et. al. (2013) found that families of the afflicted were often blamed, rejected, or devalued when others learned that a family member had a serious mental illness (SMI). Due to this they felt hurt and betrayed and an important source of social support during the difficult time had disappeared, resulting in greater levels of stress. To cope, they had decided to conceal their relative's illness and some parents struggled to decide whether it was their place to disclose versus the relative's place. Others fought with the issue of confronting the stigma through attempts at education or to just ignore it due to not having enough energy or desiring to maintain personal boundaries. There was also a need to understand responses of others and to attribute it to a lack of knowledge, experience, and/or media coverage. In some cases, the reappraisal allowed family members to feel compassion for others rather than feeling put down or blamed. The authors concluded that each family "develops its own coping strategies which vary according to its personal experiences, values, and extent of other commitments" and that "coping strategies families employ change over-time."

Other effects of stigma include experiencing work-related discrimination resulting in higher levels of self-stigma and stress (Rusch et al., 2014), higher rates of suicide especially when treatment is not available (Rusch, Zlati, Black, and Thornicroft, 2014; Rihmer & Kiss, 2002), and a decreased likelihood of future help-seeking intention in a university sample (Lally et al., 2013). The results of the latter study also showed that personal contact with someone with a history of mental illness led to a decreased likelihood of seeking help. This is important because 48% of the sample stated that they needed help for an emotional or mental health issue during the past year but did not seek help. Similar results have been reported in other studies (Eisenberg, Downs, Golberstein, & Zivin, 2009). It is important to also point out that social distance, a result of stigma, has also been shown to increase throughout the life span suggesting that anti-stigma campaigns should focus on older people primarily (Schomerus, et al., 2015).

One potentially disturbing trend is that mental health professionals have been shown to hold negative attitudes toward the people they are there to serve. Hansson et al. (2011) found that staff members at an outpatient clinic in the southern part of Sweden held the most negative attitudes about whether an employer would accept an applicant for work, willingness to date a person who had been hospitalized, and hiring a patient to care for children. Attitudes were stronger when staff treated patients with a

psychosis or in inpatient settings. In a similar study,

Martensson, Jacobsson, and Engstrom (2014) found that staff had more positive attitudes towards persons with mental illness if their knowledge of such disorders is less stigmatized, their work places were in the county council as they were more likely to encounter patients who recover and return to normal life in society compared to municipalities where patients have long-term and recurrent mental illness, and they have or had one close friend with mental health issues.

To help deal with stigma in the mental health community, Papish et al. (2013) investigated the effect of a one-time contact-based educational intervention compared to a four-week mandatory psychiatry course on the stigma of mental illness among medical students at the University of Calgary. The course included two methods involving contact with people who had been diagnosed with a mental disorder - patient presentations or two, one-hour oral presentations in which patients shared their story of having a mental illness; and "clinical correlations" in which students are mentored by a psychiatrist while they directly interacted with patients with a mental illness in either inpatient or outpatient settings. Results showed that medical students did hold a stigma towards mental illness and that comprehensive medical education can reduce this stigma. As the authors stated, "These results suggest that it is possible to create an environment in which medical student attitudes towards mental illness can be shifted in a positive direction." That said, the level of stigma was still higher for mental illness than it was for a stigmatized physical illness, type 2 diabetes mellitus.

What might happen if mental illness is presented as a treatable condition? McGinty, Goldman, Pescosolido, and Barry (2015) found that portraying schizophrenia, depression, and heroin addiction as untreated and symptomatic increased negative public attitudes towards people with these conditions but when the same people were portrayed as successfully treated, the desire for social distance was reduced, there was less willingness to discriminate against them, and belief in treatment's effectiveness increased in the public.

Self-stigma has also been shown to affect self-esteem, which then affects hope, which then affects quality of life among people with SMI. As such, hope should play a central role in recovery (Mashiach-Eizenberg et al., 2013). Narrative Enhancement and Cognitive Therapy (NECT) is an intervention designed to reduce internalized stigma and targets both hope and self-esteem (Yanos et al., 2011). The intervention replaces stigmatizing myths with facts about the illness and recovery which leads to hope in clients and greater levels of self-esteem. This may then reduce susceptibility to internalized stigma.

Stigma has been shown to lead to health inequities (Hatzenbuehler, Phelan, & Link, 2013) prompting calls for stigma change. Targeting stigma leads to two different agendas. The *services agenda* attempts to remove stigma so the person can seek mental health services while the *rights agenda* tries to replace discrimination that "robs people of rightful opportunities with affirming attitudes and behavior" (Corrigan, 2016). The former is successful when there is evidence that people with mental illness are seeking services more or becoming better engaged while the latter is successful when there is an increase in the number of people with mental illnesses in the workforce and receiving reasonable

accommodations. The federal government has tackled this issue with landmark legislation such as the Patient Protection and Affordable Care Act of 2010, Mental Health Parity and Addiction Equity Act of 2008, and the Americans with Disabilities Act of 1990 though protections are not uniform across all subgroups due to “1) explicit language about inclusion and exclusion criteria in the statute or implementation rule,

2) vague statutory language that yields variation in the interpretation about which groups qualify for protection, and 3) incentives created by the legislation that affect specific groups differently” (Cummings, Lucas, and Druss, 2013).

15.2.7. Mob Behavior

I am sure you have seen footage on television of looters breaking into stores and taking what they want. Why might such spontaneous behavior occur? One possible explanation is what is called **deindividuation** or when we feel a loss of personal responsibility when in a group. Another explanation is what is called the **snowball effect** or when one dominant personality convinces others to act and then these others convince more and so forth. Finally, mob behavior may occur due to the fact that large groups provide protection in the form of anonymity making it hard for the police to press charges.

15.2.8. Social Influence - Obedience

In Section 15.1.7 and 15.1.8 we discussed two types of social influence to include compliance and conformity. You might say that both can lead to behavior for good. There are times when we need to conform to a larger group and we comply to the requests of advertisers all the time. Really, not much harm is done though there is a degree of manipulation in compliance. A third type of social influence might be described as compliance with a command, or when one person orders another to engage in some behavior. This is called **obedience**.

Milgram (1963) conducted the seminal research on obedience and found that 65% of participants would shock another human being to death, simply because they were told to. His design consisted of two individuals - a naïve participant and like with Asch’s study, a confederate. The experimenter asked the confederate to choose either heads or tails when a coin was flipped. The confederate always won and chose to be the learner, leaving the participant to be the teacher. The learner was taken to a small room where he was hooked up to wires and electrodes by the experimenter, all while the teacher watched. After this, the teacher was taken to an adjacent room and sat in front of a shock generator. His task was to read a list of word pairs to the learner and once through the list, state one of the words and wait for the learner to identify the other word in the pair. If the learner was correct the teacher would proceed to the next word in the list and wait for the learner to state its pair. If wrong, the teacher was to deliver a shock to the learner and with subsequent incorrect answers, continue to the next higher voltage. The

shock generator started at 30 volts and moved up in increments of 15 volts, to a max of 450 volts which would kill the learner. As the experiment proceeded, the learner would occasionally scream, holler, beg to be let go, complain about a heart condition, or say nothing. When these behaviors occurred was scripted but the reaction of the teacher was not. Often, he would turn to the experimenter and suggest that maybe the experiment should be stopped. The experimenter would state one of a few different replies to include, "The experiment requires that you continue," "You have no other choice. You must go on," or "Please continue." Again, results showed that 65% of participants, who were all male in the initial study, continued on to the point of shocking the learner to death.

So what might increase or decrease obedience? In terms of reducing obedience, if the learner was in the same room and only a few feet away, obedience fell to 40%. If the teacher had to place the learner's hand on the shock plate, obedience fell to 30%. If the experimenter was not physically present in the room but gave his commands from over the phone, obedience fell to 20.5%. If two authorities were present but one insisted the teacher go on while the other insisted that the teacher stop, obedience fell to 0%. Obedience increased to 92.5% if instead of the teacher administering the shock he told a peer to do so (incidentally, also a confederate). What about women? Do you think they might do better or worse? Results showed that they did the same - 65% of women took the learner to maximum shock.

Of course, one explanation for the results was that they were conducted over 50 years ago and people today would never do such a thing. I suggest you examine the following if you believe this is true (Burger, 2009):

<https://www.apa.org/pubs/journals/releases/amp-64-1-1.pdf>

15.3. EXPLAINING BEHAVIOR, FOR BETTER OR WORSE, THROUGH VALUES

Section Learning Objectives

- Define and list types of values.
- Outline methods to measure values.
- Clarify how values demonstrate both universality and diversity in behavior.
- Outline sources of individual differences in basic values.
- Show how values relate to personality.
- Describe how values predict real-world outcomes.

So how might we explain the behaviors mentioned above, whether for better or worse? One possible way, and please be clear, this is not the only way, is to examine universal human values. We have addressed some possible reasons why the behaviors in question in this module and others occur, but values could be a unifying construct that explains them all on some level. Read Section 15.3 and then decide for yourself.

15.3.1. Defining Values

Values have six main components that define them (Schwartz, 1992, 2005a). First, they are beliefs with emotional aspects. If a person is independent and can achieve it, they are happy. If their independence is threatened, they become highly vigilant, and if it is taken from them, they become upset. Second, values are not linked to specific actions or situations but define behavior in all situations. This is unlike norms which are particular to certain actions or situations. Third, they are linked to specific goals. Fourth, they are ordered meaning some values are promoted above others. Fifth, they are relative. In any given situation, more than one value is relevant. For instance, a religious person pursues conservation values at the expense of openness to change values such as Hedonism, Stimulation, and Self-Direction. Sixth, values are standards by which we can judge our behavior. If our behavior is consistent with our values, this process occurs subconsciously but if behavior is not, it raises our values to conscious awareness. So when taken together, a **value** is a (1) belief (2) pertaining to desirable end states or modes of conduct, that (3) transcends specific situations; (4) guides selection or evaluation of behavior, people, and events; and (5) is ordered by importance relative to other values to form a system of value priorities (Schwartz, 1994).

