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MOCK EXAMS

The Use of Clinical Behavior Analysis with Children

Introduction

Behavior analysis is the interaction that occurs between an organism and the environment and any behavioral concerns that occur can only be understood through identification of the context in which they occur. When an individual begins to work with a child, they must understand that this differs in many ways from working with other individuals such as adolescents and adults. There are specific repertoires that will need to be developed for working with this particular population. It is vital that when working with children, the professional (i.e., behavior analyst) acts as a model of appropriate behavior for the parents and not just the child.

Additionally, the professional that works with children should be versed in skills that are necessary to access private events as well as skills that coincide with the proposition of playful activities. Prior to selecting any games or activities for use, a functional analysis of the child's behaviors should be conducted. This will help to ensure that the play strategies that are being used are consistent with the objectives of the clinical practice.

Therefore, it is important for a behavior analyst to understand the role of a child's development as it pertains to how changes occur between one's behavior and the environment. Additionally, the assessment of skills in functional play are similar to any other class of responses and can be used to aid in installing a new repertoire of skills during treatment intervention.

In this course, participants will learn to (1) identify how the role of a child's development relates to changes that occur between behavior and environment, (2) discuss how assessment of functional play skills can be used for new skill development during treatment intervention, and (3) discuss how the application of acceptance and commitment therapy can be used with children.

Section 1: Child Development and Behavior Analysis

The term development as it relates to behavior analysis can be best understood as progressive changes that occur within the interactions that exist between an individual's behavior and their environment (Bijou & Baer, 1961). Within the development of an individual, the focus is on both organic and concerning various environmental variables as well as the interaction that occurs between these variables and how they change as time progresses. These interactions are continuous, interdependent, and bidirectional. As a result, the actions of any organism impact the environment in which it is in, and the impact in turn has the ability to apply feedback on the organism itself (Vasconcelos et al., 2010).

When using the word progressive, this indicates that each change that occurs in an individual's behavior happens not only because of the current environmental variable but also because of the interactions that occur prior (Rosales-Ruiz & Baer, 1996). Interactions that occur immediately prior to the behavior change as well as any historical variables that are relevant are considered when conducting an analysis. The information that is often found is that previously acquired behavioral competences can either help facilitate or impede conditions for the building of new competences. Additionally, the functions that are acquired by stimuli throughout the history of an individual will also have an impact on how the environment will impact the organism and the actions of the organism at the time that it is analyzed. This will then result in a change in the present relations and either help or hinder learning.

Concerns with Age and Developmental Milestones

The study of development should occur in at least two different time samplings so that a change in phenomenon can be more likely to be observed. However, the passing of time should not be considered as a cause of observed change (Pelaez et

al., 2008). Changes that are present can be correlated to various factors such as a certain age. As a result, people often interpret an individual's age as a cause for the observed behavior. Therefore, it is important to remember that a change in an individual's behavior is not a direct result of a passage of time but instead is a result of the interactions that occur.

For example, a young child will begin to walk somewhere between 11 and 18 months. This timeframe is an average time that it will take for a child to experience enough interactions with their own environment in order to acquire the motor coordination, muscle strength, and balance as well as other skills and physical conditions that are needed for a person to walk. If this child is immobile for their first 18 months of life, it will be challenging for the child to learn the skills, experience the interactions, and obtain the physical requirements necessary to learn to walk during this period of time. As a result, it can be determined that a child is not able to walk because they are 18 months of age, but it is because the interactions that the child had with their environment have made it possible for them to learn how to walk.

An individual's life in the early years is marked by environmental regularities that are fairly similar in regard to developmental history among organisms of the same species. For example, the environmental context and organic conditions of embryos/fetuses are typically similar among individuals that are different but at the same gestational age. With this being said, it also makes it likely that the interactions that exist between an organism and their environment or the behavior and the environment are also similar. Therefore, the repertoires and learning tendencies are fairly common among one another of the same species at birth (Gehm, 2017).

After an individual is born, their needs are in most part related to the survival of their being. Although there are different babies, they each share common needs

and will select similar responses that exist within their environment. There is some environmental variability that is present; however, it is still a time that is marked by great similarity among organisms of the same species. For example, an infant will require times that they need to be fed. The caregiver can select whether they feed the infant when the infant cries or at specified periods of time throughout the day. Even though these differences may exist, the infant will still engage in a suckling response to acquire the food. This response is a similar component that exists among a species. As a result, even though there is some environmental variability that exists, common components demonstrate that there are similar interaction histories and repertoires among infants which justify the existence of developmental milestones.

As a child continues to interact with their environment, these interactions are accompanied by biological changes as well as an expansion of the individual's repertoire of environmental control. As a result, this leads to increased possibilities of choice. The individual is no longer as dependent on contingencies that directly relate to the maintenance of their own survival but are now exposed to a variability of interests, experiences, and behaviors. Developmental milestones as they relate to age classifications are fewer at this point in an individual's life.

Knowing this aforementioned information, cultural contingencies may be primarily responsible for the regularity of repertoires that exist among groups of people that are around the same age, particularly within the context of a school system. There are similar contingencies in place when specific behaviors are learned at each age (Gewirtz & Pelaez, 1996). These contingencies are usually in place as they coincide with a standardized curriculum within an educational institution and according to the year of school that the individual is participating in. Various skills, knowledge, and abilities are targeted for acquisition, and an individual is expected to learn them throughout their basic educational experience.

Through this information, it has been demonstrated that similar genetic characteristics, standardized environments, and common cultural contingencies will result in similarities that exist at specific ages in an individual's life. This information can be important for a behavior analyst to know as they may need to determine why a specific milestone has not been reached, if there are conditions that are hindering the individual from learning a particular skill, and if the environment is suitable for specific skills to be learned. This information can be useful for a behavior analyst, especially when conducting a functional analysis and developing various interventions.

