

CREATING A VERBAL COMMUNITY FOR DESCRIBING EMOTIONAL RESPONSES
WITHIN A CONTINGENCY LENS: THE EFFECTS OF
A BRIEF TRAINING WORKSHOP

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Observing emotional responses is recognized as a valuable clinical skill in a variety of professions, including applied behavior analysis. Emotional responses can flag possible contingencies thereby guiding a behavior analyst to better select valid measures, goals, and procedures. Additionally, emotional responses can be goals in and of themselves. The purpose of the present study was to evaluate the effects of a workshop on the observation and description of emotional responses by behavior analysts-in-training. The procedures included instructions, modeling, practice, discussion and feedback. The workshop included a blend of trainer presentation and interteaching strategies. The effects of the workshop were evaluated using a single-subject A-B design with multiple probe measures across four students. During probe assessments participants watched short video clips of family interactions and wrote a descriptive narrative in response to several questions. This created a permanent record for quantitative evaluation and analysis. The study resulted in an increase in the number of descriptions of emotional responses among all participants. The participants also increased responses tying the emotional response to external environmental events more often in the post-workshop assessment than the pre-workshop assessment. Results are discussed within the context of training applied behavior analysts, the analysis of verbal behavior, and the role of emotions in clinical practice.

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INTRODUCTION

Observing emotional responses is recognized as a valuable clinical skill in a variety of professions (Brink, 1991; Brock & Salinsky, 1993; Cottingham, 2015; Doyle, Hungerford & Cruickshank, 2014; Roter, Frankel, Hall & Sluyter, 2006; Winship, 2011) and can be useful for applied behavior analysts as well (Biglan, 1991; Layng, 2006; Layng, 2009; Moore, 2009; Parsons, Reid, Bentley, Inman, Lattimore, 2012; Schwartz & Goldiamond, 1975).

However, the observation of emotional responses is often not included within the training of behavior analysts. This may be the case for a variety of reasons. The emphasis is placed on observable, countable actions in behavior analysis. This can sometimes create confusion and the impression that emotional responses have no place in the science of human behavior. Yet, emotional responses can be useful in a clinical context (Layng, 2012; Schwartz & Goldiamond, 1975; Wolf, 1978) and can be approached from a behavior analytic perspective (Layng, 2006; Layng, 2009; Moore, 2009; Schwartz & Goldiamond, 1975; Skinner, 1945; Skinner, 1957; Skinner, 1953). The behavior analytic approach to emotions differs from the lay community's discussion of emotion and teaching this approach to emotions may require some foundational training in verbal behavior.

The Observation and Labeling of Emotions is Trained by a Verbal Community

“Fear,” “anger,” “sadness,” and “surprised” are labels a verbal community assigns to reactions that occur under specific conditions and are maintained by specific consequences. These labels are trained by a verbal community. Skinner (1945) describes several ways in which this training might occur. Two common ones are public accompaniment and collateral responses.

Public accompaniment refers to publically observable stimuli that occur in correlation with an internal stimulus (Skinner, 1945). A parent might teach a child to say “that’s hurts” when a child falls and the parent see a scrapped knee. In this case the fall and scrapped knee act as public accompaniments to the internal stimuli. The child’s use of the word “hurt” is reinforced and the child learns to label the internal stimuli with the word “hurt.”

It may be that events commonly associated with an emotion act as a type of public accompaniment. When a child’s friend moves a way, a parent may ask them if they are sad. A child learns to label the internal feeling of sadness when they use the word sad in a similar situation and the response is reinforced.

Collateral responses are similar in that they occur in close proximity and correlate to internal stimuli, but they refer to observable responses an individual makes. These are often called emotional behaviors. If a child cries, a parent may label their reaction as sad and may reinforce a child’s use of the word. Likewise, if a child is jumping up and down a parent may reinforce the child’s statement, “I’m excited!” A label of a private experience is trained by a verbal community responding to behaviors or observable stimuli that typically accompany the private experience (Skinner, 1945).

Individuals learn to identify internal states that are important to that verbal community (Skinner, 1974). While most languages have words for happiness, sadness, anger, and fear, cultures have made subtle differentiations between emotions based on unique areas of cultural importance. Pei-Ying Lin (n.d.) identifies multiple words describing emotions that cannot be directly translated into other languages. For example, the Danish word “hygge” refers to a type of comfort that one gets when enjoying food or drinks with family. “Gezelligheid” is a Dutch word that refers to a type of comfort one gets when one is at home with family. While very

similar, these words refer to slightly different feelings. A word was developed in these languages to distinguish a feeling that had social significance. Because there is a word, a discrimination can be taught to other members of the verbal community. A child hears a word used under specific contexts and their use of the word is reinforced in one situation and not in another.

While emotions cannot be observed, both emotional behavior and the use of labels can be. Emotion indicators are behaviors that typically occur along with an emotional feeling. These are the collateral responses. This might include facial expression, voice tone, or posture. It could include a specific action like a kiss or throwing an object across a room. It might also include a dimension of a behavior such as speed or volume. Labels refer to the words a verbal community assigns emotions such as “happy,” “anger,” “fear,” and “joy.”

Within the behavior analytic literature, emotion and labels of emotions are discussed as responses that describe specific contingences (Schwartz & Goldiamond, 1975; Layng, 2006; Layng, 2009). For example, high cost, punishment, and extinction contingencies often accompany reports of fear or anger for example (Schwartz & Goldiamond, 1975; Layng 2012). When approaching emotions, one would look at the contingencies that surround them. For example, with fear an organism will engage in a variety of behaviors that produce an increase in distance between oneself and another person or a situation (Layng, 2012). When someone runs away the distance increases. In the conditions under which an increased distance may function as reinforcer, the response of fear may occur. Anger, like fear, also results in an increase in distance. To determine the difference between the two, one must look at the difference between the contingency described by anger and the contingency fear describes. Fear results in distance when an organism removes themselves from the situation. Anger results in a fight response that

results in distance gained through the removal of the other organism or event (Layng, 2012). Likewise, positive emotions may describe contingencies in which a decrease in distance is achieved. For example, laughter tends to result in an interaction being sustained (Gervais & Wilson, 2005).

Of course, when emotions are made public through emotional indicators, the behaviors can be selected by contingencies quite different from the original ones. When observing emotional behaviors such as aggression, it is valuable for a behavior analyst to consider whether the emotional response and corresponding feeling are descriptions of a contingency, an endeavor to increase distance, or an operant selected by other social consequences (Layng, 2012). However, in all cases the observation of the emotional responses in the context of the environmental events may be an important initial step.

Emotion labels are summation terms. This is true in two ways. The first is that they tend to describe a particular group of topographies rather than a single one. For example, the word “excited” is used to describe several responses such as smiling, motions or movements that are exaggerated, and a higher pitch in the voice. The word “fear” is used to describe a group of responses such as wide eyes, faster breathing, quick movements and motions.

The second way emotion labels are summation terms is that they are used by a verbal community to refer to a particular relation between these groups of responses and an environmental contingency. Saying “he’s excited” gives the verbal community information about the response (smiling, higher pitched voice, fast movements) and about potential context under which the person is behaving (an SD for a strong reinforcer may be present).