There are ten main values arranged around two main axes. On the one axis, you have Openness to Change values versus Conservation values. Openness to Change includes Hedonism or the pursuit of pleasure, Stimulation or pursuing novelty or excitement in life, and Self-direction or independent thought and action. Opposed to these are Conservation values which include Conformity or following social norms, Tradition or following the customs of your group, and Security or stability and safety. The other axis consists of Self-Enhancement values such as Power or social status and prestige or control over people and resources and Achievement or personal success through demonstrating competence as defined by society. Opposed to them are Self-transcendence values which include Benevolence or care and concern for those in your in-group and Universalism or care for all others.

There is also a shared motivational emphasis of adjacent value types such that:

- **Power and achievement** emphasize social superiority and esteem
- **Achievement and hedonism** focus on self-centered satisfaction
- **Hedonism and stimulation** involve a desire for affectively pleasant arousal

- **Stimulation and self-direction** involve intrinsic interest in novelty and mastery
- **Self-direction and universalism** call for reliance upon one's own judgment and comfort with the diversity of existence
- **Universalism and benevolence** are concerned with enhancement of others and transcendence of selfish interests
- **Benevolence and conformity** involve a call for normative behavior that promotes close relationships
- **Benevolence and tradition** promote devotion to one's in-group
- **Conformity and tradition** entail subordination of self in favor of socially imposed expectations
- **Tradition and security** stress preserving existing social arrangements that give certainty to life
- **Conformity and security** emphasize protection of order and harmony in relations
- **Security and power** stress avoiding or overcoming the threat of uncertainties by controlling relationships and resources.

The motivational differences between the various values are continuous, not discrete, with greater overlap in meaning near the boundaries of adjacent value types.

15.3.2. Measuring Values

15.3.2.1. The Schwartz Value Survey (SVS; Schwartz, 1992, 2005a). The first instrument developed to measure values based on this framework is the Schwartz Value Survey (SVS; Schwartz, 1992, 2005a). The SVS presents two lists of value items. The first contains 30 items that describe potentially desirable end-states in noun form; the second contains 26 or 27 items that describe potentially desirable ways of acting in adjective form. Each item expresses an aspect of the motivational goal of one value. An explanatory phrase in parentheses following the item further specifies its meaning. For example, 'EQUALITY (equal opportunity for all)' is a universalism item; 'PLEASURE (gratification of desires)' is a hedonism item.

Respondents rate the importance of each value item "as a guiding principle in MY life" on a 9-point scale labeled 7 (of supreme importance), 6 (very important), 5 (unlabeled), 4 (unlabeled), 3 (important), 2 (unlabeled), 1 (unlabeled), 0 (not important), -1 (opposed to my values). The nonsymmetrical nature of the scale is stretched at the upper end and condensed at the bottom so as to be able to map the way people think about values but also allows respondents to report opposition to values that they try to avoid expressing or promoting. This is especially important for cross-cultural studies as people in one culture may reject values held dear in other cultures. The SVS has been translated into 48 languages.

The score for the importance of each value is the average rating given to items designated *a priori* as markers of that value. The number of items assessing each value ranges from three for hedonism to eight for universalism. Only value items that have demonstrated near-equivalence of meaning across cultures are included in the indexes. Alpha reliabilities of the 10 values average .68, ranging from .61

for tradition to .75 for universalism (Schwartz, 2005b).

15.3.2.2. The Portrait Values Questionnaire. The Portrait Values Questionnaire (PVQ) is an alternative to the SVS developed to measure the ten basic values in samples of children from age 11, the elderly, and persons not educated in Western schools that emphasize abstract, context-free thinking. The SVS had not proven suitable to such samples.

The PVQ includes short verbal portraits of 40 different people, gender-matched with the respondent (Schwartz, 2005b; Schwartz, et al., 2001). Each portrait describes a person's goals, aspirations, or wishes that point implicitly to the importance of a value. For example: "Thinking up new ideas and being creative is important to him. He likes to do things in his own original way" describes a person for whom self-direction values are important. "It is important to him to be rich. He wants to have a lot of money and expensive things" describes a person who cherishes power values.

For each portrait, respondents answer: "How much like you is this person? Potential responses include: very much like me, like me, somewhat like me, a little like me, not like me, and not like me at all. Participants' own values are inferred from their self-reported similarity to people described implicitly in terms of particular values. Participants are asked to compare the portrait to themselves rather than themselves to the portrait. Comparing other to self directs attention only to aspects of the other that are portrayed.

The verbal portraits describe each individual in terms of what is important to him or her. Thus, they capture the person's values without explicitly identifying values as the topic of investigation. The PVQ asks about similarity to someone with particular goals and aspirations (values) rather than similarity to someone with particular traits.

The number of portraits for each value ranges from three (stimulation, hedonism, and power) to six (universalism). The score for the importance of each value is the average rating given to these items. Alpha reliabilities of the ten values average .68, ranging from .47 for tradition to .80 for achievement (Schwartz, 2005b).

15.3.3. Cross-Cultural Variation in Values: Universality and Diversity

Schwartz and Sagiv (1995) found substantial support for the claim that ten motivationally distinct value types are recognized across cultures and used to express value priorities. In terms of common cross-cultural variations in the locations of single values, spiritual life emerged most commonly in benevolence, universalism, or tradition regions, implying a broad meaning of transcendence of the material interests of the self. What differs are the reasons for transcending self interest implied by the locations. For instance, the welfare of close others is located in benevolence, the welfare of all others in universalism, and the demands of transcendent authority in tradition. The different locations may represent something about the nature of spirituality in different cultures.

In terms of 'self-respect,' it emerged with almost equal frequency in regions of achievement and self-direction values. In Communist countries, when emerging with achievement values, self-respect may be built primarily on social approval obtained when one succeeds according to social standards. Self-respect emerged in the achievement region in almost all Eastern European samples possibly reflecting a socializing impact of *communism* with its emphasis on grounding self-worth in evaluation of one's group. In Capitalist countries, when emerging with self-direction values, self-respect may be linked more closely to living up to one's independent, self-determined standards. Self-respect emerged in the self-direction region in most strongly *capitalist* countries (Schwartz and Sagiv, 1995).

Schwartz and Sagiv (1995) also report that 'healthy' emerged most frequently in the region of security values signifying a concern for physical and/or psychological safety (i.e. maintaining health and avoiding illness). It emerged less frequently with hedonism values signifying a meaning of enjoying the pleasures of a healthy body rather than fearing ill-health. Not infrequently, it emerged in the region of achievement, which falls between security and hedonism.

For the Japanese, 'true friendship' was located in the security values region in the total sample and split half analyses. This may mean that for these students, friendship is valued more for the security it provides rather than for the care it expresses toward close others. For the Japanese, forgiving was located in the middle of the universalism rather than the benevolence value region in all analyses. This implies that forgiving is motivated more by an appreciation of life's complexities (universalism) than by a desire to be kind to others (benevolence) (Schwartz and Sagiv, 1995).

Three sets of data measuring values differently (the SVS, PVQ, and World Value Survey; sample sizes of 41,968 across 67 countries, 42,359 across 19 European countries, and 84,887 from 62 countries, respectively) addressed the question of how much do values vary across countries and to what extent do citizens within a country share values (Fischer and Schwartz, 2010). Results show that there was greater consensus than disagreement on value priorities across countries with autonomy, relatedness, and competence showing a universal pattern of high importance. Only conformity values seem to measure culture as shared meaning systems.

15.3.4. Sources of Individual Differences in Basic Values

15.3.4.1. Processes linking background variables to value priorities. People's life circumstances provide opportunities to pursue or express some values more easily than others. For example, wealthy persons can pursue power values more easily, and people who work in the free professions can express self-direction values more easily. Life circumstances also impose constraints against pursuing or expressing values. Having dependent children constrains parents to limit their pursuit of stimulation values. People with strongly ethnocentric peers find it hard to express universalism values. In other words, life circumstances make the pursuit or expression of different values more or less rewarding or costly.

Typically, people adapt their values to their life circumstances. They upgrade the importance they attribute to values they can readily attain and downgrade the importance of values whose pursuit is blocked (Schwartz & Bardi, 1997). Thus, people in jobs that afford freedom of choice increase the importance of self-direction values at the expense of conformity values (Kohn & Schooler, 1983). Upgrading attainable values and downgrading thwarted values applies to most, but not to all values. The reverse occurs with values that concern material well-being and security. When such values are blocked, their importance increases; when they are attained easily, their importance drops. Thus, people who suffer economic hardship and social upheaval attribute more importance to power and security values than those who live in relative comfort and safety (Inglehart, 1997).

15.3.4.2. Age and life course. As people grow older, they tend to become more embedded in social networks, more committed to habitual patterns, and less exposed to arousing and exciting changes and challenges (Glen, 1974). This implies that conservation values (tradition, conformity, security) should increase with age and openness to change values (self-direction, stimulation, hedonism) decrease. Once people enter families of procreation and attain stable positions in the occupational world, they tend to become less preoccupied with their own strivings and more concerned with the welfare of others (Veroff, Reuman, & Feld, 1984). This implies that self-transcendence values (benevolence, universalism) increase with age and self-enhancement values (power, achievement) decrease over time.