When determining the expectations of individuals in each age group, it is important to observe the community within which the child resides or attends. If the child attends a daycare facility or school setting, then the behavior analyst should attempt to visit these locations and compare the child's skill set to that of peers that are in the same age group or class setting. If this is not able to be completed, then the behavior analyst can consult different developmental guidelines and handbooks that are provided by health agencies for a child's skill set within their early years of life. The most important thing is to completely understand what occurs or is exhibited during a certain passage of time. If discrepancies are noted when what is expected for a particular age group is compared to a child's skill set, then further analysis should be conducted to determine the functional relationships or physical conditions that may be associated with these discrepancies.

Prerequisite Skills and Behavioral Cusps

It is vital that behavior analysts analyze how historical as well as current conditions impact learning that takes place within an individual's life. The term prerequisites often refers to skills that are in an individual's repertoire and have

been learned throughout the history of the individual that will become conditions for later learning and acquisition of other skills. This term has been heavily criticized, though, as it may suggest that in order to learn certain repertoires there would need to be a specific sequence of events that occur within one's development (Rosales-Ruiz & Baer, 1996). This means that the learning of a prerequisite behavior (behavior 1) would be required to occur and as a condition for other specified learning (behavior 2) to occur. As a result, there would not be any situation where behavior 2 would be able to be learned prior to behavior 1.

On the other hand, other researchers have suggested that the term be allowed without it being associated with an immutable sequence (Gehm, 2013). When looking at this from a practical perspective, we have knowledge that is useful because we would know that the acquisition of one behavior would increase the likelihood of acquiring another behavior. For example, research has suggested that sensitivity to social reinforcement and to language influence one another reciprocally as an individual develops (Kuhl, 2011). From a practical perspective, we can then understand sensitivity to social reinforcement as a prerequisite for language learning by increasing the likelihood of it being able to be learned. This may help to explain why children diagnosed with autism spectrum disorder (ASD) exhibit deficits in sensitivity to social stimuli and language. It is possible, though, that these children learn language through the use of reinforcers rather than social stimuli. Therefore, it would not be relevant to point to social learning as a condition that would need to exist for language development but instead that it could be a condition that may increase the probability of its development.

Another example can be found within language expression. An individual's first words are usually made between 12 and 24 months of age as long as the child has been exposed to adequate levels of stimulation. Additionally, self-control begins to be observed in children between three and five years of age (Best & Miller, 2010). Self-control is referred to as one's ability to suppress a preponderant

response or the inhibition of a response that is highly likely to be emitted that is under the control of immediate consequences in favor of a response that is under the control of consequences that are delayed. According to researchers, three-year-old children can understand verbal rules which are important for the sensibility to consequences that are delayed (Best & Miller, 2010). Language may then be a prerequisite for the development of self-control within an individual.

There are some behavior analysts that have referenced the concept of behavioral cusps when discussing how an individual's development is progressive. Behavioral cusps can be referred to as an interaction that that allows access to reinforcers that are new, contingencies that are new, and reinforcement communities that are new as a consequence in which new behavioral cusps which may not be positive or desirable (Rosales-Ruiz & Baer, 1997). This is an important concept for behavior analysts to understand as it has effects beyond just the change that occurs. For example, when a child begins to learn how to crawl, the child then has access to different environments and various contingencies increase. The child can reach different objects and people more easily and have new interactions with pets. The muscles in their legs and arms become stronger due to the exercise and this, in turn, facilitates the child acquiring the skill set of walking. As a result, crawling is a behavioral cusp.

This concept creates a type of reasoning within a behavior analyst that allows them to think about the interactions that they need to plan so that a variety of changes can occur in the life of the person that they provide services to. Both behavioral cusps and prerequisites are complementary to one another. Often, a behavioral cusp is viewed as a set of interactions that help modify an individual's life while a prerequisite is the behavior that favors the learning of another behavior.

Maturation

Maturation refers to biological transformations that occur during an individual's life. This biological component plays a role in change that occurs within an individual's body. Maturation influences changes that are observed at the behavioral level while behavior-environment interactions that an individual experiences within their life influence biological components.

The use of the word maturation has been heavily criticized as it is often associated with genetically determined developmental plans. This means that any change that an individual goes through is defined not by their experiences. It is an explanation that disregards any influence of the environment on the behavior of an individual and assumes that the individual will undergo an invariable sequence of changes. This is not compatible with a behavior analytic view of development.

There are other concerns that are noted with a maturational explanation. The lack of biological evidence is a problem associated with maturational explanations. These explanations are often not based on any research or direct observations that have been conducted regarding the biological phenomenon but instead are based on assumptions that are derived from observing the behavioral changes that have occurred (Gerwirtz & Pelaez, 1996). There have been efforts made to search for a biological basis to account for behavior changes; however, the attribution to such biological factors is made without any substantiation to biology for everything that is not able to be explained with psychological concepts. There is a tendency for excessive or unfounded weight to be given to biological factors. However, it is noted that changes that occur within an individual impact behavior and changes that occur in behavior impact the individual. As a result, a behavior analysis perspective should consider maturational aspects as though they are based on scientifically grounded biological factors and how they interact with various behaviors.

There are important interactions that occur between physiological and environmental conditions that guide the development of an individual. It is important that a behavior analyst understands how the physiological changes and sensitivities of the individual to the environment that are relevant to each period of development act as a way of guiding their intervention and to help aid parents on how to respond to certain situations.

Opportune Periods of Development

There are different organic and environmental characteristics that are more frequently found during certain times of ontogenesis. In these situations, it is not the age of the individual that determines how these features emerge. However, age descriptions are able to be utilized as they allow the systematization of phenomena that are common to a majority of individuals at certain periods of time of ontogenesis. It has been observed that there are specific times of ontogeny that are more suitable for the acquisition of different repertoires. This means that learning is more likely to occur when appropriate stimulation is present. On the other hand, once this specified time period passes without this repertoire being learned, then its acquisition may be hindered.