While it is not accurate to say that one is observing an emotion (which is strictly private) when observing emotional behavior (Layng, 2012), the observation of emotional behavior and

the use of emotion labels can both be helpful. Emotional indicators and labels have functional value in a social community. They are widely utilized in human communities (Ekman & Friesen, 1986; Lutz & White, 1986; Matsumoto, 1990). Emotional responses can be a useful form of social communication, much like spoken language (Ekman, 1997; Hager & Ekman, 1983). Like other forms of communication, emotional responses can influence another person's behavior. For example, a parent may frown at a child and the child may stop kicking the chair in front of them. A child on a bus may smile at another child as if to say "you can sit by me."

Emotional responses may function as important social reinforcers and punishers. A child in school may continue to make jokes that result in his peers laughing. This seems to be so common and important in the community that when emotional response do not function as reinforcers or punishers it raises concerns. A child who make jokes in class despite his peers glaring at him is often referred to a behavior analyst for help with social skills.

One of the reasons emotional responses are important in a social community is that they are often predictive of other responses. If someone is smiling they are more likely to say "yes" to an invitation for coffee, while someone frowning or scowling is less likely to accept such an invitation.

Emotional responses may be utilized in some social groups more than others. For example, emotional expressions tend to be used more often by women (Brody & Hall, 2000). Women also tend identify more emotional responses (Dimberg & Lundqvist, 1990). Recognition of emotional responses can also vary by profession. For example, Ekman & O'Sullivan (1991) found that secret service personnel could read discrepancies between an emotional display and the emotion someone said they were feeling more effectively than judges, psychiatrists, and college students. The ability to observe emotional responses is specifically trained in some

professions. Dog trainers, for example, have complicated emotional response taxonomies that are frequently taught to new professionals (Ganley, 2006; Rugaas, 2005).

In summary, a label of a private experience is trained by a verbal community responding to behaviors and other observable stimuli that typically accompany the private experience (Skinner, 1945; Skinner, 1957). The types of internal states that are trained depends on what matters to one's verbal community. Emotion and labels of emotions can serve as flags for different types of contingences and can serve a social function within a community.

Observing and Describing Emotions is Useful in a Clinical Context

Observing emotional responses can be functional in a behavior analytic context both because they can flag possible contingencies and because they are socially significant in the wider community. Emotional responses can inform a behavior analyst's selection of socially significant goals, targets, and effective teaching procedures. Consider, for example, several situations in which observing emotional responses can provide useful information to a behavior analyst.

Several children are playing tag during recess. One child runs up to a peer and smacks him hard on the back yelling, "you're it!" The peer frowns and looks annoyed. The peer runs away from the child to tag another child. A behavior analyst may consider that some aspect of the first child's behavior was aversive to the peer. This peer might avoid the child in the future. The behavior analyst in this situation would use this information to refine the first child's play skills so as to increase the frequency of more favorable reactions from his peers. The peers' emotional responses could be helpful cues to a behavior analyst regarding which behavior

topographies are likely to be accepted in the child's peer group. Emotional responses can be important for a behavior analyst to observe and perhaps to teach the child to observe as well.

If the behavior analyst in the situation above failed to observe the peer's reaction to the child, the analyst might conclude that the child could successfully play tag. The child had engaged in tagging peers and running away. However, an appropriate response needs to be defined in part by the reaction the response obtains. Without observing the peer's response, the therapist may train the child inappropriate social behaviors. This could result in damage to the child's ability to form friendships. It is not enough to design interventions based on a curriculum or a set of topographies empirically validated in another community or context. It is useful to design programs based on the functional outcomes of the specific response topographies in the individual's community. This is especially true in regards to children's social behavior.

Both emotional indicators and emotional labels can be useful in the clinical context. Consider the next example: during a meeting about IEP goals, a behavior analyst notices that the mother's emotional response changes from relaxed and pleased to tense and quiet. The behavior analyst also notices that this occurs when he begins listing different types of foods he wants the family to have available for a new program. After noticing the change in the mother's emotional response, the behavior analyst says "I get the sense that there might be some concerns about this program. Should we talk about it a little more?" After a short hesitation, the mother explains that the younger brother has a wheat allergy. She tells the behavior analyst that she feels overwhelmed. There might be a lot of whining and fighting if she gives goldfish crackers to the older child and says "no" to the younger one. With this new information, the behavior analyst adjusts the program to focus on foods both children can eat. The behavior analyst was able to adjust his approach to collaborate more effectively with the family after observing a change in

the mother's emotional response. In this example, the emotional response of the parent helped the behavior analyst identify an aversive contingency that may have resulted in the parent avoiding the program.

If the behavior analyst had not noticed the parent's response (or had ignored it as an insignificant variable), no adjustment would have been made to the program. Because the mother's behavior is also sensitive to contingencies, it is probable she would not continue implementing a program that resulted in aversive consequences. The behavior analyst might have bemoaned the lack of parent compliance and the child would not have made progress.

In short, attending to emotional responses can be valuable for a behavior analyst. Attending to moment to moment changes in emotional responses and corresponding environmental events may help a behavior analyst identify leads regarding potential stimuli that function as reinforcers and punishers. In this way, emotions can provide clinical leads a behavior analyst can explore further. Understanding the wider range of contingencies allows a behavior analyst to intervene in a way that supports the family as a whole. Observing emotional responses when family members interact allows a behavior analyst to uncover a broad range of contingencies. In both stories the emotional responses contributed toward the selection and modification of goals and programs.

It does not follow that negative emotions are always avoided or positive emotions always sought. There are times when a parent's behavior needs to be somewhat insensitive to the immediate contingencies (a parent may need to tolerate crying rather than give in or they may need to tell a child to go to bed even when the parent might prefer spending additional time together). Experienced clinicians will often observe emotional responses and the potential contingencies, and consider them within the context of the therapeutic goals. In some cases, a

teaching program remains the same but the behavior analyst provides additional assistance and support to the parent.

In an episode of ABC's reality series, *Supernanny*, Dr. Lynn Koegel did just this. In this episode (Powell, 2005), she made a guest appearance to work with a mother and her son. Dr. Koegel coached the mother on ways to increase her son's attempts to communicate. Dr. Koegel had the mom create an opportunity for her son to ask for something he wanted. The mom was to hold up a cookie and say the word "cookie." She would then hand the cookie to the child as soon as he made an attempt to say the word. During the training, the mother grew quiet and began to tear up as her son cried and screamed instead of trying to say the word. When the mom began to tear up, Dr. Koegel placed her hand on the mother's arm and acknowledged the boy's emotion by saying, "he's pretty upset." She goes on by identifying the tension between the mom's goal to keep her child from suffering and to help him learn to talk. Dr. Koegel says, "I know you want to do everything you can to keep your kids happy, but the thing is, he won't learn to talk that way." While talking with the mom, Dr. Koegel's facial expression reflected appreciation of a tough dilemma, respect, and support for the mother. After Dr. Koegel's comment, the mother's facial expression changed from discouragement and grief to determination and calm. Dr. Koegel's response in this episode of *Supernanny* provides an example of an experienced behavior analyst responding to emotions within a clinical context.