15.3.4.3. Gender. Various theories of gender differences have lead researchers to postulate that men emphasize agentic-instrumental values such as power and achievement, while females emphasize expressive-communal values such as benevolence and universalism (Schwartz & Rubel, 2005). Most theorists expect gender differences to be small. Analyses with the SVS and PVQ instruments across 68 countries yield similar results. Gender differences for eight values are consistent, statistically significant, and small; differences for conformity and tradition values are inconsistent. It is important to point out that women gave higher priority than men to tradition values in all 20 European Social Survey (ESS) countries but conformity values in only 13 countries.

So, sex differences were highly consistent for power (men higher in 96% of the samples) and benevolence (women higher in 90% of the samples). Differences were quite consistent for stimulation (men higher), universalism (women higher), hedonism (men higher), and achievement (men higher) and differences were a bit less consistent for self-direction values (men higher in 79%). Men attribute more importance to self-enhancement values (power, achievement) whereas women attribute more importance to self-transcendence values (universalism, benevolence).

In a follow-up study, Schwartz and Rubel-Lifschitz (2009) reexamined sex differences in value priorities across countries specifically to explore a potential relationship of values with gender equality. Previous research has shown that gender equality is correlated highly with such societal characteristics as country wealth, cultural autonomy, and democracy. This pattern led the researchers to assume positive associations of value priorities with benevolence, universalism, self-direction, stimulation, and hedonism, while correlating negatively with security, tradition, conformity, power, and achievement.

Though the correlations are in the same direction for both males and females, they may be stronger for one gender over the other, and due to this, changing societal conditions may increase the value's importance more sharply for that gender. Consider that universalism values have been shown to be more important to women (Schwartz & Rubel, 2005) and so if society increases its expectations of citizens to take part in civil rights movements, both genders will see a rise in the importance of the value but that the increase would be greater for women. Likewise, power values are greater for men (Schwartz & Rubel, 2005) and if society imposes sanctions against pursuing self-interest at the expense of others, both sexes will see a decrease in the importance of the value, but that the decrease will be smaller for men. It should be stated that some values may not hold greater importance to one gender.

To test the dynamics of this relationship, the authors used a strict probability sample representing citizens aged 15 and older in each of 25 countries (Study 1) or a sample of college students from 68 countries (Study 2) and administered either the Portrait Value Questionnaire (PVQ; Study 1) or the Schwartz Value Survey (SVS; Study 2). Results showed that the inherently greater importance of benevolence and universalism values for women and stimulation for men, increases positive effects of gender equality on these values for that gender compared to the other gender. For men, the greater importance placed on power and achievement values reduces the negative effects of gender equality on these values. No inherent link was hypothesized or found for either gender in regard to hedonism, security, conformity, or self-direction.

In the student sample only, self-direction values showed smaller sex differences in high gender equality countries while in low gender equality countries, men emphasized these values more than women. As self-direction values correlate with education and the ratio of women to men is greater in high as compared to low gender equality countries (119/100 and 49/100, respectively), it may be that greater equal expectations for independent thought in the universities of high gender equality countries explain this interesting finding.

15.3.5. Do Values Relate to Personality?

15.3.5.1. The Five Factor Model (FFM). Roccas, Sagiv, Schwartz, and Knafo (2002) examined the relationship of the big five personality traits and values by administering the Schwartz (1992) Values survey, NEO-PI, a positive affect scale, and a single item assessing religiosity to introductory to psychology students at an Israeli university. For Extraversion, it was found that values that define activity, challenge, excitement, and pleasure as desirable goals in life (i.e. stimulation, hedonism, and achievement) were important while valuing self-denial or self-abnegation, expressed in tradition values, was antithetical.

For Openness, values that emphasize intellectual and emotional autonomy, acceptance and cultivation of diversity, and pursuit of novelty and change (i.e. Universalism, Self-direction, and stimulation) were important while conformity, security, and tradition values were incompatible. Benevolence, tradition,

and to a lesser degree conformity, were important for Agreeableness while power and achievement correlated negatively. In terms of Conscientiousness (C), there was a positive correlation with security values as both share the goal of maintaining smooth interpersonal relations and avoiding disruption of social order and there was a negative correlation with stimulation, indicating an avoidance of risk as a motivator of C.

Finally, there was little association of values with the domain of Neuroticism but a closer inspection of the pattern of correlations with the facets of N suggests two components. First, the angry hostility and impulsiveness facets could be called extrapunitive since the negative emotion is directed outward and tends to correlate positively with hedonism and stimulation values and negatively with benevolence, tradition, conformity, and C values. Second, the anxiety, depression, self-consciousness, and vulnerability facets could be called intrapunitive since the negative emotion is directed inward. This component tends to correlate positively with tradition values and negatively with achievement and stimulation values.

15.3.5.2. Belief in a Just World. Lerner (1980) assumed that people need to believe in a just world (BJW) in which people get what they deserve and deserve what they get. Wolfradt & Dalbert (2003) investigated the relationship between BJW and the values of conformity, security, and self-direction as well as personality traits among 104 college students and 108 professionals. Participants completed the General Belief in a Just World Scale, NEO-FFI, and the 12 terminal values by Schwartz and Bilsky (1987). Results showed that BJW was negatively related to Openness to Experience and positively correlated with security and conformity.

15.3.6. The Ability of Values to Predict Real-World Outcomes

15.3.6.1. Everyday Behavior. Bardi and Schwartz (2003) generated ten sets of 6-10 behaviors that primarily express one of the ten basic values. Participants completed the SVS. Later, they rated how frequently they had performed each behavior in the past year, relative to their opportunities to perform it. The results showed that some values correlate more strongly with their relevant behaviors than others do. Why is that? The authors note that normative group pressure was greatest for security, conformity, benevolence, and achievement behaviors. Yielding to normative pressure, even when a behavior opposes one's own values, weakened value-behavior relations. Second, external pressure is weaker for behaviors that express values of little importance to the group, permitting the individual's personal values to have more influence. Tradition and stimulation values had especially low mean importance in these groups. Hence, priorities for these values showed stronger value-behavior correlations.

15.3.6.2. Cooperation. In relation to consumption behavior, Schwartz (1996) asked participants to complete the Schwartz Value Survey and then be paired with another student to play a game. Participants were to choose one of three alternatives for allocating money between self and a member

of their group whose identity was not revealed. Each would receive the amount of money they allocated to self plus the amount their partner allocated to them. The cooperative choice entailed taking the equivalent of 1€ for self and giving 0.8€ to the other. Compared to the other choices, this meant sacrificing a little of what one could gain (0.2€) and giving the maximum to the other. The other two choices were both not cooperative, maximizing either one's absolute gain (individualism) or relative gain (competing). The author found that benevolence correlated most positively and power most negatively with cooperation. These findings were replicated in another study using two new social-dilemma games that simulate interpersonal (Paired Charity Game) and intergroup (Group Charity Game) conflict (Sagiv, Sverdlik, and Schwarz, 2011). This study also showed that when an individual's value hierarchy was accessible, they explained their choices in terms of values that were both important to them and relevant to the situation.

15.3.6.3. Religiosity. In a study examining the relationship of values and religiosity, Schwartz and Huismans (1995) hypothesized that religiosity should correlate most positively with the priority given to the Tradition value and most negatively with Hedonism values. Religion was also hypothesized to have a positive correlation with conformity, benevolence, and security and have a negative correlation with stimulation and self-direction. Across two studies, results indicate that the most positive correlation was with tradition, the most negative correlation was with hedonism, and there were positive correlations with Benevolence, Conformity, and Security and negative correlations with Stimulation and Self-direction. The authors found cross-cultural differences such that pursuit of meaning values sometimes were correlated more highly with religiosity than were submission values (i.e. among Dutch Protestants and Spanish Catholics) and sometimes less highly (i.e. among Israeli Jews and Greek Orthodox). Other interesting findings were that Achievement showed consistent, small negative correlations with religiosity, Power showed near-zero correlations with religiosity, Universalism values consistently were correlated negatively with religiosity, and that security and benevolence correlations with religiosity were generally weak. The authors conclude that valuing certainty, self-restraint, and submission to superior external truths inclines people to become more religious whereas valuing openness to change and free self-expression inclines people to become less religious.

15.3.6.4. Readiness for out-group social contact. Sagiv & Schwartz (1995) explored how the value priorities of individuals influence their readiness for social contact with out-group members. Across two-studies, they found that value priorities were more strongly correlated with readiness for out-group contact in the Jewish sample than in two Arab samples. In terms of the two Arab samples, the correlation of readiness of Christian Arabs for contact with Israeli Jews was most positive for achievement and most negative for conformity. For Muslim Arabs, tradition was the most negative and benevolence was the most positive.

The authors offer two possible explanations for their findings. First, minority group members may view contact with dominant group members more in terms of group differences and characteristics. Their readiness for out-group contact may be more strongly influenced by their own group's norms, attitudes, and stereotypes toward the out-group. Second, they note that group membership is less salient for

members of dominant groups, and so they may view contact with minority group members in more individual terms. As such, they may be more influenced by their personal experiences and characteristics such as their values.

15.3.6.5. Values and voting. Barnea and Schwartz (1998) explored the relationship of values to voting behavior. The authors contrasted classical liberalism which calls for maximizing individual freedom in order to permit people to actualize their goodness with economic egalitarianism which refers to the distribution of income and other resources among societal members, emphasizing equality among individuals, the well-being of all, and cooperation and mutual responsibility. Parties were rated and ordered based on the extent to which they opposed the influence of religion on state legislation or favor it. The results showed that voters for parties rated as supporting liberal and secular positions attributed high importance to self-direction values and low importance to tradition and conformity values. Also, values were important guides to party choice when value-relevant cues were easily accessible (i.e. parties were ideologically distinctive) but when value-relevant distinction among parties were blurred, voting was found to be more influenced by demographic variables.