For example, oral language can be utilized as an example for these specific time periods that are favorable for acquisition of specific repertoires. Research has shown that exposure to appropriate stimulation during an individual's early years will differentially favor oral language acquisition (Kuhl, 2011). There have been different accounts of extreme environmental deprivation, child neglect, congenital deafness, or learning a second language that has suggested that the lack of appropriate stimulation for individuals in early childhood may result in increased difficulty with oral language learning. Although there are other variables that should also be considered as to this increased difficulty, in general, data have

indicated that as learning occurs at later periods of time in life then learning may be deficient in certain areas (Morgan, 2014). Therefore, this information indicates that early childhood is a monumental period of time for acquiring this repertoire.

This information leads others to determine what makes certain periods of time more likely for individuals to acquire certain skills. Some have indicated that as interactions occur throughout life, organic plasticity and behavioral potentialities are found to be more limited. This is known as canalization (Gottlieb, 1991). Once this occurs, the contingencies that are able to return the individual to their original potentialities are not known. As a result, an individual's early life would be a greater time and greater potentiality for learning as there is a lower accumulation of interactions. Additionally, some individuals in specific age groups are associated with certain environments. These environments are not likely to occur again in the same manner at a later time. As a result, some stimuli are only available at certain periods of time during ontogenesis. Lastly, it is vital to understand that culture has norms that are based on different age groups that allow for others to deal differently with individuals that are from different age groups. For example, some people may simplify their commands, provide greater articulation on various phonemes, and play different word games with a one-year-old baby that would not occur with an individual that is 14-years of age. As a result, this indicates that the verbal community is well versed in teaching specific skills to different age groups and not in other age groups.

From this information, it can be ascertained that there are sensitive periods of time that are determined by maturational and environmental variables. This indicates that there may be a specific time in an individual's life when it is an optimal match between organic characteristics and environmental stimuli as it relates to the acquisition of a particular skill. Therefore, a behavior analyst should work to program teaching contingencies that are known to be compatible with the development of the individual. The behavior analyst should also take into

consideration optimal moments for teaching specific skills and when natural contingencies can be used without the need for additional environmental arrangements.

Risk Factors

The early years within an individual's life are considered to be a critical period of time for a child's development. Early childhood experiences tend to have a more significant influence on the individual's development at molecular, brain, and behavioral levels than when compared to other points of time in their life (Pisani et al., 2018). There are some situations as they are encountered early in life that appear to make individuals more vulnerable to the development of various skills in the emotional, social, cognitive, and motor domains as well as competencies that deviate from cultural expectations and norms. These conditions are known as risk factors and can include biological and genetic attributes of the individual and their family as well as various factors within their community that may influence the individual's environment and their family (Maia & Williams, 2005).

One risk factor for child development that has been noted includes exposure of the individual to extreme stressful situations. These situations can include separation from caregivers at an early point in their childhood; sexual, physical, and/or psychological abuse; maltreatment; neglect of the individual or social deprivation (Carpenter & Stacks, 2009). These conditions alongside other factors can have a negative impact on the child's ability to learn language, the development of cognitive skills, and the child's ability to demonstrate attachment effectively as well as be able to regulate themselves emotionally.

Data have indicated that children that have been able to be adopted and placed within an environment that is favorable while they were younger were able to make greater gains than children who were not able to be placed outside of an

institutionalized setting. Children that were able to be adopted prior to being 24 months of age were able to demonstrate more secure attachments with the individuals caring for them than children that were adopted after 24 months of age (Smyke et al., 2010). The children that were able to be adopted prior to 24 months of age were also able to demonstrate a better stress response, better mental health, and better language development than comparatively to the children adopted after the 24-month mark (Black et al., 2017).

When trying to determine how risk factors can have an impact on development, it is important to keep in mind that a risk factor cannot cause a particular developmental outcome. However, through correlational data, a behavior analyst will be able to understand that some events will have a greater probability or likelihood of influencing the existence of certain conditions and this will impact intervention planning. When a behavior analyst encounters or provides services to an individual that has experienced maltreatment, they should understand that maltreatment can be a risk factor for difficulties with attachment as they progress into adulthood. Additionally, a behavior analyst will need to understand that several things should be considered: (1) when a child has been abused, the behavior analyst should determine how the environment should be organized so that it will promote adequate and secure attachment from that point forward as this individual may have an increased likelihood of difficulty with attachment; (2) if a behavior analyst is exposed to an adult that has attachment concerns, then it may be beneficial to discuss any history of maltreatment with the individual as there is often an association between these two; and (3) as the behavior analyst encounters a community that presents with child maltreatment, they should consider the impact that preventing the maltreatment within the family context may have on later development of bonds within the family and with others as well as any relevant preventative strategies that could be promoted.

Through the identification of risk factors, a behavior analyst can better understand the history of an individual that will allow them to develop interventional strategies that pertain to not only the behavioral needs of the individual but also take into consideration the environmental factors that have affected the learning history of the individual. This can allow the behavior analyst to develop protective factors. Protective factors are conditions or factors that are able to be used to modify or change an individual's response to a specific environmental condition that predisposes the individual to an undesired outcome. For example, repertoires that can be used to improve or change the response of an individual to an environment that is considered to be hostile can be considered protective factors (Maia & Williams, 2005).

The development of an individual, otherwise known as the progressive changes that occur within the interactions that occur between the behavior and the environment, should be a focus of a behavior analyst- particularly when working with younger individuals. Often, changes that occur throughout ontogenesis have been noted to occur by means of organic causes. Therefore, it is important for a behavior analyst to not fall suspect to this line of thinking and to instead consider the behavior-environment interaction that occurs even at various developmental stages within an individual's life.