Emotional responses can provide clues to interlocking contingencies within a family. In this case the child reached for the cookie which served as stimulus for the mom. The mom responded by prompting the child to say cookie. This served as an aversive stimulus for the child. In response to the prompt (and lack of cookie) the child started to cry. The crying was an aversive stimulus for the mom who started to tear up. The relationship between the mom holding

the cookie up and prompting the child to speak, the child crying, and the mom feeling grief is important for a behavior analyst to observe as they design a program. By noting the emotional responses and where they occur within a behavior stream, Dr. Koegel was able to support the family as a whole.

It is helpful to the clinician to be able to observe the social interactions among individuals and the potential functional relations that are occurring. They also need to observe their own responses. Learning to observe one's own emotional response can help behavior analysts become better observers of the way different contingencies influence their behavior in a clinical setting. For example, a behavior analyst who is observant of their emotions may be more effective at catching themselves over-prompting a child who appears to be struggling, lowering a reinforcement schedule for a child who is pinching them, or spending more time on one case than another because that case makes them feel effective and successful.

Given that emotional responses may flag possible contingences and enable a behavior analyst to respond to a wider range of contingences, how would we train behavior analysts to observe and describe them in way that is consistent with a behavior analytic approach?

Considerations for the Observation of Emotional Responses in Clinical Contexts

A behavior analytic approach to emotions differs from the way emotions are often discussed in the lay community. Behavior analysts-in-training need to be taught that emotions are not described as causes of behavior but as descriptions of contingencies and responses to stimuli in the environment. In a behavior analytic context, one might describe an interaction observing emotional reactions as part of a behavior stream. For example, a behavior analyst might note that "the dad reached down to pick up the child and the child grinned and laughed.

The dad smiled and swung the child around in a circle. The child giggled and said “Again!”

New behavior analysts need to be trained that a description of an emotional response requires a description of the functional context. Skinner (1953) states that:

It does not help in the solution of a practical problem to be told that some feature of a man’s behavior is due to frustration or anxiety; we also need to be told how the frustration or anxiety has been induced and how it may be altered. (p 167)

It is important to note the antecedents, consequences, potentiating variables, states of deprivation, changes in rates of reinforcement and other environmental variables that occur around the display of an emotional response. The same response topographies can have different functions and different topographies can have same functions. This is certainly true for emotional responses. For example, in one family crying may result in family members expressing support and concern. A child in this family may learn that crying is an effective way to get help. In another family, crying may result in one person providing the crying person more space. A child in this family learns that crying is an effective way to increase distance or privacy when needed. Like other behaviors, emotions cannot be understood by looking at topography alone.

Interpretations regarding one’s observations of emotional responses must be cautious because the display of emotions varies. Communities have different “rules” regarding when an emotional response should and should not be displayed. For example, while frowning is typically an appropriate response in disappointing situations, a child frowning because they don’t like a birthday gift might be rebuked by a parent. The display rules (when, how, and what emotions can be displayed) vary across social role, age, and gender. Take gender for example. People tend to respond differently to a little boy crying than a little girl. Girls are often told to smile even in unpleasant situations while this rule often does not apply to little boys (Wallbott, 1988).

Training Behavior Analysts to Describe Emotional Responses

As a field, behavior analysts are faced with a challenge. On one hand, emotional responses are socially significant and potentially useful within a clinical analysis. On the other hand, emotional responses are social constructs and they vary as a function of one's verbal community.

How difficult are these issues to manage? Can new behavior analysts be trained to observe emotional responses without an undue focus on topography? Can behavior analysis be trained to describe emotions within the context of environmental events? Can this be done efficiently?

When designing training to address these issues, previous research can be considered in relation to three different components. First, what should be trained? Second, how should it be trained? And third, how can the effectiveness of the training be measured?

What should be trained?

Prior research that addresses the acquisition of emotional observation skills has focused primarily on topography (Ekman, 1997; Ekman, 2001; Ekman, 2009; Ekman, 2016; Keltner, et al. 2003), but a behavior analytic approach includes topography, function, and context (Biglan, 1991; Bowman et al., 2013; Calkin, 2002; Dougher & Hackbert, 2000; Schwartz & Goldiamond, 1975; Layng, 2006; Moore, 1980). The observation of emotional responses is frequently approached as a discrimination task (Gordon, Pierce, Bartlett & Tanaka, 2014; Silver & Oakes, 2001). Individuals are presented with examples of different facial expressions or body postures and asked to identify the emotions. Praise or some other postulated reinforcer is delivered based on accuracy. This approach is limited because emotional response forms vary. An alternative approach to this training is to teach students to observe changes occurring in facial expression,

voice tone, and body language along with the events occurring in correlation with that change. Students can then be taught to label these changes and discuss their proposed labels with others in their community. These skills may allow students to become competent observers and describers in a wide range of settings and communities.

Emotional responses are a social phenomenon (Shouse, 2005). People may learn to identify and name different emotions through the reactions of a social community (Skinner, 1945; Skinner, 1974). Individuals can learn to discriminate differences in stimuli, including emotional stimuli, because the difference has some type of meaningful consequence (Skinner, 1974). Questions from one's social community can require someone to make subtle differentiations (Skinner, 1974). Just as a student learns to recognize the composure of an unfamiliar musical piece or identify the artist who painted a particular painting through differential reinforcement.

It then follows that it is necessary to have a verbal community that will reinforce descriptions and discriminations. An organism only learns to make discriminations when a difference between two stimuli matters within a community (Skinner, 1974). An effective training would create a verbal community in which the identification and description of changes in emotional responses is reinforced.

Similarly, a training should create a verbal community in which self-reflective comments result in positive responses and continued conversation. It is important to be cautious when observing emotional responses. Individuals in a community respond to other individuals' emotions by noticing observable responses or events that typically correlate with a private event. These correlations vary by verbal community. In one social group, a child learns that yelling and banging fists on a table correlates with anger. In another, a child learns that yelling and banging

fists on the table correlates with passionate enthusiasm. These differences in learning histories create challenges for someone observing emotional responses. This challenge is sometimes handled by training new behavior analysts to observe and measure only more easily operationalized aspects of behavior. It is possible, that this challenge may be more effectively handled by training behavior analysts to discuss the emotional responses and corresponding labels with other people. Training a behavior analyst to consider the similarities and differences between their learning history and another's is a useful type of self-reflection. It requires behavior analysts to be skeptical of their interpretations and to notice the similarities and differences within learning histories (due in part to differences in roles, culture, and gender). Self-reflection is not in opposition to a behavior analytic approach.

In the behavior analytic literature, self-reflection is discussed as a verbal description of one's learning history and the social and environmental contingencies, contexts, and stimuli under which one is behaving (Fong, Catagnus, Brodhead, Quigley & Field, 2016). Behavior analysts can learn to recognize that their interpretations of behavior are a result of their own context and history, and fully acknowledge this inevitable subjectivity (Hayes, Follette and Linehan, 2004). They can compare their learning history with the learning history of another and identify overlaps and points of divergence. The factors influencing the scientists' and practitioners' responses are frequently overlooked, but this is an area in which systematic observation and training is needed (Skinner, 1945; Fawcett, 1991).