Module Recap

Well that's it. I mean truly it. We have come to the end of the road in this module and this book. I tried to present a balanced look at motivated behaviors which produce positive outcomes and those which produce negative outcomes by addressing eight on each side. Of course, there are numerous other examples throughout the book and I could have moved any content from this module to one of the preceding modules. I withheld them earlier for this grand finale at the end. You might think of it as a parade of behaviors. Though not the only explanation, I did try and provide one way of understanding all motivated behavior in the form of universal human values. Each behavior can be explained independent of the others, but values might be an underlying phenomenon offering some amount of explanatory power for all. You decide.

The purpose of this book was to function sort of like a capstone course would and tie together what seemed to be unrelated subfields in our discipline of psychology. I hope I was able to achieve that in the approximately 500 pages that make up this book, not counting the references, glossary, and index.

It has been my distinct pleasure to take you on this journey. Writing this book has been the focus of my motivated behavior for several months in 2018. With these final words, it is now complete.

Sincerely,

Lee W. Daffin Jr.

Glossary

A

ABC Charts - Charts used to record antecedents, behaviors, and consequences

Abnormal behavior - Behavior thought to be a combination of personal distress, psychological dysfunction, deviance from social norms, dangerousness to self and others, and costliness to society

Abolishing operation - When an event makes a reinforcer or punisher less potent and so less likely to occur

Absent-mindedness - When we forget to do things or have a lapse of attention such as not remembering where we put our keys

Acceptance techniques - A cognitive behavior modification strategy in which the person comes to accept that which he/she cannot change

Accommodation - When novel information is obtained we update an existing schema or create a brand new one

Achievement need - The desire to do things well, outperform others, and overcome obstacles

Action stage - The stage of change when the person engages in behavior change

Actor-observer bias - When the actor overestimates the influence of the situation on their own behavior while the observer overestimates the importance of the actor's personality traits on the actor's behavior (dispositional)

Acute pain - Pain that is brief, begins suddenly, has a clear source, and is adaptive

Adaptation - When schemas change due to direct experience with our environment

Adaptation energy - Your body's ability to deal with change or demands

Adherence - Our willingness or motivation to follow orders, as well as our ability to do so

Affect heuristic - Thinking with our heart and not our head

Affective forecasting - A cognitive process in which we anticipate how we will feel in the future when a similar situation arises or we complete our goal

Affective traits - Stable predispositions for how we respond to our world and lead us to react to events we experience in specific ways

Affiliation need - Our motive to establish, maintain, or restore social relationships with others, whether individually or through groups

Agreeableness - A personality trait characterized by being trusting and helpful

Alarm Reaction - Part of the General Adaptation Syndrome, this stage begins when the body recognizes that it must fight off some physical or psychological danger

Algorithms - A logical sequence of steps that always produces a correct solution to the problem

Altruism - When a person desires to maximize other's outcomes regardless of their own outcome

Altruistic behavior - When we help others for the sake of helping them

Amnesia - A condition in which an individual is unable to remember what happened either shortly before (retrograde) or after (anterograde) a head injury

Amygdala - The part of the brain responsible for evaluating sensory information and quickly determining its emotional importance

Analgesics - Painkillers

Anal Stage - Lasting from 2-3 years, the libido is focused on the anus as toilet training occurs

Animistic thinking - Assigning lifelike qualities to inanimate objects

Antecedents - Environmental events or stimuli that trigger a behavior

Apostasy - When a person completely abandons their faith and becomes nonreligious

Applied Science - The type of science which desires to find solutions to real-world problems

Appraisal - The process of interpreting the importance of a demand and how we might react to it

Archetypes - According to Jung, unlearned tendencies that allow us to experience life in a specific way

Assimilation - When new information is made to fit into existing schemas

Associative learning - When we link together two pieces of information sensed from our environment

Associative play - When two or more children interact with one another by sharing or borrowing toys or materials

Attachment - An emotional bond established between two individuals and involving one's sense of security

Attention - Our ability to focus on certain aspects of our environment at the exclusion of others

Attention Focused Exercises - Relaxation occurs when attention is directed to a neutral or pleasant stimulus

Attitude - A belief, feeling or tendency that we hold in regard to a person, a group of people, an idea, or an activity

Attitude object - What the attitude concerns

Attribution theory - States that people are motivated to explain their own and other people's behavior by attributing causes of that behavior to either something in themselves or a trait they have or to something outside the person

Authoritarian parenting style - A parenting style characterized by a controlling, rigid, and cold parent

Authoritative parenting style - Parents who set firm, clear limits on their child's behavior

Authority - We are more likely to comply with a request if it comes from someone who knows what they are talking about

Autonomic nervous system - Regulates functioning of blood vessels, glands, and internal organs such as the bladder, stomach, and heart; It consists of sympathetic and parasympathetic nervous systems

Autonomy - Defined as independence and a sense of control over one's life

Autonomy need - The desire to feel in control of our own actions rather than at the whim of outside forces, being independent, and self-reliant

Autonomy vs. shame and doubt - Erikson's second stage of personality development occurring from 18 to 36 months and when the child develops independence and autonomy if parents encourage exploration and freedom

Availability heuristic - A heuristic used when we make estimates about how often an event occurs based on how easily we can remember examples

Avoidance behavior - In operant conditioning, this is when we engage in behaviors to avoid a negative consequence due to prior learning

Awareness training - The stage of habit reversal in which the client must be aware of exactly what the habit is, when it occurs, in what situations, and with whom around

B

Babbling - Speechlike but meaningless sounds

Backup reinforcers - The regular reinforcers the person has in their life that come to be associated with tokens in a token economy

Base rate fallacy - When we overestimate the chances that some thing or event has a rare property, or we underestimate that something has a common property

Baseline Phase - The phase of behavior modification before any strategy or strategies are put into effect; serves as a comparison with the treatment phase

Basic evils - According to Horney, all the negative factors in a child's environment that can cause basic anxiety

Basic Science - The type of science concerned with the acquisition of knowledge for the sake of the knowledge and nothing else

Behavior - What people do, say, or think/feel

Behavioral deficit - A behavior we want to increase as it is currently either not being performed or being performed not at the desired level.

Behavioral definition - A precise, objective, unambiguous description of the target behavior or a competing behavior

Behavioral excess - A behavior that we want to decrease because it is causing us some type of trouble in our life

Bias - When current knowledge, beliefs, and feelings skew our memory of past events

Biologically prepared - The term coined by Martin Seligman which indicates that human beings are prepared to learn some associations over others

Blocking - When we experience the tip-of-the-tongue phenomena and just cannot remember something

Boomerang children - Children who leave home and come back due to an inability to make ends meet or find a job

Broaden-and-build model - Says positive emotions widen our cognitive perspective, aid us in thinking more broadly and creatively, build resources, and help us acquire new skills to face the challenge while

negative emotion promotes a narrow way of thinking

Buffering hypothesis - The idea that social support lessens or even eliminates the harmful effects of stress

Bystander effect - States the chances that we will aid someone needing help decreases as the number of bystanders increases

C

Calorie - A measure of energy

Cannon-Bard Theory of emotion - Says that an emotion and physiological response occur simultaneously

Cardinal traits - Traits that dominate the person's whole life

Case studies - A detailed description of one person or a small group based on careful observation

Central executive - Tells us where to focus our attention and can even home in on specific aspects of a stimulus

Central nervous system (CNS) - The control center for the nervous system which receives, processes, interprets, and stores incoming sensory information

Central traits - Central characteristics that form the basis of personality

Centration - The tendency to focus only on one aspect of a situation at the exclusion of others

Cephalocaudal principle - States that development proceeds from head (cephalo) to toe or tail (caudal)

Change - Anything, whether good or bad, that requires us to adapt

Change blindness - When we fail to notice a difference in two pictures presented in rapid succession, compared to side-by-side

Choice overload phenomenon - When having too many choices leaves us feeling frustrated, less satisfied, and regretful

Chronic pain - Pain which lasts for a long period of time and up to months or years, is fleeting (it comes and goes), disrupts normal patterns such as sleep and appetite, and is the result of a disease or injury

Chunking - Taking larger lists of unrelated and meaningless material and grouping them into smaller, meaningful units

Circadian rhythms - Affect fluctuations in wakefulness, metabolism, body temperature, and the release of hormones

Cognition need - A desire to understand and make reasonable the world of experience

Cognitive behavioral therapy - A type of therapy which focuses on exploring relationships among a person's thoughts, feelings and behaviors and seeks to reduce maladaptive cognitions

Cognitive closure need - Our desire to have answers, predictability, order and structure, be decisive, and avoid uncertainty

Cognitive coping skills training - A cognitive behavior modification strategy which teaches social skills, communication, and assertiveness through direct instruction, role playing, and modeling

Cognitive development - The type of development which focuses on changes in intellectual development and how they affect behavior

Cognitive dissonance theory - When you hold two contradictory cognitions, or thoughts, at the same time which cause a state of anxiety or discomfort

Cognitive restructuring, also called rational restructuring - A cognitive behavior modification strategy in which maladaptive cognitions are replaced with more adaptive ones

Collective unconscious - According to Jung, the part of the psyche which is the innate knowledge that we come into this world with

Commitment - According to Sternberg, the cognitive component of love and occurs when you decide you truly love the person

Commitment and consistency - States that once we have committed to a position we are more likely to display behavior consistent with our initial action when asked to comply with new requests

Common traits - Constructs that allow individuals within a given culture to be compared

Compensation hypothesis - A theory of religious attachment which states that insecurely attached individuals are motivated to compensate for the absence of a secure relationship with their parents by believing in a loving God

Competence need - The desire to feel that we are able to handle tasks and when we do so, to feel satisfaction

Competing behavior - A behavior which interferes with the successful completion of a target behavior

Competing response - In habit reversal, this is a behavior that is incompatible with the habit and makes its occurrence nearly impossible or difficult

Competition - An attempt to maximize one's own outcome relative to others

Compliance - Efforts to get a person to say yes, or to agree to a request

Compromise - When we attempt to find a solution that works for all parties

Concrete operations - Piaget's third stage of cognitive development in which children now understand conservation, reversibility, and cause and effect but their thinking is still grounded in concrete experiences and concepts

Conditioning - A type of associative learning involving the linking of two events

Conditions of worth - When our personal worth is contingent on acting right or saying the right things

Confirmation bias - Occurs when we seek information and arrive at conclusions that confirm our existing beliefs

Conformity - A type of social influence in which a person behaves the way others are behaving either so that they are accepted by the group or because they are unsure how to act

Conflict - Arises when we face two or more incompatible demands, opportunities, needs, or goals

Confrontation - When we attack a problem head on

Conscientiousness - A personality trait described as being organized, hardworking, reliable, disciplined, and careful

Consciousness - According to Freud, the level of personality that is the seat of our awareness

Consequence - The outcome of a behavior that either encourages it to be made again in the future or discourages its future occurrence.