Section 1 Personal Reflection

When developing an intervention, have there been times when you have considered the development of an individual and how that can impact the individual's current repertoire of behaviors? What are some of the protective factors and risk factors that have been associated with the individuals that you have worked with and that you have had to take into consideration when providing services and creating interventions? When working with a younger

population, what are some prerequisite skills that you have found beneficial for the individual to have or ones that you have primarily had to teach in order for other skills to be able to be learned?

Section 1 Key Words

Behavioral cusp - an interaction that that allows access to reinforcers that are new, contingencies that are new, and reinforcement communities that are new as a consequence, new behavioral cusps which may not be positive or desirable

Development - progressive changes that occur within the interactions that exist between an individual's behavior and their environment

Maturation - refers to biological transformations that occur during an individual's life

Prerequisites - refers to skills that an in an individual's repertoire and have been learned throughout the history of the individual that will become conditions for later learning and acquisition of other skills

Progressive - each change that occurs in an individual's behavior happens not only because of the current environmental variable but also because of the interactions that occur prior

Protective factors - conditions or factors that are able to be used to modify or change an individual's response to a specific environmental condition that predisposes the individual to an undesired outcome

Risk factors - biological and genetic attributes of the individual and their family as well as various factors within their community that may influence the individual's environment and their family

Self-control - referred to as one's ability to suppress a preponderant response or the inhibition of a response that is highly likely to be emitted that is under the control of immediate consequences in favor of a response that is under the control of consequences that are delayed

Section 2: Assessment of Functional Play Skills for Use of New Skill Development

Play is a method that can be used to help develop skills and build knowledge within an individual. For example, the game of hide-and-seek is found in several cultures present around the world. At first, this game involves an adult individual that will gain the attention of a child through the use of gestures or sounds as they hide behind their own hands or a cloth. Then, the adult individual will reappear and typically emit a high-pitched sound. Within the first six months of life, this game involves the adult gaining the attention of the child; however, as time progresses and often until by age two, the child is then able to initiate the game on their own and will cover themselves up or play the game by covering a doll or stuffed animal (Rome-Flanders et al., 1995).

Throughout the months that this game is played, changes occur as more and more anticipatory responses of the infant occur as to what they expect from the adult individual which demonstrates that this experience has taught the child to react in a manner that is according to an expectation (Papalia et al., 2009). This back and forth play also teaches the child different skills such as taking turns during verbal exchanges, responding to the actions demonstrated by others, regulating their own emotions when an adult disappears, and developing the ability to deal with the permanence of different objects.

Even though a bond may be developed through play, other skills are able to be learned through the play of children. Other games allow children to learn to coordinate their own actions with those actions that other children exhibit. This allows for the development of other more complex games. Make-believe play allows children to take on various social roles, identify perspectives held by other children, and also become in touch with some emotions that may not typically be comfortable with.

The individuals that are involved in play as well as the content that the play is surrounding is strongly influenced by the culture of the individuals involved. For example, in Eastern cultures, make-believe is more focused on cooperation and occurs frequently with caregivers. This time that is used for play is used to teach behaviors that are deemed to be appropriate. On the other hand, in Western cultures, make-believe play usually occurs among peers. Play within this culture develops autonomy and can create situations involving conflict. Additionally, it places less emphasis on group harmony (Farver et al., 1995).

Oftentimes, play will also encourage children to play in the way that their culture expects them to play. Gender typification can be a consequence of childhood play. Some roles may encourage daughters, more than they do their sons, to talk more to their mothers, which may encourage one to socialize and express their feelings. Fathers may tend to play rougher with their sons than they would their daughters, which may encourage competition and aggression (Leaper et al., 1998). These gender specificities that occur within peer play are found to be common across cultures and may promote learning for behaviors that can be present during later developmental periods. For example, behaviors required for reproduction and survival of that gender may be emitted (Papalia et al., 2009).

Therefore, it has been found that play within children can lead to the acquisition of various skills. These skills can range from the most basic skills to more complex

ones. Some of the more complex skills can involve verbal behavior where the individual may predict the future, describe events that occurred in the past, different mathematical concepts, planning, responses that are viewed as being cooperative, and self-control.

Functional Play

Playing requires the individual to engage in spontaneous behaviors and things that they enjoy, whether this is conducted in a free manner or planned. It is a part of a child's development and can be found to be used as a method of communication. The child may express different feelings, wishes, and desires that they would not otherwise communicate or express verbally (De Rose & Gil, 2003).

When attempting to understand what play behavior consists of, the topography of the response cannot be the only thing that is considered. A behavior analyst should consider the concept of reinforcing contingencies which entails exploring the function of playing within the development of a child. Behaviors are exhibited based on the consequences that are produced within one's environment (Skinner, 1953). Children ideally will need to learn to play and in order to exhibit these behaviors, various operant behaviors will be required (De Rose & Gil, 2003). For example, a young baby may swing their arm while they are lying in their crib, hit the mobile that is hanging above their head, and the mobile will then produce a sound. This sound that occurs is a reinforcing consequence for the behavior that was exhibited by the baby. As a result, the probability that the young baby will swing their arm again in an effort to produce the same sound may increase. This is then termed that the baby is playing in their crib and the entire contingency is then known as play.

The toys that a child is surrounded by can be discriminative stimuli, models, instructions, and consequences. These toys allow and encourage a child to refine

behaviors from their initial repertoire in a way that will create or encourage learning of new behaviors. Therefore, toys and play can be used in a method to evaluate and intervene. As a result, since it is possible to evaluate challenging behaviors that are present and create new learning opportunities, the child's relationship with their own environment can then be modified. Once the child has been able to establish a minimum repertoire that allows them to be able to participate in play activities, it opens up the potential for refinement and diversification in the individual's repertoire in motor, cognitive, affective, social, and verbal domains (De Rose & Gil, 2003).