How Should It be Trained?

Although no previous research addresses the training of behavior analysts to observe emotional responses, Golan et al. (2009) evaluated an animated series designed to train children

on the autism spectrum to observe and understand emotions. Within this study, children were asked to label emotions and to match facial expressions with pictures and descriptions of different situations before and after observing the video series. The use of video proved to be an effective tool when teaching children to observe emotions within the context of environmental events rather than trying to label emotions based on specific topographies.

Research addressing discriminations by adults of other behaviors may apply to emotional responses as well. For example, previous research has shown that the observation of subtle behaviors can be taught through instruction, video examples and feedback. In a study by Taylor and Alvero (2012), participants were trained using a discrimination training procedure to observe safety behaviors of co-workers. Within the study, participants were provided with instructions on the targeted safety behaviors. Participants reviewed pictures and watched videos of safe target behaviors and at-risk versions of those behaviors. Participants then scored the pictures as safe or unsafe and received feedback. In another study, Bardes, Gillers, and Herman (2001), trained medical students to make subtle clinical observations by training them to make careful observations of art in an art museum. Students were organized into groups and asked to discuss different pieces under the instruction of art educators and medical school faculty. The results of this study showed that this type of instruction can improve empirical skills in observation and increase awareness of emotional expression in the human face. In both examples, complex and subtle discriminations were trained through instruction, practice, and feedback. In Taylor and Alvero (2012) the feedback was provided based on accuracy. In Bardes et al. (2001) the feedback was provided naturalistically within the discussion about the art.

Other lines of research also document the effectiveness of group discussion as a training method. Interteaching is a training model in which an instructor prepares a set of questions

guiding students through the course material. These questions are discussed by students in small groups. This model has been shown to effectively increase test scores in college classrooms (Saville, Zinn, Neef, Van Norman, & Ferreri, 2006; Saville, Lambert & Robertson, 2011). Kucharczyk et al. (2012) describe peer-to-peer coaching as an effective way to improve skills among clinical practitioners. Social discussion as a training method may be particularly applicable to the observation and description of emotional responses. As a social behavior, the observation and labeling of emotions is something individuals most likely learn to do through the social feedback of their verbal community.

How Can the Effectiveness of a Training be Evaluated?

Written responses can be used to evaluate the effectiveness of training designed for adults (Becker & Johnston, 1991; Dotson, Sheldon & Sherman, 2010; Palmer & Devitt, 2007).

Narrative descriptions of emotional responses may provide a practical way to measure changes in the content and number of descriptions of emotional responses.

Currently, little empirical work has been done on the way people learn to observe and describe emotional responses. Likewise, little work exists on the functional role of the emotional indicators or labels, or the clinical value of these responses. Developing an operational definition of these responses is not a simple matter of defining specific topographies. Psychological terms and the labeling of private events requires an analysis of functional relationships and a systematic means of observing changes as a function of a systematic change in the environment (Skinner, 1945).

This study is an initial attempt at creating a means of systematically observing and changing descriptions of emotional responses. The purpose of this study was two fold. First, to

develop a brief training package, which included the development of a small verbal community, designed to increase descriptions of emotional responses and self-reflective comments among behavior analysts-in-training. Second, to develop and test the reliability of a measurement and observation system to count different aspects of the descriptions of emotional responses and self-reflective comments. Specifically, the aspects of emotional responses include the number of emotion labels, the number of descriptions of emotion indicators, and the number of emotions related to environmental events within the narrative. Self-reflections include the number of observations of one's own emotional responses, comments addressing similarities and differences between a character and one's own experience, and reflections on possible biases in one's clinical evaluation and interpretation.

METHODS

Participants

All participants were students in their 20s and 30s seeking their Master's degree through the Department of Behavior Analysis at the University of North Texas. Participants came from diverse socioeconomic and cultural backgrounds and all participants had between one and five years' experience doing applied work within the field of behavior analysis. Table 1 includes demographic information for each participant. Graduate and undergraduate students were invited to participate through email, class announcements, and posts on University of North Texas Behavior Analysis Facebook boards set-up by graduate students. The invitations to participate stated that lunch would be provided during the training and that participants would be paid \$25 for participating in the study. Interested participants contacted the principle investigator via email who scheduled the training during a time that was most convenient to the students who expressed interest.

Setting and Materials

The training workshop was conducted on a weekday afternoon. It was held on the university campus in a conference room that was frequently used by the Department of Behavior Analysis for graduate courses and lab meetings. The room included a large conference table in the center of the room. One wall had three large windows. On the wall across from the windows, there were two doors, one leading to the department office and the other leading to a hallway outside the department. Two tables were set-up against a third wall. A buffet lunch was laid out on these tables. A flat screen TV hung on the wall across from these two tables.

Participants sat together around the conference table. The two trainers sat with the participants at the table. Training materials were displayed on the TV during the workshop. The pre-workshop and post-workshop assessments were completed on each participant's personal laptop computer at the conference table in the same room.

Materials included pre and post electronic assessments administered via SurveyMonkey[®], paper handouts, and an audio/visual presentation with slides and video. All video clips came from season one and two of NBC's television series *Parenthood* (Howard, Grazer, Katims, Trilling, Watson, Nevins, Massin, Ward & Goldberg, 2010). The specific scenes were selected based on three criteria: the scene needed to have multiple family members engaging in a family activity, the characters within the scene had to have multiple shifts in emotional responses, and the number of characters and the relationship between the characters needed to be similar across scenes. Table 2 contains an expanded description of each of the video clip scenes. Video clips were displayed on the TV during the workshop and on a personal laptop computer during the pre and post assessments.

Experimental Design

The effects of the training workshop on descriptions of the family interactions and reflections on personal responses were evaluated using an A-B design with multiple probe measures and replicated across four participants. A training was conducted in a workshop format that lasted 2.5 hours. The workshop began with a baseline assessment and ended with a post-workshop assessment. During the assessments, participants watched short video clips and wrote a description about each scene, creating a permanent record for the quantitative evaluation and analysis of the written narratives.

Data Collection and Measures

Pre and Post Workshop Assessments

Written descriptions about two different scenes from the television show *Parenthood* were collected before and after the training workshop. These assessments were conducted online on the participant's private laptop or on a laptop provided by the principle investigator. Participants were emailed a link to a questionnaire with comment boxes created in SurveyMonkey[®]. Video clips of family interactions were embedded within the assessment. Participants were instructed to watch the embedded video clip and then answer the question in the comment box below. The instruction prompt read: "Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed." Pre and post-assessment are discussed in more detail in the procedures section. The full assessments are included in Appendix A.

Analysis

An analysis of the written narratives was conducted by graduate students at the University of North Texas using a measurement code developed for this purpose. A brief description of the measures and definitions are included below. See Appendix B for the complete observation protocol.