Conservation - Understanding that an object is fundamentally the same despite changing its properties

Consolidation - When we stabilize and solidify a memory

Contemplation stage - The stage of change when change is seriously considered, but within the next six months

Contingency - When one thing occurs due to another

Control group - The group that does not receive the treatment or is not manipulated in an experiment

Control strategies - Tactics used to improve memory

Conventional morality - According to Kohlberg, the stage of moral development beginning around age 10 which focuses on obeying rules out of conformity and then moving to a law and order orientation

Cooperation - When the person wants to maximize joint outcomes

Cooperative play - When children play together and are engaged in the same task

Correlational research - A research method which examines the relationship between two variables or two groups of variables

Correspondent inference theory - A theory which provides one way to determine if a person's behavior is due to dispositional or situational factors and involves examining the context in which the behavior occurs

Counterconditioning - The reversal of previous learning

Courtesy stigma - When stigma affects people associated with the person with a mental disorder

Covariation theory - Says we rely on three kinds of information about behavior: distinctiveness, consensus, and consistency to determine its cause

Covert - Behavior cannot be observed

Critical thinking - Our ability to assess claims made by others and make objective judgments that are independent of emotion and anecdote and based on hard evidence

D

Daily hassles - Petty annoyances that over time take a toll on us

Dangerousness - When behavior represents a threat to the safety of the person or others

Decenter - Taking on multiple aspects of a situation

Deconversion - The process of leaving one's faith

Deductive reasoning - When the procedure needed to draw a conclusion is clear and only one answer is possible

Deferred imitation - When a behavior occurs but not in the presence of the model

Deindividuation - When we feel a loss of personal responsibility when in a group

Demand - Anything that has the potential to exceed a person's resources and cause stress if a solution is not found

Denial - Sometimes life is so hard all we can do is deny how bad it is

Dependent variable (DV) - The variable that is measured

Depth perception - The ability to perceive the world in three dimensions

Descriptive statistics - A type of statistic which provides a means of summarizing or describing data, and presenting the data in a usable form

Desensitization - When the client is exposed to fear producing stimuli in a gradual fashion and according to a fear hierarchy and then uses relaxation techniques to reduce sympathetic nervous system arousal; has two forms - systematic or in vivo

Developmental psychology - The subfield of psychology that studies patterns of growth, stability, and change that occur during the life span.

Dialectical reasoning - When an adult considers the validity of conflicting viewpoints by examining the evidence in support of and against each argument

Diaphragmatic breathing - Also called deep breathing; person breathes in a deep, slow rhythmic fashion

Differential reinforcement - When we attempt to get rid of undesirable or problem behaviors by using the positive reinforcement of desirable behaviors

Differential Reinforcement of Alternative Behavior (DRA) - When we reinforce the desired behavior and do not reinforce undesirable behavior

Differential Reinforcement of Incompatible Behavior (DRI) - This strategy delivers a reinforcer when another behavior is used instead of the problem behavior; we substitute the behavior

Differential Reinforcement of Low Rates of Responding (DRL) - When we want to reduce the occurrence of a behavior, not eliminate it

Differential Reinforcement of Other Behavior (DRO) - When we deliver a reinforcer contingent on the absence of an undesirable behavior for some period

Discounting principle - States that when more than one cause is possible for a person's behavior we

will be less likely to assign any cause

Discriminated behavior - When a behavior is more likely to occur in the presence of the SD and not the S Δ

Discrimination - When a person acts in a way that is negative against a group of people

Discrimination training - Involves the reinforcement of a behavior when one stimulus is present but extinguishing the behavior when a different stimulus is present

Discriminative stimuli (also called a SD) - When cues in the environment bring about a specific behavior

Disease - When there is physical damage within our body

Display rules - Standards or rules for when, where, and how our emotions can be communicated

Displacement - When we satisfy an impulse with a different object because focusing on the primary object may get us in trouble

Dispositional attribution - Something inside the person such as a trait that is the cause of behavior

Distal goal - A goal whose completion is far off in time

Distancing - When the person chooses not to deal with a situation for some time

Distracted - When one stimulus interferes with our attending to another

Distressors - Negative life events that have the ability to cause stress

Divergent thinking - Thinking that involves more than one possible solution and that is open-ended

Divided attention - When we focus on more than one stimulus at a time

Downward social comparison - When self-esteem is at stake, we tend to compare ourselves to others who are obviously less competent or successful

Drive - A state of tension which we want to resolve since it is uncomfortable

Drive reduction model - A model of motivation which proposes that we engage in motivated behavior to satisfy a deficient need which makes the drive or state of tension end

Duchenne smiles - Real smiles

E

Echolocate - Being able to find the direction a sound came from

Egalitarian - When a relationship becomes more balanced in terms of power and influence

Ego - According to Freud, the part of personality that attempts to mediate the desires of the id against the demands of reality, and eventually the moral limitations or guidelines of the superego

Ego - According to Jung, the part of the psyche which is the conscious mind and chooses which thoughts, feelings, or memories can enter consciousness

Egocentrism - When a child cannot take another person's point of view because they only see the world from their frame of reference

Ego-defense mechanisms - According to Freud, they protect us from the pain created by balancing both the will of the id and the superego, but are considered maladaptive if they are misused and become our primary way of dealing with stress

Ego integrity vs. despair - Erikson's eighth stage of personality development occurring during late adulthood and when the adult looks back over life, evaluates it, and comes to terms with the decisions that were made

Emotion focused coping (PFC) - Strategies we employ to deal with stress

Emotional disclosure - When a therapist has a client talk or write about negative events that lead to the expression of strong emotions

Emotions - Our immediate response to a situation that is personally meaningful and is intense but short-lived

Emphasizing the positive - When we focus on good things related to a problem and downplay negative ones

Empty nest syndrome - When parents have trouble dealing with their children leaving home

Enactive learning - Learning by doing

Encoding - When we pay attention to and take in information that can then be processed or moved to LTM

Episodic memory - The memory of a personally experienced event

Epistemology - The branch of philosophy that seeks to understand knowledge

Eros - Our life instincts which are manifested through the libido and are the creative forces that sustain life

Establishing operation - When an event makes a reinforcer or punisher more potent and so more likely to occur

Ethics - The branch of philosophy which studies what we ought to do or what is best to do

Eugenics - The social policy that stated that the most *fit* individuals in a society could be “encouraged” to breed which would lead to an improvement of inherited traits of the human race over generations

Eustressors - Positive life events that have the ability to cause stress

Evolutionary history - The shared history of a species and understanding why we act the way we do now

Evolutionary psychology - The area of psychology focused on discovering the evolutionary origins of human behaviors

Exhaustion - Part of the General Adaptation Syndrome, this is when a person runs out of adaptation energy and the ability to combat stress

Expectancy-value theory - States that a person’s likelihood to successfully complete a goal is dependent on their expectation of success multiplied by how valuable they deem success to be for them

Experiment - A controlled test of a hypothesis in which a researcher manipulates one variable and measures its effect on another variable

Experimental group - The group that receives the treatment or is manipulated in an experiment

Explicit memory - A type of LTM which includes the knowledge of facts and events

Extraversion - A personality trait that involves being sociable, seeking out social activity, being fun-loving, and affectionate

Extreme Stressors - Stressors that can move a person from demand to stress very fast

Extinction - When something that we do, say, think/feel has not been reinforced for some time and so the behavior begins to weaken and eventually stops

Extinction burst - When extinction first occurs, the person or animal is not sure what is going on and begins to make the response more often (frequency), longer (duration), and more intensely

Extrinsic religiosity - Called upon when needed as in times of crisis, is not part of the person's daily life, the individual sees faith and belief as superficial, religion is viewed as a means to an end, God is seen as punitive and stern, and the person believes they are under external control

F

Facial-feedback hypothesis - States that our facial muscles send information to the brain which aids in our recognition of the emotion we are experiencing

Fading - The gradual removal of a prompt(s) once the behavior continues in the presence of the SD

False consensus effect - When we believe that everyone holds the same opinion we do or acts just as we do

False uniqueness effect - The belief that our skills and abilities are unique to use

Fast mapping - When children ascertain the meaning of a word from how it's used in a sentence

Faith - Belief in the absence of proof

Fight-or-flight instinct - The strength to fight back or to flee when a threat presents itself in our environment

Fine motor skills - Small body movements

Fixated - According to Freud, when we become stuck at a stage, thereby affecting later development and possibly leading to abnormal functioning, or psychopathology

Fixed Interval schedule (FI) - When we reinforce after some set amount of time

Fixed Ratio schedule (FR) - With this schedule, we reinforce some set number of responses