There are times that a child will play with an item that is not necessarily considered a toy. However, a class of stimuli can be characterized as a toy if the child is able to emit a single play response when they are in the presence of these stimuli. If the child is able to manipulate, touch, explore, stack, or even look at the item when they are in front of it, then we say that the child is playing with the item. A toy acts as an instrument within the process of learning and playing encompasses the possibility of learning new behaviors when placed in front of various stimuli.

When an individual engages in playing and is free from a punitive audience, a child is able to exhibit a behavioral repertoire as it relates to their life story. They are able to express their feelings, values, and secrets if they choose to do so. Through the action of playing, children are able to develop their own ability to observe and describe the environment and actions that occur around them. As a result, this increases the child's own knowledge of themselves and those around them as well as learns to relate to other individuals.

For some children, engaging in free play may be relatively easy to engage in. However, functional play as a resource for a behavior analyst can be a more complex skill that necessitates training, learning, and supervision from more

experienced individuals as well as exposure to children. Functional play, as used in the assessment phase, requires the exhibition of responses that are typical of the behavioral repertoire of the child that is under analysis. Functional play can also be used to teach a new repertoire during the intervention phase. Some of the functions of play for a behavior analyst include: bonding with the child so they will want to return to later sessions, assessing the child's relationship with their environment, teaching a new response, and teaching the child to view antecedents and consequences of the responses that they exhibit.

Assessment and Intervention Through Play

It has often been found that newer behavior analysts will report that they feel they are just playing without any clear objective to what they are doing. Additionally, they do not feel that they are using play as a tool for assessing and intervening. Therefore, it is important for a behavior analyst to keep in mind why and for what purpose they are engaging in play with a child.

There are two clear objectives to play when used as a tool. One objective is using play as an assessment method, and the other objective is to use play as an intervention method. Initially, the first session that a behavior analyst engages with a child should be free of intervention. If a child appears that they will hurt themselves, engage in risky behavior, or break an item in the room, the behavior analyst should assess the safety of the situation and how important it is to allow the child to engage in free behavior while in the environment. The behavior analyst may find that they need to intervene or change the course of the session to ensure the safety of those that are involved.

In the first couple of sessions, the child should be exposed to different materials, items, and situations. While these opportunities are being presented, the focus of the behavior analyst is to observe how the child interacts and relates to the room

and behavior analyst, rather than how they respond to the variables they are presented with. The behavior analyst should look at the behavioral repertoire that the child presents with and determine the similarities and differences that exist between what is presented and what the parents described to the behavior analyst. The behavior analyst should have an understanding of and knowledge concerning child development. This will allow the behavior analyst to evaluate the behaviors that the child exhibits and that may indicate some deviation in development that is typically able to be observed.

There are several behaviors that should be evaluated during these sessions. For example, eye contact with the behavior analyst should be evaluated when the child arrives for the session as well as the gestures that the child makes. Additionally, other behaviors that should be evaluated include the child's ability to play alone and with others, whether the child engages in cooperative play or competes with others, how the child organizes the items that are in the room, and the items that they gravitate towards while they are in the room. Each action that the child exhibits should be evaluated with the thought that each item in the room can act as a discriminative stimulus that evokes or elicits a response as it relates to the clinical setting.

Once the evaluation phase has been completed, the intervention phase will be introduced. This phase is designed to allow for structured games to occur that provide the child with alternative responses to the problem behavior that has been presented. As playing occurs, the child will exhibit the problem behavior (i.e., hitting, swearing, crying, breaking rules), and the behavior analyst will intervene by teaching an alternative response that is more appropriate to the social context.

There are different variables that should be considered when determining the play activity that will be used during the session. One variable that should be

considered is the target behavior that is being selected for the intervention. Another variable that should be considered is any controlling variables. Controlling variables are antecedents and consequences that control the individual's behavior. During the initial discussions with the child's parents, several hypotheses regarding the variables that maintain the problem behavior have already been noted for observation in the initial sessions with the child. Therefore, these variables should be considered when thinking of games that would be capable of evoking problematic responses. The play contexts should also be varied so that the behavior analyst can determine when the problematic behavior occurs more frequently.

Games that contain rules can often be used and are an effective avenue for establishing natural and arbitrary consequences of behavior. Natural consequences can be found through winning the game while arbitrary consequences are considered to be the praise that the child might receive from the behavior analyst for following the rules of the game. Another purpose of a game may be to bring the child closer to a stimulus that may be considered aversive. For example, the parents may have stated to the behavior analyst that the child is afraid of cats. A game that contains a picture of a cat may be used to evoke behaviors of this child when presented with the picture of the cat.

A third variable that should be considered is whether or not the activity is appropriate to what the behavior analyst has previously been told about the child's repertoire and their developmental stage. Prior to the presentation of any activity, it is vital to know if the activity that has been selected is appropriate for the child's age. For example, a 13-year-old child would more than likely prefer to not play with dolls while a four-year-old child would be unlikely to sit still in a chair and engage in dialogue about what they dislike about their sessions. Therefore, it is important to consider what research has discussed as being appropriate for each age level.

Another variable to consider is the preferences and tastes of each individual. The behavior analyst should become familiar with the various characters, movies, and toys that are popular for each age group. If the child brings something to a session that the behavior analyst is not aware of, the behavior analyst should show interest in the item and how this item relates to the child's environment and personal self so that it may be used within the analysis of the child's behavior or for intervention purposes.

A fifth variable to evaluate is the degree of aversiveness that is associated with the selected activity. There are some activities that even though they may be aversive to the child are still important for the purposes of intervention. A new game or book with words instead of pictures may be aversive to a child. When these situations occur, it is recommended that the fade-in procedure is used to introduce these items. When the fade-in procedure is used, the item is inserted gradually to allow for habituation of unpleasant responses and the item is paired with a reinforcer of high magnitude. Additionally, the Premack Principle can be utilized (Catania, 1999). This consists of the behavior analyst presenting the child with an aversive activity to engage in with the potential to engage in an activity that is highly reinforcing.