Measurement Code

The measurement code was broken into two categories: comments describing emotional responses during family interactions and comments containing of reflective statements. Family

Interactions included four sub-categories of descriptions: Number of Emotion Labels, Number of Emotion Indicators, Number of Emotion Relations, and Number of People Included. Self-reflections included three sub-categories of descriptions: Participant's Own Emotional Responses, Similarities and Differences to Personal Experience, and Reflection on Clinical Evaluation. The Number of Words in each narrative was also evaluated. A brief description of each response category is included in Table 3. A scoring protocol, practice examples, and packet of narratives were provided to each observer. The observer scored the written narrative using a color coded notation system.

The first part of the narratives contained descriptions of the responses and reactions of family members within the short clip. The following categories refer to different content within these descriptions.

Emotion labels. This measure included the emotion names (e.g. happy, sad, frustrated, gleeful). They did not include indicators of emotions (e.g. smiled, frowned, shouldered sagged). A word was coded as an emotion label or feeling when the word or phrase could complete the sentence "he/she feels ____." Observers highlighted emotion labels or feelings in yellow.

Emotion indicators. This measure included words or phrases implying an emotion (e.g. smiled, frowned, shouldered sagged) without naming it. This measure included descriptions of facial expressions, body language, a specific action (e.g. a kiss or throwing an object across a room), or a description of a dimension of a behavior (e.g. speed or volume) that suggests an emotional quality. Emotion indicators did not include emotion names or labels (e.g. happy, sad, frustrated, gleeful) or descriptions of events that may set the occasion for an emotion. For example, "he fell and skinned his knee" would not be included. A word or phrase was coded as an emotion indicator when the sentence "I think he/she is feeling ____ because he/she is

_____” could be completed with an emotion label in the first blank and the word or phrase in the narrative in the second blank. Observers highlighted emotion indicators in pink.

Emotion relations. This measure included comments and descriptions that linked an emotional response to an environmental event. The relationship could be explicitly stated or implied. A description was coded as a relation when the sentence “he/she feels (emotion) because (event or another character’s response)” could be completed with the emotion and event described in the narrative. For example, the phrase “The mom looked scared when the little boy screamed” would be coded as an emotion relation, while “the dad seems like a gloomy person” would not. Observers wrote a green check mark next to an emotion label or indicator that was linked in the narrative to an environmental event.

Number of people included. This measure included the number of characters referenced within the description of a scene. For example, the phrase “the mom and dad were putting the little girl to sleep” would include three characters: the mom, the dad, and the little girl.

The second part of the narratives contained descriptions of the participant’s reactions to the family members’ behavior within each short clip. The following categories refer to different content within these descriptions.

Participant’s own emotional response. This measure included words or phrases describing self-reflection or observations of the participant’s own emotional reaction. For example, “I felt annoyed by the teacher’s response to the student” would be coded as a description of the participant’s own emotional response. Both labels and indicators were included if they were descriptions of a participant’s reaction rather than a character’s reaction. Evaluations were not included. For example, “I thought the dad should’ve responded to his

daughter sooner” would not be coded as a description of the participant’s emotional response. Observers highlighted references participants made to their own emotions or feelings in blue.

Similarities and differences to personal experience. This measure included comments referencing a similarity or difference between the participants’ history, life experiences or behaviors and the characters’ history, life experiences or behaviors. For example, “I relate to the kid in the clip. I also had to go back and forth between two parents’ homes as a kid.” Simple observations about something liked or disliked would not be included. For example, “I love how close this family seems” would not be included in this measure. Observers underlined statements within this measurement category with a purple pen.

Reflection on clinical evaluation. This measure included statements within the narrative that commented on a limitation of an interpretation or clinical evaluation. This included comments such as “It seems to me like the child learning is not a reinforcer for the mom, but it could be that we express enthusiasm differently.” It also included comments that stated that an interpretation was made by comparing the character’s behavior and one’s own behavior. For example, the statement such as “I found I sympathized with the dad because his facial expression matches what mine looks like when I am hurt but trying not to show it” would be included. Sympathetic statements without references to both the character and the participant themselves were not included. Nor were simple judgments or evaluations. For example, the phrase “I sympathize with the teacher, but I think when the child started to try to solve the math problem, the teacher should have responded” would not meet the criteria for this measure. Observers underlined these statements with an orange pen.

Number of words. This measure included the number of words written by the participant in each narrative. This count was obtained through the word count tool in Microsoft Word®.

Consistency and Interobserver Agreement

Development of the Code

Reliability of data collection was assessed using both consistency checks and interobserver agreement. For both consistency and IOA six of the sixteen narratives were chosen to develop a reliable code. The six narratives (four from Participant 1 and one pre and one post from Participant 2) were chosen as it was thought they were representative of both high and low responses in each category.

Agreement was the extent that two observers agreed that the response occurred or did not occur. Consistency was the extent that one observer scored the same narratives in a consistent manner. The process of developing the code included identifying general categories to be scored (such as emotions, people, relations). Interobserver agreement and consistency were assessed after training and the code was revised.

During the development of the code, interobserver agreement and consistency scores were formally taken six times. Development scores are presented in Table 4. IOA ranged from 36% to 100%.

Formal Interobserver Agreement

When it appeared that the definitions and scoring protocol produced reliable and consistent scoring, formal IOA was taken with three new observers who were trained to use the final version of the observation protocol. Training involved reading the code and practicing with progressively more complex stimuli presentations of the narratives. After reading the measurement code for the first of the seven behaviors, they were given several practice portions of narratives to score and receive feedback. Feedback consisted of praise, corrections with

rationales and discussions. Upon mastery, they progressed to a full narrative. The process was repeated as all seven behaviors were cumulatively added until mastery on the scoring of the seven behaviors was achieved. They were then given a full narrative to score the measure they just learned and all the measures they previously learned and receive feedback. Observers were trained on practice narratives in this way until they reached 100% agreement observing all seven behaviors without assistance.

After being trained on the formal code, observers scored each of the 16 narratives. IOA for the three coders is presented in Table 5. IOA ranged from 92% to 100%.

Procedures

General Procedures

The workshop was broken in three sections. It included a pre-training assessment, a training workshop, and a post-training assessment. Both the pre and post-assessments were conducted via the online SurveyMonkey[®] web platform. The pre-assessment was conducted during the first 30 minutes and the post-assessment was conducted during the last 30 minutes. The training portion lasted 90 minutes and included two parts. The first part contained a lecture and facilitated conversation regarding the behavior analytic approach to emotions. The second part included a series of videos of family interactions. A video clip was played and the group practiced describing emotional responses within the context of environmental events. A more detailed explanation is provided below. The group included novice and expert responders and the discussion included a mix of teaching interventions.

Pre-Training Assessment

The purpose of the pre-assessment was to obtain a baseline of participant narratives. This was accomplished via an online response form with embedded video clips. Participants were asked to watch the video and write a descriptive narrative of the scene. The specific sequence of events to complete the assessment is described below.