Flooding - A respondent condition technique in which the person is exposed to the feared stimulus at full intensity for a prolonged period

Focalism - Overestimating to what extent we will think about the event in the future and to underestimate how other events will affect our thoughts and feelings

Forgiveness - Involves letting go of resentment and any thought we might have about getting revenge on someone for past wrongdoing

Formal operations - Piaget's fourth stage of cognitive development when teens become capable of abstract thinking and understand that ideas can be compared and classified, just as objects can

Friendship/liking - When we make ourselves seem extra likable to a person or compliment them in an attempt to have them comply with a request

Frustration - Occurs when a person is prevented from reaching a goal because something or someone stands in the way

Fully functioning person - Being open to experience, being very creative, living every moment to the fullest, assuming responsibility for their decisions, and finally not deriving their sense of self from others

Functional fixedness - When we focus on a typical use or familiar function of an object

Fundamental attribution error - An error in assigning a cause to another's behavior in which we automatically assume a dispositional reason for his or her actions and ignore situational factors

G

Gaps - Holes in the scientific literature of a given field that needs to be investigated

General Adaptation Syndrome - According to Selye, a series of three stages the body goes through when a demand is encountered in the world

Generalization training - When we reinforce behavior across situations until generalization occurs for the stimulus class

Generativity vs. stagnation - Erikson's seventh stage of personality development occurring during middle adulthood and when the adult focuses on leaving something behind in light of their pending death

Genital Stage - Beginning at puberty, sexual impulses reawaken and unfulfilled desires from infancy and childhood can be satisfied during lovemaking

Gestural prompt - Making gestures with your body to indicate the correct action the person should engage in

Glucose - A monosaccharide or a simple sugar that is one of the body's preferred sources of fuel

Goal - An objective or result we desire that outlines how we will spend our time and exert energy

Goal commitment/striving - Sticking to the goal

Goal difficulty - An indication of how hard it will be to obtain the goal

Goal level - Where our goals fall within a hierarchy

Goal specificity - How specific or clear our goal is and the plan to complete it

Gradual conversion - A type of conversion which takes time, as little as a few days up to several years, and may not even be noticed

Grit - The ability to focus and persevere over time

Gross motor skills - Large body movements

Guided compliance - Physically guiding the person through the activity which is meant to be aversive and in the future he or she should engage in the desire behavior to avoid the discomfort of being guided

H

Habit - An acquired behavior pattern regularly followed until it has become almost involuntary (<http://www.dictionary.com/browse/habit>)

Habit disorder - When a habit becomes annoying for others due to an increase in frequency, duration, and/or intensity

Habituation - When we simply stop responding to repetitive and harmless stimuli in our environment

Halo effect - When we hold a favorable attitude to traits that are unrelated

Health - The absence of disease

Hemingway effect - When people are motivated to continue with a task if they believe they are close to completing it and know what needs to be done to complete it

Heuristics - Mental shortcuts

Hierarchical integration - States that development goes from simple to complex

Hierarchy of Needs - Maslow's conception of needs in the form of a pyramid in which lower level needs had to be satisfied before upper level ones could be

Hindsight bias - Looking back over past events and claiming that we knew it all along

Holophrases - One word meant to represent a whole phrase

Homeostasis - A state of equilibrium or balance

Hunger - Desiring to eat

Hypothesis - A specific, testable prediction

Hypothetico-deductive reasoning - The use of the scientific method to test theories with hypotheses

I

Id - According to Freud, is the impulsive part of personality that expresses our sexual and aggressive instincts

Identification - This is when we find someone who has found a socially acceptable way to satisfy their unconscious wishes and desires and we model that behavior

Identity crisis - A period when teens choose between various alternatives presented to them

Identity vs. role confusion - Erikson's fifth stage of personality development occurring during adolescence and when teens try and figure out what is unique and distinct about themselves and what their strengths and weaknesses are

Illness - When we are sick and have been diagnosed

Illusory correlation - When a relationship between events appears to exist but really does not

Imaginary audience - The tendency of teenagers to feel that they are constantly being observed by others or that people are always judging them on appearance and behavior

Immune neglect - Failing to realize the role that defenses such as dissonance reduction, self-serving attributions, positive illusions, etc., play in recovering from negative emotional events when we attempt to predict our future emotional reactions

Impact bias - When we overestimate how long or how intense our reaction to a future event will be

Implicit attitude - When we are not aware we hold a prejudicial attitude against another group

Implicit memory - A type of LTM which includes knowledge based on prior experience and is called nondeclarative

Imprinting - The act of an animal following the first moving object they sense after birth

Incentives - Any reward or aversive stimulus that we come to expect in our environment

Inattentional blindness - When we miss a stimulus clearly present in our visual field when our

attention is focused on a task

Independence of systems - States that different systems in the body develop at different rates

Independent variable (IV) - The variable that is manipulated

Individualism - When a person is only concerned with maximizing his or her own outcome

Inductive reasoning - A type of reasoning used when there is no single correct solution to a problem

Industry vs. inferiority - Erikson's fourth stage of personality development occurring during middle childhood and when children are trying to meet the demands placed on them by more than just parents - by teachers, school administrators, and their peers

Inferential statistics - A type of statistics which allow for the analysis of two or more sets of numerical data

Informative social influence - Conforming because we are unsure how to act and the actions of other group members provide you with a cue

In-group/out-group bias - Our tendency to display favoritism toward our group and hold a negative view of members outside this group

Initiative vs. guilt - Erikson's third stage of personality development occurring from 3 to 7 years and when the child's views of themselves change as they face conflicts between their desire to act independent of their parents and do things on their own, and the guilt that comes from failure when they do not succeed

Insight learning - The spontaneous understanding of relationships

Instinct - Responding in predictable ways to certain stimuli

Instrumental - Done with the intent to fulfill a person's motive

Interference - When information that is similar to other information interferes in either storage or retrieval

Intellectualization - When we avoid emotion by focusing on intellectual aspects of a situation

Interpersonal attraction - Showing a preference for another person

Intimacy - According to Sternberg, the emotional component of love and involves how much we like, feel close to, and are connected to another person

Intimacy vs. isolation - Erikson's sixth stage of personality development occurring during early

adulthood and when the adult focuses on forming a stable romantic relationship

Intrinsic religiosity - A deep, personal religious belief and the individual can best be described as unselfish, altruistic, centered on faith, believing in a loving and forgiving God, anti-prejudicial, seeing people as individuals, and accepting without any reservations

J

James-Lange Theory of emotion - Says that an emotion occurs *after* a physiological reaction to an event in our environment

Just world hypothesis - The belief that good things happen to good people and bad things happen to bad people

K

L

Laboratory observation - A research design which involves observing people or animals in a laboratory setting

Lapse - When we make a mistake or slip up

Latency Stage - From 6-12 years of age, children lose interest in sexual behavior and boys play with boys and girls with girls

Learning - Any relatively permanent change in behavior due to experience and practice

Levels of processing theory - States that our memory is dependent on the depth of processing that information receives, either shallow or deep

Libido - The psychic energy that drives a person to pleasurable thoughts and behaviors

Literature review - When we conduct a literature search through our university library or a search engine such as Google Scholar to see what questions have been investigated already and what answers have been found

Load theory of attention - Posits that we can attend to task-irrelevant stimuli since only some of our cognitive resources have been used when engaged in low-load tasks, but high load tasks do not leave us any resources to process other stimuli

Locus of control - The extent to which we believe we control the important events of our life

Long-term memory - Holds a great deal of information for an indefinite period of time, possibly for decades

Logic - The branch of philosophy which focuses on the structure and nature of arguments

M

Maintenance Phase - The phase of behavior modification which follows the treatment phase and which involves the continued measurement of our behavior to ensure that the strategies we used to bring about meaningful behavioral change stand the test of time and future or unforeseen temptations

Meaning need - Our desire to make sense of our life and can be made salient by personal tragedies

Memory - The cognitive process we use to retain and retrieve information for later use

Menarche - The first menstruation

Menopause - The cessation of monthly menstrual cycles

Mental disorders - Characterized by psychological dysfunction which causes physical and/or psychological distress or impaired functioning and is not an expected behavior according to societal or cultural standards

Mental set - When we attempt to solve a problem using what worked well in the past

Metacognition - Thinking about our thinking

Metamemory - Thinking about our memory

Metaphysics - The branch of philosophy which studies the nature of reality, what exists in the world, what it is like, and how it is ordered

Microexpressions - Facial expressions that are made briefly, involuntarily, and last on the face for no more than 500 milliseconds

Midlife crisis - When an individual may discover he or she no longer obtains satisfaction from their job or personal life and attempts to make drastic changes

Midlife transition - When we assess the past and create new goals for the future

Mindfulness - Asks the individual to redirect their past- and future- directed thoughts to the present and the problem at hand

Misattribution - When we believe a memory comes from one source when it really came from another source

Mood - An affective state that fluctuates over time, is relatively mild and can last for hours, days, or weeks

Moro reflex - When an infant hears a loud sound or sees a movement, it will flex its thighs and knees, throw its arms out and then bring them together as if embracing someone, and briefly cry

Motherese - Infant-directed speech

Motivating operations - When an event make a reinforcer or punisher more or less reinforcing or punishing

Motivation - Being moved into action or engaging in behavior directed to some end

Motive - An individual's natural proclivity to approach things that are positive while avoiding those that are negative

Multi-method research - Using more than one research design to test a hypothesis

N

Natural selection - The idea that individuals in a species show a wide range of variation due to differences in their genes and that those with characteristics better suited to their environment will survive and pass these traits on to successive generations

Naturalistic observation - A research design in which the scientist studies human or animal behavior in its natural environment which could include the home, school, or a forest