Lastly, unforeseen events can occur during the sessions that are held with the child. Unforeseen events can be difficult to deal with if a behavior analyst is not prepared or is less experienced. The behavior analyst should be able to understand that the functional analysis should guide the intervention selected and any decisions that are made. Once a behavior analyst understands this concept, it will allow the behavior analyst the opportunity to experiment by creating a playful situation that is appropriate to the new context they are presented with. This can still allow for the initial objective of the session to be maintained or to change the context in order for a new context to emerge.

There are several play resources that can be used during sessions. Each of these resources can be valuable for different reasons and used to teach different skills. For example, board and card games can be an option to use. These types of games can be useful for teaching obedience to pre-established rules. Additionally, the behavior analyst can modify the rules of these games to adapt to the needs of the situation during the session and the experience of the child. Board and card games can be used to evaluate a child's ability to cooperate with other individuals.

Fantasy themed resources are also valuable to utilize during sessions with children. Imaginary friends can be used to bring direction to a challenging behavior that occurs during a session, evaluates the child's ability to be creative and to problem solve, as well as stimulate the child's capacity to develop a social repertoire. Cloth dolls can be used to engage interaction skills between various characters and the child or to delineate the different roles that may be present in different situations for establishing a new social repertoire. The engagement with dolls allows for the natural environment to be explored in a non-aversive manner and to also work on expressing one's emotions. The child may use the doll as a method of speaking when they find it difficult to speak to the behavior analyst. The behavior analyst can also use the dolls to represent different situations that the child may have experienced to determine ways that the child may react for future events.

Another activity that can use the resource of fantasy involves the child playing at becoming a detective that solves various problems. This activity works to engage the child in problem solving skills and to demonstrate step by step directions that may include creativity. Within this activity, the child will ask a question of themselves and with each answer that is able to be provided, the child will create an additional new question as they try to reach their final objective.

Children's books are an additional tool that can be used in a variety of ways. The behavior analyst can observe the child reading to determine skill level, present the child with a theme from the book so the child can learn skills on how to solve similar problems, and to explore various attitudes of the characters throughout the book for similarity and differences between them and the child. These books can also be used for reflection and for the behavior analyst to teach the child to identify if a character in the book is similar to someone in their own environment and how to respond to them.

Play dough and moon sand can be used to assess basic motor skill development as well as for use with fantasy resources to build different objects. The behavior analyst can use these tools to teach motor imitation skills and to work on listener responding skills. The child can be asked to create mirror images of already created structures or to create an item based on a description that is provided to them.

Lastly, paper, crayons, and markers can be used in several different ways during sessions. The child can use these items to freely draw or to make specific images based on their own environment or situations they are exposed to. These drawings can be used to develop stories, to engage in creative activities, or to relate an experience to the behavior analyst as a method for problem solving and building of social skills. The child could be asked to draw a situation that has occurred in their school environment or to draw how they felt at a certain point in their life. Visual aids can sometimes be helpful for children to relate to others or to express their own emotions as they relate to a discussion or topic that needs to be relayed.

It has often been found that a behavior analyst can enter into sessions with children in a playful world with a pleasurable, genuine, and spontaneous manner that is most often found to be viewed as play time instead of work time. Children

are sometimes not able to determine if they are playing to work or working to play. The aforementioned material has been provided as possible ways to manage the creativity of children. These mentioned tools and resources are not meant to be exhaustive but instead can be used as a basis for creating opportunities for functional play.

Section 2 Personal Reflection

Have you ever used functional play as a component of a session with a child? What type of tools and resources were you able to use and what were you using the functional play for within your session? Are there variables that either were or were not mentioned that you felt you needed to be aware of and how were you able to consider these variables when selecting an activity that was appropriate for the child and the session?

Section 2 Key Words

Fade-in procedure - the item is inserted gradually to allow for habituation of unpleasant responses, and the item is paired with a reinforcer of high magnitude

Playing - requires the individual to engage in spontaneous behaviors and things that they enjoy, whether this is conducted in a free manner or planned

Premack principle - presenting the child with an aversive activity to engage in with the potential to engage in an activity that is highly reinforcing

Section 3: Application of Acceptance and Commitment Therapy with Children

Acceptance and commitment therapy (ACT) has typically been used as a treatment option for populations that include adults. However, it has also been refined to be included as a treatment option for children and youth populations (Greco & Hayes, 2009). ACT is found housed within contextual behavioral therapies which includes a philosophical view that is similar yet distinct from radical behaviorism.

Radical behaviorism is based on the ultimate goal of predicting and controlling the behavior of humans. The term control can be used to refer to the variability being eliminated or to have an influence on behavior. ACT is viewed as a multidimensional approach that focuses on progress occurring at multiple levels yet interconnected in a way with different patterns of progress.

ACT is used in a manner that promotes psychological flexibility within a variety of settings and for use in different populations. Research has shown that ACT is used as a coherent set of processes that are able to be applied with precision and depth to different problems that are clinically relevant as well as to issues surrounding human functioning and adaptability (Hayes et al., 2012). The focus of ACT is not on topographically defined forms of behavior.

Rule-governed Behavior

When we are born and as we progress through life, we are continually exposed to various environments that teach us how to integrate and use language within our lives through the contact we have with other humans. In the initial stages, this is completed through humans talking to us when we are babies. At this point, we become familiar with different sounds that make up language. As we continue to

progress through different stages of development, we are then encouraged to use and make similar sounds in our own unique way. These sounds are encouraged to relate to the world around us (i.e., daddy, dog, mommy). We then learn to use these sounds to represent things in our private world (i.e., hunger, thirst, pain, want, yes).