Participants completed the pre-assessment at the beginning of the workshop before training. As participants arrived, they were invited to take a seat and asked to open their laptop and pull out their headphones or earbuds. Once all participants arrived, the primary researcher sent an email with a link to the SurveyMonkey® questionnaire assessment to each participant. The first page of this assessment was the IRB consent form. At the end of the consent form, participants had to select “I agree” or “I disagree.” If a participant chose not to participate at this time, they were sent to a page thanking them for their time. If a participant chose to participate, they were sent to the first section of the assessment. All participants chose to participate. The first part of the pre-training assessment included demographic questions. The second part included short video clips and text boxes for participants to describe the scene. A video clip box was shown at the top of the webpage. When ready, participants clicked on the video and watched the scene. Each participant had their own set of headphones and watched the clip independently. Below the embedded video was a text box with the instructions: “Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.” Participants wrote their observations in the text box using their laptop keyboard. Figure 1 provides an example of the frame seen by the participants. Participants were told there were two videos and they would have 15 minutes to complete each

description of the video. The participants were told that after this time the workshop would move to start the training portion. If participants ended before the allotted time, they waited quietly while others finished. All participants completed the assessment before the allotted time ended.

Training Workshop

The purpose of the workshop was two fold: 1) to provide an overview, rationales, and models for observing emotions in family interactions and 2) to provide opportunities to practice narrating observations of family interactions that include descriptions of emotions and temporal relations to other events. The sequence and content of the workshop are described below. All training slides and presentation handouts are included in Appendix C.

The first part of the training session consisted of a slide presentation and facilitated discussion focusing on the concept of a contingency, observing emotional responses, and reflective observing. Participants were told that the goal of the training was to increase the descriptiveness of observations of family interactions with a focus on emotional responses. An overview of each section of the training is provided next.

The first concept discussed in the training was the concept of a contingency. A contingency was described as a dependent relation in a temporal sequence that can be thought of as an if/then statement (Mechner, 2008). The training slides stated that initial observations of contingencies provide tentative inferences regarding socially significant variables. It is helpful for a behavior analyst to pay attention to the order of behavior and moment to moment changes.

The training then presented a discussion of the way a behavior analyst learns to observe subtle changes in emotional behavior beginning with the premise that a verbal community teaches members to label states or feelings, even when the community cannot observe the events

the individual is labeling (Skinner, 1945) and that emotional responses can be productively approached by looking at what surrounds the response in the environment (Biglan, 1991; Calkin, 2002; Dougher & Hackbert, 2000; Moore, 1980; Skinner, 1945/1957/1974; Tourinho, 2011). The training went on to address the way emotional responses can be important in themselves because they can highlight important contingencies (Goldiamond, 1975; Layng, 2006; Wolf, 1978). The training emphasized that to observe emotional responses, one must observe more than the response topography. The context and consequences need to be observed. Likewise, the way different verbal communities train different types of emotional displays is also important to consider. Gender, ethnicity, age, profession provide contexts for different learning histories that in turn create topographies and functions differing from individuals with other cultural contexts. Examples were provided to illustrate the differences.

The training then discussed the role of reflective observing within the applied work of a behavior analyst. As Skinner (1974) points out, a person can learn to discriminate and observe their own behavior (both public and private) as a result of the questions they are asked, and this in turn helps a person predict and modify their own behavior. A clinician's behavior is an important element in an environment in which a client or family behaves in that they are part of the behavioral system and influence the selection of measures, goals, procedures, and outcome (Fawcett, 1991). It can be important to be able to observe one's own behavior as a behavior analyst. This section of the training provided an example of a model used to train self-reflection using questions. Examples of questions adapted for a behavior analytic context were discussed during the workshop and were provided in a handout during the training. Examples of the questions included: Are there things that I pull away from or move toward during this clip? Do the family members move toward or move away from the same things or different things? Have I

ever responded like the character is responding? What was happening at the time? In what ways are my identities, experiences, reinforcers/punishers similar to the family members' and in what ways are they different?

During the second part of the training workshop, several short video clips were shown and the group (participants, the author, and the experienced clinician) discussed and identified different emotional responses within the context of other characters' behavior or other environmental events in the scene. During the discussion and practice sessions, subtle changes and differences in behavior were described and labeled. The video would be rewound and the group would watch the short instance of behavior. Other participants would agree with the description and label or disagree and offer an alternative. For example, one participant would say "the mom looks worried then relieved." Other people in the group would make comments such as "Yea, it looks like the mom is feeling a happy-relieved. You can kinda tell by the way her shoulders relax and she smiles a little when the dad offers to read the bedtime story." Sometimes a group member would contradict an observation and make a statement such as, "Is she smiling? I thought it looked more like a grimace." The clip would be rewound and re-watched and the group would watch the response again, pointing out and describing more and more subtle aspects of the characters' behavior. During the discussions, the emphasis was not placed on participants making a correct or incorrect answer (the training did not show an example of a mom smiling and ask participants to label the emotion). On the contrary, the training addressed the inability to know for certain what emotion another person is feeling. Instead, participants were asked to describe observations of subtle shifts in behavior and to notice what happened before and after the shift occurred.

It was intended that the group would also practice making observations about their own

responses and the content of their comments about the characters' behavior (their potential biases, possible misunderstanding due to differences in learning histories, potential limitations in their own ability to interpret an emotional response). However, during the second part of the training this skill was modeled but few opportunities for practice occurred.

During the discussion, the primary researcher or the expert clinician would periodically direct participants to the handouts provided at the beginning of the training. Both handouts are provided in Appendix C. One handout included Parrott's (2011) Emotion Classification. This handout included several basic emotions with additional related emotions branching out from each basic emotion. For example, a circle with the word "joy" was surrounded by different circles each with words such as "zest," "pride," "contentment," "relief," "optimism" and "enthralment."

A second handout included a list of prompt questions. The prompt questions were broken into two sets. The first set related to the first half of the instructions in the assessments (the description of the family interactions) and included questions such as "what emotional responses do I see and where in the behavior stream do I see them?" The second set of questions referred to the second part (the self-reflection) and included questions like "Are there things I pull away from or move toward during the clip? Do the family members move toward or move away from the same things or different things?"

The training was arranged to promote active participation and lively conversation. Refreshments were provided. The room was arranged so the participants were sitting together with the primary and experienced clinician. The group sat in a u-shape around a table so that all groups members could easily see each other and the slide and video screen. The author engaged in friendly conversation with participants as they arrived setting the tone of a casual and relaxed

training atmosphere.

Post-Training Assessment

The post-training assessment was conducted right after the end of the training. The post-assessment was in the same format and structure as the pre-assessment. The post-assessment included the same instructions provided in the pre-assessment: “Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.” Just as before, participants were told there were two videos and they would have 15 minutes to complete each description of the video. The full post-training assessment is included in Appendix B. Figure 2 on provides an example of the post-training frame seen by the participants. The SurveyMonkey® link was delivered to each participant via email. The video clips in the post-training assessment were different clips from the same TV show. The videos were matched to pre-assessment video clips in regards to the number of characters, the occurrence of multiple and diverse emotional responses by multiple characters, and the general emotional intensity of the scene. This assessment did not include demographic questions, instead at the end it had short answer questions asking if participants had seen the show *Parenthood*, if they had observations or comments regarding the study and if they would consider the ability to observe emotional responses and understand interlocking contingencies between people within a family if a family member was in need of a behavior analyst. Participants were asked to expand and explain why or why not.