Near-death experiences (NDEs) - Include an awareness of being dead, an out-of-body experience, moving through a tunnel, undertaking a life review, and/or meeting with those long gone

Need - A deficiency in some resource that our body needs

Negative feedback loop - When our desired state is less or greater than the actual state, we engage in behaviors to bring them in line with one another. Once done, this information is sent to the brain so

actions taken to deal with the deficiency are ceased and the body is at equilibrium

Negative Punishment (NP) - This is when something good is taken away or subtracted making a behavior less likely in the future

Negative Reinforcement (NR) - When something bad or aversive is taken away or subtracted due to your actions, making it that you will be more likely to make the same behavior in the future when some stimuli presents itself

Neonate - Newborn

Nervous habits - Habits which occur when we are in a state of heightened arousal and nervous tension, generally causing no harm though they can be a nuisance

Neurons - Nerve cells

Neuroticism - A personality trait characterized by being anxious, insecure, or engaging in self-pity

Nonassociative learning - A type of learning in which there is no linking of information or observing the actions of those around you

non-Duchenne smiles - Fake smiles

Normative social influence - Conforming because we want to be accepted by a group

O

Obedience - When a person is ordered to engage in some type of motivated behavior

Obesity - Defined as having a body mass index or BMI of 30 or higher

Object permanence - Knowing that an object continues to exist even though we cannot see it

Observational learning - Learning by watching others

Onlooker play - When a child waits for the right moment to jump in and then does so

Openness - A personality trait which involves being imaginative, curious, unconventional, and independent

Operant conditioning - A type of associate learning which focuses on consequences that follow a response or behavior that we make (anything we do, say, or think/feel) and whether it makes a behavior more or less likely to occur

Opportunity costs - When we engage in motivated behavior at the expense of other, potentially attractive, options

Oral Stage - Beginning at birth and lasting to 24 months, the libido is focused on the mouth and sexual tension is relieved by sucking and swallowing at first, and then later by chewing and biting as baby teeth come in

Orienting response - When a stimulus which we habituated changes in some way and regains our attention

Out-group homogeneity - Our tendency to see members of an outgroup as being more similar than members of our ingroup

Overcorrection procedures - When a person is expected to engage in effortful behavior for an extended period after the occurrence of an undesirable behavior

Overt - Behavior that is observable

Overweight - Defined as a BMI of 25-29.9

P

Pain - A sharp unpleasant sensation usually felt in some specific part of the body (from Merriam-Webster dictionary online)

Parallel play - Between 1 ½ and 2 years of age, children play side-by-side, doing the same thing or similar things, but not interacting with each other

Parasympathetic nervous system - The part of the autonomic nervous system that calms the body after sympathetic nervous system arousal

Passion - According to Sternberg, the motivational component of love involving attraction, romance, and sex

Perceived self-interest - When we help someone with an expectation of a specific form of repayment

Perception - The act of assigning meaning to raw sensory data

Perceptual load - How difficult a task is

Perceptual set - The influence of our beliefs, attitudes, biases, stereotypes, and mood on how we perceive and respond to events in our world

Peripheral nervous system - Consists of everything outside the brain and spinal cord; It handles the CNS's input and output and divides into the somatic and autonomic nervous systems

Permissive (indulgent) parenting style - Parents who provide inconsistent and lax feedback, require little of their children, and do not feel like they have much to do with how their children turn out

Persistence - When unwanted memories continue and are not forgotten

Personal disposition - A trait that is unique to the person and so comparisons cannot be made

Personal fable - A teen's unrealistic sense of their own uniqueness

Personal history - The history of one's own life

Personal unconscious - According to Jung, the part of the psyche which includes anything which is unconscious, but can be brought into consciousness

Personality - An individual's unique pattern of thoughts, feelings, and behaviors that persists over time and across situations

Personality assessment - The measurement of personality

Personality inventories - Objective tests that ask the participant questions about their behavior and feelings in different situations and uses numbered scales

Personality traits - A specific set of behaviors or habits that persist over time and across situations

Persuasion - A premeditated and intentional effort to change someone's attitude

Phallic Stage - Occurring from about age 3 to 5-6 years, the libido is focused on the genitals and children develop an attachment to the parent of the opposite sex and are jealous of the same sex parent

Philosophy - The love and pursuit of knowledge

Physical development - Includes changes in the body's size and shape and how the body's composition determines behavior

Physical energy - A type of resource that includes having the glucose necessary to sustain the activity

Physical prompt - Guiding the person through physical contact to make the correct response

Pineal gland - Receives signals from the SCN and increases production of the hormone *melatonin*

Positive practice - A form of overcorrection in which a person is made to engage in the correct form of

the behavior over and over again

Positive psychology - The subfield of psychology which studies happiness, love, hope, optimism, life satisfaction, goal setting, leisure, and subjective well-being using quantitative methods

Positive Punishment (PP) - If something bad or aversive is given or added, then the behavior is less likely to occur in the future

Positive regard by others - When a person is loved and accepted exactly as they are right now

Positive Reinforcement (PR) - If something good is given or added, then the behavior is more likely to occur in the future

Positive self-regard - When we see ourselves in a favorable light and feel accepted by others

Postconventional morality - According to Kohlberg, the stage of moral development which most never reach in which laws are seen as immoral and needing change and universal ethical principles are focused on

Postformal thought - Realizing that more than one answer can be correct

Power need - A desire to exert influence over others, to be in charge, to be noticed, and to achieve high status

Preconscious - According to Freud, the level of personality that includes all of our sensations, thoughts, memories, and feelings

Precontemplative stage - The stage of change when the person is not considering making a change and even resists the idea

Preconventional morality - According to Kohlberg, the stage of moral development up to age 10 in which children obey rules because they are afraid of being punished and later to gain a reward

Prejudice - When someone holds a negative belief about a group of people

Prelinguistic communication - The type of communication that occurs before language is possible

Preoperational stage - Piaget's second stage of cognitive development characterized by acquisition of the symbolic function

Preparation stage - The stage of change when the person gets ready to change within the next month

Presbycusis - Not being able to hear high-pitched, high-frequency sounds

Presbyopia - The loss of near vision

Pressure - When we feel forced to speed up, intensify, or shift direction in our behavior

Primary aging - Naturally occurring changes during adulthood

Primary appraisal (PA) - When a demand is detected we must decide if this is something we need to worry about

Principle of least effort - When a person can choose between two incentives which have approximately the same incentive value, he/she will choose the one that is easiest to achieve

Problem focused coping (PFC) - Strategies we employ to deal with a demand

Problems - When we cannot achieve a goal due to an obstacle that we are unsure how to overcome

Procedural memory - Memory of how to complete a task

Processing capacity - How much information we can handle

Projection - When we attribute threatening desires or unacceptable motives to others

Projective tests - A type of personality test which probes our unconscious mind

Prompts - A stimulus that is added to the situation and increases the likelihood that the desirable response will be made when it is needed

Prompt delay - When you present the SD and then wait for the correct response to be made

Prompt fading - When the prompt is gradually removed as it is no longer needed; can fade within a prompt or across prompts

Propositional thought - When teens gain the ability to examine the logic of verbal statements without referring to real world situations

Proselyte - The person who undergoes conversion

Prosocial behavior - Any act we willingly make that is meant to help others, whether the 'others' are a group of people or just one person

Prospective memory - Remembering to do tasks in the future

Proximal goal - A goal whose completion is close in time; also called subgoals

Proximodistal principle - States that development proceeds from near (proximo) to far (distal)

Psychology - The scientific study of behavior and mental processes

Psychosomatic disorders - Disorders in which the individual has real symptoms with a psychological cause

Public goods dilemma - When individuals must decide whether to contribute in order to establish or sustain a public good such as public television or a charity

Pull - A type of motivation which arises from *outside* of us

Punishment - Due to the consequence, a behavior/response is less likely to occur in the future

Push - A type of motivation which arises from *within* or is an internal source of motivated behavior

Q

Quest orientation - A person who is ready to face existential questions and looks for 'truth,' views religious doubt as positive, is open to change, and is humanitarian

R

Random assignment - When participants have an equal chance of being placed in the control or experimental group

Reaction formation - When an impulse is repressed and then expressed by its opposite

Reappraisal - Our reassessment of a situation after some time has passed and we have had time to rethink it

Receptor cells - The cells that detect in these sensory organs

Reciprocal altruism - When you help someone with the expectation they will do the same for you in the future when you are in a similar situation

Reciprocation - When we are more willing to comply with a request from another person if they did us a favor or gave a concession previously

Reflexes - A repertoire of behaviors aimed at helping the neonate survive

Regression - When we move from a mature behavior to one that is infantile in nature

Reinforcement - Due to the consequences, a behavior/response is more likely to occur in the future

Relapse - When an isolated mistake becomes a pattern of behavior

Relatedness need - The need to have warm relations with other people

Relational aggression - Any acts which attempt to hurt another person's self-esteem or relationships with others

Reliability - When a test provides consistent responses

Religion - A universal attempt by philosophically or spiritually like-minded people to set out to explain the cosmology of the universe and their concept of a divine power through common conceptions and beliefs

Religious conversion - The process of changing one's religious beliefs

Repetition blindness - When we experience a reduction in the ability to perceive repeated stimuli if flashed rapidly before our eyes

Replication - Repeating the study to confirm its results

Representative heuristic - Believing something comes from a larger category based on how well it represents the properties of the category

Repressed - According to Freud, any mental excitations that make it to the gate/door and are turned away

Repression - When unacceptable ideas, wishes, desires, or memories are blocked from consciousness

Research design - Our plan for how we are to test our hypothesis

Resistance - Part of the General Adaptation Syndrome, this is the stage when the body is successfully controlling the stress