When a human is between 14 and 16 months of age, the language that is used within human beings becomes different than the language that is used in other mammals (Hayes & Smith, 2005). Around the timeframe of 23 months, human beings learn the behavior of deriving relations (Lipkens et al., 1993). The concept of deriving relations entails the learning of new relations between different events without being exposed to these situations. This learning takes place without the use of direct contingencies.

ACT utilizes within its practice the concept of relational frame theory (RFT). This theory is used to explain the learning of the operant of deriving relations. RFT delineates that during the timeframe when language skill development occurs, human beings learn to relate arbitrary stimuli that ultimately become a generalized operant response. This occurs through exposure to multiple situations when an operant is emitted. This process is known as multiple exemplar training (Healy et al, 2000). This training allows for relational contextual cues to be abstracted and then arbitrarily applied to new stimuli within the environment of the individual. Children then learn to relate stimuli that do not share formal properties among one another. This means that the stimuli have never been previously related within the individual's learning history, but they are able to acquire functional properties among one another. The functions that are established will depend on the social context that they are used within (Luciano et al., 2009).

When attempting to fully understand complex human behavior, Skinner (1966) outlined and put forth the idea that rules could act as antecedent stimuli that specify contingencies. When an individual is able to follow rules that have been delineated, this allows for the learning of new responses to occur without having to directly expose the individual to various contingencies. Through RFT, rules have the capacity to alter the behavior of an individual as functions transform as a result of coming in contact with different elements.

Throughout human development, rules exist within all the various contexts and periods that an individual encounters. When children are young, they often are excited to demonstrate that they understand and know the rules. As a child continues to progress in age, they learn how to behave at specific points in time. For example, a school age child will learn how to respond accordingly during playtime versus time when the teacher is talking during their math lesson. Rules can be specific to different social contexts.

When discussing rule-governed behavior, it is important to note that there are three different categories. These categories include pliance, tracking, and augmenting. Pliance is known as a category of verbally governed behavior that occurs as a result of consequences that have been mediated by a speaker. For example, when a young child goes outside to play in the snow, they may hear their parent's rule of "take a coat since it will be cold outside." In this context, the rule will be followed by the child because the parents have mediated the consequences of taking a coat. The child does not follow the rule because of an immediate consequence that has occurred. Instead, the parents have previously applied consequences (Hayes et al., 1989).

Tracking is a behavior that occurs through means of the verbal community after a certain level of behavior that is governed by pliance exists. This behavior is known to be under the influence of the correspondence of the rule and how organization

exists within the environment. For example, a child may have just finished painting and has paint all over their hands. An adult may tell the child to "wash your hands since they are dirty." As the child begins to wash their hands, the child may be told by an adult that their hands are starting to become cleaner. The adult may not add any additional arbitrary social consequences for the child washing their hands. Within this situation, the consequence of the child washing their hand is having hands that are free of paint and are clean (Hayes et al., 1989).

Augmenting is a rule that modifies the reinforcing value of consequences that have been specified within the rule. This type of rule has a similar function to motivational operations (Michael, 1993). This type of rule also does not specify consequences or contingencies like that of pliance and tracking. For example, a child may be presented with food that they do not like. This food presentation is acting as an aversive antecedent stimulus. An adult may tell the child that if they eat the food in front of them, they may get big and strong. If this rule is followed as a result of obtaining approval from the adult, then this is an example of pliance. If this rule is followed as a result of getting big and strong at a later time in their life, then this is an example of augmenting. This is an example of augmenting because of the transformation that occurs from aversive to discriminative function. Additionally, augmentals may delineate consequences that are abstract and do not need to have direct contact in order to exert control over the specified behavior (Carvalho, 2016).

It has been found that rules may not always be helpful for individuals as a method for promoting a prosperous life. Rules have been noted as generating insensitivity to contingencies that prevail (Hayes, 1989). The complex behavior of humans, in regard to following rules, helps humans to continue to thrive as a species as a whole. These same behaviors, on the other hand, also promote psychological inflexibility (Luciano & Hayes, 2001). For example, an individual may experience a relationship with their father who abused authority by assaulting them and calling

them names. In a natural progression, the individual may possibly learn that all adults are not able to be trusted. As life continues, this individual may also come in contact with various other contexts that are not associated with his father. In these contexts, this individual may miss valuable opportunities to develop and establish trusting relationships with other adult individuals. Therefore, it is important to keep in mind that although these rules may be beneficial at times, they can also be cumbersome in some contexts.

Psychological Flexibility and Inflexibility

The model of psychological flexibility is linked to basic human processes that are based on basic science. It encompasses psychopathology, psychological well-being, and psychological intervention (Hayes et al., 2012). There are six processes that are contained within psychological inflexibility. These are often represented within the figure of a hexagon. These six processes are as follows: inflexible to attention, disruption or lack of value clarity, inaction or impulsivity, attachment to concepts about the self, cognitive fusion, and experiential avoidance (Hayes et al., 2012). On the other hand, the concepts that are found within psychological flexibility are as follows: flexible attention to the present moment, chosen values, committed actions, self-with-context, defusion, and acceptance (Hayes et al., 2012).

Mindfulness and acceptance processes are associated with self-with-context, flexible attention to the present moment, acceptance, and defusion. Commitment and behavioral activation/behavioral change processes are associated with self-with-context, flexible attention to the present moment, committed action, and values.

The term psychological flexibility is known as the behavioral repertoire that allows the individual to be able to make contact with the present moment as a human

being that is conscious. The individual is able to understand the situation and context as it presents itself but not as it appears. Depending on what the context allows for, this is known as the gesture of changing behavior (Hayes et al., 2012). This model assumes that human suffering is coined as psychological inflexibility and consists of attempts to control different psychological reactions to an individual's discomfort as they compromise their opportunity to engage in actions that are value-based.