RESULTS

The results are displayed in four figures. The graphs of the three emotion measures (emotion labels, emotion indicators, and emotion relations) are displayed in Figure 3. The graph in Figure 4 shows the total number of words used in the narrative. Figure 5 shows the number of characters included in each narrative. Figure 6 shows the graphs of the three self-reflection measures (participants own emotions, similarities and differences, and reflections on clinical evaluation).

On the left of each graph are the results of the analysis of each participant's pre-assessments narratives describing video one and video two. The dashed line indicates where training took place. On the right are the results of the analysis of each participant's post-assessments narratives describing video three and video four. The data are grouped by video clip scene. Each participant's data are displayed for each scene with the first participant's data shown then the second's and so on. The y-axis depicts the number of words or phrases. The x-axis depicts the participant number and the video clip the narrative described.

Descriptions of Emotions

Figure 3 displays the results of the quantitative analysis of the participants' descriptions of the emotional responses within family interactions including the number of emotion labels, the number of emotion indicators, and the number of emotion relations. The analysis of the narratives indicates that the number of emotion labels and the number of emotion relations increased from pre-assessment to post-assessment. The number of indicators remained low.

Number of Emotion Labels

The number of emotion labels used in the narratives increased for all participants. Participants 2 and 4 (females) used more emotion labels than participants 1 and 3 (males). Participant 2's use of emotion labels increased from 12 and 2 in the pre-assessment narratives to 17 and 32 labels in the post-assessment narratives. Participant 4's use of the emotion labels were the highest of all the participants. In her narratives emotion labels increased from 13 and 8 in the pre-workshop assessments to 18 and 39 in the post-workshop assessment. Participant 1's use of emotion labels increased from 5 and 8 in pre-workshop assessment to 9 and 18 in the post-workshop assessment. Participant 3's use of emotion labels increased from 2 and 0 in pre-workshop assessment to 12 and 15 in the post-workshop assessment.

Number of Emotion Indicators

The number of emotion indicators used in the narratives was low across all participants in both the pre and post-workshop assessments. The number of indicators used by Participant 1 and Participant 3 ranged from 0 to 1 in all narratives. Participant 2 used 1 and 2 emotional indicators in the pre-workshop assessment narratives one and two respectively and 3 and 0 in the post-workshop assessment narratives. Participant 4's pre-workshop assessments included 4 and 5 indicators in the pre-workshop assessment narratives and 5 and 4 indicators in the post-workshop assessment narratives. The participant with the largest number of emotional labels in her narratives (Participant 4) also used the highest number of emotion indicators.

Number of Relations

The number of references relating a character's emotional response in relation to an

environmental event increased across all participants between the pre-workshop assessment and the post-workshop assessment. Participant 1's references to emotional relations increased from 4 and 4 in the pre-workshop assessment to 5 and 13 in the post-workshop assessment. Participant 2's references to emotional relations increased from 6 and 1 to 13 and 32. Participant 3's references to emotional relations increased from 1 and 0 in the pre-workshop assessments to 7 and 11 in the post-workshop assessment. Participant 4's references to emotional relations increased from 10 and 8 to 21 and 43.

Number of Words in the Narrative

Figure 4 shows the total number of words in each participants' pre-training and post-training narrative descriptions of the family interactions. The total varied across participants, videos and conditions. The number of words included in the narratives increased for the two participants with shorter responses in the pre-training assessment (Participants 2 and 3). Participant 1 and Participant 4 wrote long responses in the pre-training assessment and wrote lower responses in the first video of the post-training assessment and longer responses to the second video. All participants completed the narratives in the pre-assessment before the allotted time ended. Three of the four participants wrote until the very end of the allotted time during the post-assessment.

Number of Characters Included in Narrative

Figure 5 shows the number of characters included in the narratives. The outlined column indicates the number of people in each video clip. The shaded portion of the column indicates the number of characters described in each participant's narrative in the pre-training and post-

trainings assessments. The number of people identified increased very slightly but was more variable among participants in the post-assessment than the pre-assessment. All but one participant included every character in the video clip in the pre-workshop narratives. All participants described between three characters and six characters in the narratives. Each participant referenced the main characters in the video in both the pre and post-workshop narratives. In the post-workshop narratives, some participants included references to characters who played a minor role in the scene.

Reflective Comments Within Narrative

Figure 6 displays the number of self-reflective comments participants used in their narrative. There were not significant changes in the reflective comments participants made regarding participants' own responses. A slight increase occurred in the number of emotional responses participants observed of themselves. The number of similarities and differences referenced and the number of reflections on clinical evaluations were low in both the pre and post-workshop narratives.

Number of References to Participant's Own Emotions

Participant identification of personal emotional reactions increased slightly between pre and post-workshop assessments for Participant 1, 3 and 4. Participant 1 did not reference his own emotions in the narratives in the pre-workshop assessment and referenced his own emotion once in the first narrative in the post-workshop assessment. Participant 3 referenced his own emotion once in each pre-workshop assessment narrative and once in the first narrative and twice in the second narrative of the post-workshop assessment. Participant 4 referenced her own emotion

twice in the first narrative, once in the second narrative. The number of references to her own emotion increased in the post-workshop assessments to four times in the first narrative and went back time to twice in the last narrative. Participant 2 referenced two different personal emotional responses in the first video of the pre-workshop assessment and did not mention her emotions in later narratives.

Number of Reflections on Similarities and Differences

Comments referencing a similarity or differences between themselves and the characters in the video occurred at a very low rate in both the pre and post-workshop narratives. Participant 4 made one reference in the first video of the pre-workshop assessment. Participant 1 made one reference in the first video of the post-workshop assessment.

Number of reflections on clinical evaluation

No comments referencing the way a similarity or difference might impact a clinical evaluation were made in the pre-workshop assessment and two such comments were made in the post-workshop narratives. Participant 1 and Participant 4 both made a reference in the first video of the post-workshop assessment. Participant 2 and Participant 3 did not make reflective comments on their clinical evaluation.

DISCUSSION

The purpose of this study was to evaluate the effects of a training workshop on the descriptions made by behavior analysts-in-training of emotional responses within an on-going family interaction. The purpose of this study was two fold. First, to develop a short training package, which included the development of a small verbal community. The goal of this training was to increase descriptions of emotional responses and self-reflective comments among behavior analysts-in-training. The second purpose of the study was to develop and test the reliability of a measurement and observation system to count different aspects of the descriptions of emotional responses and self-reflective comments. The training itself had two aims. The first was to provide information for novice behavior analysts on a behavior analytic approach to emotion. The second was to provide opportunities for novice behavior analysts to practice observing emotional responses and describing where they occur within a behavior stream. The training also provided opportunities to practice describing emotional responses within a behavior analytic community. The study's results suggest that the training workshop described herein resulted in a verbal community in which the descriptions of emotions were reinforced. The results indicate that this training was an effective way to increase descriptions of emotions within the context of environmental events. The training did not appear to result in a verbal community in which self-reflective comments were utilized and reinforced. The training did not result in an increase in self-reflective comments. All participants' descriptions of emotion labels and emotion relations increased from the pre-assessment to the post-assessment while the number of emotion indicators remained the same. The number of words did not increase suggesting that the increase in descriptions of emotions was not a function of lengthier descriptive narratives. This is the first

study to systematically investigate teaching of emotional response observation to behavior analysts-in-training.