Resource dilemma - A situation in which an individual must decide how much of a shared resource to take for him or herself

Resources - Anything we use to help us manage the demand and the exact resources we use will depend on what the demand is

Respondent conditioning - When we link a previously neutral stimulus with a stimulus that is unlearned or inborn, called an unconditioned stimulus

Response costs - Any behaviors that need to be made to achieve a goal

Restitution - A type of overcorrection procedure in which an individual is made to restore the

environment to a condition that is better than it was before the undesirable behavior occurred

Retaliatory aggression - Getting back at someone for an indiscretion committed against you

Retrieval - Pulling information from long term memory

Reversibility - Reversing the order of operations

Rooting reflex - When a baby turns his or her head in the direction of a stimulation near its mouth

S

Sandwich generation - When an adult has to care for their aging parents and children at the same time

Satiety - Being full

Scarcity - When we are more likely to comply with a request if we believe a product is running out

Schachter-Singer Two-Factor Theory of emotion - Says that any display of emotion first begins with an assessment of our physiological reaction or bodily response but since this reaction can be similar between emotional states, we also have to make a cognitive appraisal of the situation which allows us to identify which emotion we are experiencing

Schemas - Organized ways of making sense of experience

Scientific method - A systematic method for gathering knowledge about the world around us

Seasons of life - Levison's theory created to account for changes at home, work, and other locations in adulthood

Secondary aging - Changes occurring during adulthood that are moderated by decisions we make and the environment

Secondary appraisal (SA) - After deciding if a demand or stimulus is something that we should worry about, we formulate a plan to deal with it

Secondary traits - Tendencies that only appear in certain situations and are less crucial to one's personality

Selective attention - When we voluntarily focus on specific sensory input from our environment

Self-actualization - Maximizing one's potential

Self-blame - When we blame ourselves for the demand and subsequent stress we are experiencing

Self-disclosure - Telling another person about our deepest held secrets, experiences, and beliefs that we do not usually share with others

Self-efficacy - Our sense of whether we have the skills necessary to achieve the goal

Self-imposed stressors - Stressors that create stress for us and that are imposed by us

Self-instructions - Statements you write or say to yourself as positive affirmations and motivational tools

Self-isolation - When a person intentionally removes himself from social situations to avoid having to face a demand

Semantic memory - Memory of facts

Senescence - Age related changes

Sensation - The detection of physical energy that is emitted or reflected by physical objects

Sensitization - Occurs when our reactions are increased due to a strong stimulus

Sensorimotor stage - When infants focus on developing sensory abilities and learning to get around in their environment

Sensory memory - Holds all incoming sensory information detected from our environment for a very short period of time

Serial position effect - States that we recall information falling at the beginning (called *primary*) and end (called *recency*) of a list better than the information in the middle

Sexual response pattern - A distinct pattern of physiological arousal for men and women, before, during, and after sexual activity

Shaping by successive approximations or **shaping** - When we get a person or animal to make some desired behavior that they would not normally know to make by reinforcing approximations of that behavior gradually

Short-term memory - Holds a limited amount of information for about 15-20 seconds

Snowball effect - When one dominant personality convinces others to act and then these others convince more and so forth

Social comparison - When we evaluate whether our behavior, abilities, expertise, and opinions are appropriate or meet certain standards by comparing them to those of others

Social Darwinism - The idea that like plants and animals, humans too compete in a struggle for existence and a survival of the fittest is brought about by natural selection

Social desirability - When a participant answers questions dishonestly so that he/she is seen in a more favorable light, could be an issue

Social facilitation - When the presence of other people affects our performance depending on the type of task

Social identity theory - Asserts that people have a proclivity to categorize their social world into meaningfully simplistic representations of groups of people

Social loafing - When the presence of others detracts from our performance

Social norms - The stated and unstated rules of society

Social proof - States that we are more willing to comply with a request if we believe other people like us are acting in the same way

Self-monitoring - When you monitor your own behavior

Situational attribution - Something outside the person that is the cause of behavior

Social referencing - When a child is faced with an uncertain circumstance or event, such as the presence of a stranger, he/she will intentionally search for information about how to act from a caregiver

Social/personality development - The type of development which examines our social interactions with others, social skills, how our relationships grow and change, and changes in personality throughout the life span

Solitary play - Playing alone

Somatic nervous system - Allows for voluntary movement by controlling the skeletal muscles and carries sensory information to the CNS

Source traits - The underlying variables that appear to determine the surface manifestation

Spermarche - The first ejaculation

Spirituality - A belief in supernatural forces used to answer questions of how the universe works, man's place and purpose, the existence of a higher power and a soul, and the origin of evil and suffering

Spontaneous recovery - When an organism makes an extinguished behavior in the future to see if anything happens

Stereotype threat - When we worry about being judged by a negative stereotype applied to all members of our group

Stigma - When negative stereotyping, labeling, rejection, and loss of status occur

Stimulus control - When an antecedent has been consistently linked to a behavior in the past it gains control over the behavior

Stimulus discrimination - The process of reinforcing a behavior when a specific antecedent is present and only it is present

Stimulus generalization - When a behavior occurs in the presence of similar, novel stimuli

Storage - In memory, creating a permanent record of the information

Strain - The pressure the demand causes; occurs when our resources are insufficient to handle **Strain**
- The pressure the demand causes

Stranger anxiety - When strangers cause a child anxiety and fear, starting around age 6 months of age

Stress - Physical, psychological, and behavioral symptoms we experience when our resources and problem focused coping strategies are inadequate to deal with a demand and strain

Stress Inoculation - A form of Cognitive Behavior Therapy in which a therapist works with an individual to identify problems (the conceptualization stage), learn and practice new coping strategies (the skills acquisition and rehearsal stage), and finally put these newly acquired skills to use

Stressors - Environmental demands that create a state of tension or threat and require change or adaptation

Sublimation - When we find a socially acceptable way to express a desire

Substance abuse - Occurs when an individual consumes the substance for an extended period of time or has to ingest large amounts of the substance to get the same effect a substance provided previously

Substances - Any ingested materials that cause temporary cognitive, behavioral, and/or physiological symptoms within the individual

Sudden conversion - A type of conversion in which the change comes quickly and the person either adopts a faith they have not previously subscribed to or make of central importance their current faith that was not important previously

Suggestibility - When false memories are created due to deception or leading questions

Superego - According to Freud, the part of personality which represents society's expectations, moral standards, rules, and represents our conscience

Suprachiasmatic nucleus (SCN) - A cluster of cells that receives information about light exposure from the eyes and controls our behavioral rhythms

Surface traits - Clusters of observable traits that seem to go together

Syllogism - A logical argument consisting of premises and a conclusion

Sympathetic nervous system - Involved when a person is intensely aroused; It provides the strength to fight back or to flee (fight-or-flight instinct)

Synapses - Neural connections

Synaptic pruning - When neural connections that are not used are eliminated

Synaptogenesis - The creation of new synapses

T

Target behavior - Whatever behavior we want to change

Telegraphic speech - When a sentence is created with the fewest number of words necessary to convey the same meaning

Temperament - All of our behavioral and emotional predispositions present when we are born

Tension reduction - When a person engages in behaviors to reduce the stress caused by a demand

Termination Stage - The stage of change when the ultimate goal has been achieved but relapse is still possible

Terror Management Theory (TMT) - The theory which posits that worldviews serve as a buffer against the anxiety we experience from knowing we will die someday

Thanatos - Our death instinct which is either directed inward as in the case of suicide and masochism or outward via hatred and aggression

Theory - A systematic explanation of a phenomenon

Thermoregulation - Maintaining a set core internal temperature

Time out - When a person is removed from an activity because they are engaging in an undesirable or problem behavior

Tokens - Something that is accrued (and accumulated over time) once the target behavior occurs; part of a token economy

Token economy - An individual is provided with something that represents desired reinforcers and takes that "something" and cashes it in later for those reinforcers

Tolerance - The need to continually increase the amount of ingested substance

Tragedy of the commons - The conflict between individual and group interests in resources over time, both of which are justifiable

Trait-environment correlation - Says our personality traits affect the situations or opportunities we choose

Trait-environment interaction - Says our personality traits influence how we react to our world

Transduction - The process of converting physical energy to neural information in the form of electrochemical codes

Transience - When our memories decrease in accessibility over time

Treatment Phase - The phase of behavior modification when the strategy or strategies are being used

Triangular theory of love - According to Sternberg, love consist of intimacy, commitment, and passion and different combinations of the three create the 8 types of love

Trust vs. mistrust - Erikson's first stage of personality development occurring from birth to 18 months and when the child develops a sense of trust or mistrust based on how well their needs are met by their parents

U

Unconditional positive regard - Evaluation by another person not linked to our behavior

Unconscious - According to Freud, the level of personality not available to us

Unconscious motivation - When we are motivated by forces outside conscious awareness

Uninvolved (neglectful) parenting style - Parents characterized by being unusually uninvolved in

their child's life and shows no real concern for the well-being of the child

Unmotivated - When we are motivated to another end

V

Valence - The feeling of satisfaction experienced when a goal is completed

Validity - When a test measures what it says it measures

Values - Reflects what we care about most in life and may guide us through decisions we have to make

Variable Interval schedule (VI) - When we reinforce someone at some changing amount of time

Variable Ratio schedule (VR) - When we reinforce some varying number of responses

Verbal prompt - Telling the person what to do

W

Wellness - Being in good physical and mental health

Wishful thinking - When a person hopes that a bad situation goes away or a solution magically presents itself

Withdrawal - When we avoid a situation when other forms of coping are not practical

Working memory - When we move information from long term memory to be manipulated in some way

X

Y

Z

Zeigarnik effect - When we remember best tasks that were not completed

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