The goal of behavioral treatment is not to eliminate or suppress an individual's private events (i.e., feelings, memories), but to encourage an individual to experience more positive life experiences. In order to accomplish this, it is vital to know the different processes that aid in the growth and development of human beings in order for more effective interventions to be developed (Hayes & Hoffman, 2018). As a result, children's ACT will involve thinking about the different processes associated with this population and how interventions can be adapted so they can be used at different stages of an individual's development.

The Integration of ACT with Children

A main focus of ACT is on language-derived processes. Research has shown that issues that concern children at different ages occur in a recognizable pattern. This pattern entails that the older that the child is, the more complex and variable the concerns appear to be (Chorpita et al., 1997). As a result, this also means that the more developed the language processes are within a child, the more complex their concerns will be (Vasey & Daleiden, 1994).

When ACT is typically used, it primarily is used with typically developing adults that have language processes that are complex and refined. The behavior of these individuals is also under substantial verbal control. The processes that are within

ACT are designed to minimize this control and allow for the individuals to have the tools needed to live the life that they would prefer to live.

When an individual is young, they tend to respond to stimuli that are within their present and immediate environment. Additionally, their behavior is governed by the consequences that they directly are exposed to or encounter as a result of their own behavior (Greco et al., 2005). For example, for a young child, the behavior of touching a cat may decrease in frequency after the cat scratches the child.

As a child grows older, the behavior that is exhibited by them becomes under the control of both direct contingencies and verbal contingencies (Greco et al., 2005). For example, in the situation with the scratching of the cat, the individual that received the scratch may have continued to be fearful of cats as they progressed in age. At one point in school, this child overhears another child telling a story about being bitten by a dog and that dogs are worse than cats. As a result, the initial child's evasion behaviors towards dogs may increase in frequency. Even though an individual may have never come in contact with negative consequences associated with an event, stimuli can acquire an aversive function through the generalization process.

Individuals that are verbal also will begin to behave under control of consequences that may only occur in language. As children continue to progress in age, they will respond more and more to verbal stimuli. Rules that are associated with the past, present, and future will also influence their behavior more and more. Research has shown that children that grow up in an environment where they have frequently heard rules about care and protection may follow rules that are derived from these (Greco & Morris, 2002). This can result in the world acquiring an aversive function. Stimuli that are considered to

be neutral can become aversive including feelings and thoughts that are related to these contexts.

Various strategies (i.e., experiential exercises, metaphors) may encourage children and facilitate their ability to communicate and engage with one another. Play interventions can be used for the behavior analyst to help them understand the function of the child's repertoire. The behavior analyst can work to change the context in which an individual's thoughts arise and change their functions. For example, within cognitive defusion, the behavior analyst may encourage the child to write or draw their thoughts on a whiteboard or piece of paper in a variety of ways. As the child does this, the behavior analyst and the child are talking about these thoughts as though they are clouds in the sky and are coming and going. The behavior analyst should encourage the child and model for the child the idea of taking the thought and responding to the thought for just what it is. The thought should be considered to be just a thought without the need to act to avoid or modify it. This connects the thought to the field of acceptance. Additionally, parents and caregivers should be included in most of the sessions that are held with the child as they are the most significant part of the child's context.

The adult individuals that are involved in the child's life will typically have an advanced process of language development and rule-following behavior. Often, it is found that the parents or caregivers engage in experiential avoidance. Most cultural contexts have a typical view of how individuals should feel good and that all suffering should be avoided. The parent or caregiver may exhibit avoidance and evasion behaviors regarding their own aversive private events that are brought forth as a result of the child's different forms of suffering that they encounter. As these behaviors have been modeled and shaped through different processes, the child may come to session and present with a rigid behavioral pattern of experiential avoidance as they have encountered and viewed through

their own parent or caregiver dealing with their private events in this manner (Greco et al., 2005).

The ACT perspective would encourage the use of psychological flexibility to be integrated within different interventions with both the parent/caregiver and the child together. Through this method, a cognitive defusion exercise could be used where the parent or caregiver could talk about their own private events that they have experienced and build with their child new ways to respond to these private events.

ACT, even when utilized with adults, can use different experiential, playful, and not very literal methods or interventions as a way to weaken the control that is exercised by language. When these methods are used with children who are continually developing, these interventions can be even richer and bring forth new opportunities and possibilities for those involved. The behavior analyst can work less to remedy problems that have been created by language and instead focus on preventing them. This will help to develop individuals that are able to deal with their own suffering or problems in a more effective manner. As a result, this will help these individuals to continue toward the things, thoughts, and emotions that make life worthy of living.

Section 3 Personal Reflection

Have you had the opportunity to consider the use of ACT when working with children? If so, what are some contexts and situations that ACT could be a valuable intervention method for an individual that you have worked with? What are some strategies that you could use to encourage children and help facilitate their ability to communicate and engage with one another or members of their family? Additionally, how could you work to integrate the child's parents or caregivers into the child's session and integrate ACT in a successful manner?

Section 3 Key Words

Acceptance and commitment therapy - used as a coherent set of processes that are able to be applied with precision and depth to different problems that are clinically relevant as well as to issues surrounding human functioning and adaptability

Augmenting - a rule that modifies the reinforcing value of consequences that have been specified within the rule

Control - used to refer to the variability being eliminated or to have an influence on behavior

Multiple exemplar training - exposure to multiple situations when an operant is emitted

Pliance - a category of verbally governed behavior that occurs as a result of consequences that have been mediated by a speaker

Psychological flexibility - the behavioral repertoire that allows the individual to be able to make contact with the present moment as a human being that is conscious

Relational frame theory - when language skill development occurs, human beings learn to relate arbitrary stimuli that ultimately become a generalized operant response

Tracking - behavior that is known to be under the influence of the correspondence of the rule and how organization exists within the environment

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