No studies have addressed training in this way. Previous research has targeted the identification and classification of emotions. Golan et al. (2010) evaluated the effectiveness of an animated television series designed to help children recognize and understand emotion. The study was similar to the present study in that it evaluated the effectiveness of a training package which focused on increasing participants' ability to recognize emotional responses. Both studies utilized material from a television series. However, the two training packages were different in that Golan et al. (2010) had children in the study watch the video clips at home for four weeks and then tested their knowledge of emotional responses at the end of the four weeks. The present study trained during a two-and-a-half-hour workshop. It also provided instructions and the target behaviors were modeled and practiced within the training workshop. It was designed for adults and utilized a single-subject design rather than a group design.

Previous research looked at training designed to increase adults' tendency to make subtle observations. Taylor and Alvero, (2012) found that instructions, modeling, practice and feedback could increase adults' accuracy when observing subtle muscle movements and body positions of people in a video. The present study was similar in that it also trained participants to observe subtle changes in behavior (including subtle muscle movement and body posture) using instructions, modeling, practice, and feedback. Both studies trained adults to categorize observed behaviors. There were also several differences. Unlike the present study, Taylor and Alvero (2012) provided feedback based on accuracy. The present study did not provide feedback based on accuracy of a classification but rather on descriptive comments that identified additional detail in the observed behavior.

The present study also shares several features of Bardes et al. (2001), who used paintings to teach subtle discriminations. Feedback was provided within a conversation among peers. Both studies explored group discussion as a means of developing clinical observation skills. Bardes et al. (2001) investigated discussions of paintings at an art museum as a means of developing observation skills among medical students, while the present study explored discussions of a television show as a means of developing observation skills among behavior analytic students. By using clips from a television show, the present study was able to extend the findings of Bardes et al. (2001). In the present study, the group discussion included the dynamic and fluid nature of emotional responses and the temporal relation between emotional responses and other events that occurred within the environment.

Like earlier work, this study also found that women described more emotional responses than men (Brody & Hall, 2000; Dimberg & Lundqvist, 1990). However, unlike earlier studies, this study evaluated a change in the observation and description of emotional responses as a function of training. The number of descriptions the men in the study mentioned increased between the pre and post-assessments suggesting that the ability to observe emotional responses may vary as a function of the training within one's social community rather than being directly related to gender.

In summary, this present study extends our knowledge of training by extending what was taught to include the description of emotional responses within the context of environmental events. It includes adult students of behavior analysis in particular. It expands on the way the observation of emotional responses is taught focusing on the verbal communities' reinforcement of observation, discussion and description rather than on the correct discrimination and tacting of an emotional expression.

While the results suggested that the workshop design does result in a change in behavior, there are several specific avenues of research to follow. While emotion labels increased emotional indicators did not. There are several factors that may have contributed to this difference. For one, there was a greater emphasis on labels in the training workshop. A range of examples of emotion labels were provided during the lecture and in handouts. For another, the training was designed to emphasize the relation between an emotional response and an environmental event. It was not designed to target the way specific topographies tend to indicate specific types of emotional responses. However, as specific topographies tend to be less interpretive than emotional labels, it may be beneficial to lengthen the training and include more opportunities to practice describing the emotion indicators. Although no participants were stopped by the time limit, the timed structure may contribute to a general reason for the use of labels, it is more efficient. Fewer words are required to communicate an idea (someone can say “the mom seemed happy” and communicate that the mom was smiling, had a body position suggestive of relaxed muscle tone, used a voice tone at a moderate volume level and a slightly higher pitch). Such limits may result in people adapting more time-efficient communication strategies.

The training workshop did not result in an increase in self-reflective comments. In retrospect, instructions and models were provided for self-reflection but the workshop contained limited opportunities for practice and feedback. The discussion of emotions from a behavior analytic perspective made up the bulk of the training. In hindsight, it may be beneficial to extend the training to focus on the observation of emotional responses in one portion and self-reflective observations in another portion. Self-reflection is probably an advanced and complex form of observation. A more systematic analysis of the component behaviors involved in this type of

observation and response may be useful. Certainly the observation and analysis of a behavior analyst's own behavior is a worthwhile goal (Skinner, 1945; Fawcett, 1991).

Three specific limitations regarding implementation should be noted. First, while pre-assessment descriptions of emotional responses were relatively similar in both pre-assessment video narratives, participant one's data showed an upward trend in the pre-assessment. More videos may be useful in establishing baseline patterns over time. Second, the pre and post assessment sessions were conducted as part of the training and some degree of experimental control was probably lost. This structure allowed for multiple uncontrolled variables. For example, it is possible that some aspect of the small talk that occurred as participants arrived may have influenced the results. Third, not all dimensions of the videos in the pre and post conditions were effectively balanced. Specifically, a video in the post-assessment included a scene in which characters in the scene referenced additional people (when telling her parents about her day, a teenager mentioned her aunt and her aunt's co-workers). Some of the participants included the aunt and the aunt's co-workers and these references were included as characters in the narrative even though those characters did not appear in the video clip. This may have resulted in variations in the number of people included in the post-training assessment.

The effects of the training were evaluated in a pre-post design and drawing conclusions from a pre-post study design can be problematic. For example, it is not possible to be certain the behavior would not have increased on its own without the intervention (Barlow, Nock, Herson, 2009; Risley & Wolf, 1973). It is possible the results were due merely to the effects of practice. This design also fails to provide opportunities to evaluate critical factors regarding the different aspects of presented stimuli controlling the behavior. A multiple-baseline design would allow for a more detailed analysis of the stimulus and response classes involved in the description of

emotional responses and self-reflection. Similarly, a multiple-baseline design would contribute to our understanding of how to plan for the generalization of the skills trained in the workshop.

That said, logistical considerations were also important (Barlow et al., 2009). Pre-post designs are both practical and efficient when evaluating the effects of a short training workshop. Results from a pre-post study can contribute to the development of questions to explore in future research.

Despite the limitations, this study contributes to the development of a systematic way of analyzing descriptions of emotional responses within a family interaction. The lack of an effect in the number of self-reflective comments is also a useful finding. The increase in descriptions of emotions within the context of a stream of behavior after a two-and-a-half-hour workshop is encouraging. The study contributes toward our understanding of effective training strategies and suggests that the observation and description of emotional responses can be effectively taught when training skills relevant to clinical work.

It is important to note that participants in this study were diverse. Participants included traditional and non-traditional students, Caucasian, Asian, and African American students, males and females, students from different economic backgrounds, and students from the US and South Asia. The cultural background of specific participants was not included for reasons of confidentiality, but all participants increased descriptions of emotional responses within the context of environmental events regardless of differing backgrounds. The amount of change that occurred between the pre and post-assessments were variable. Whether this variability was due to participants' experiences as members of particular gender, ethnicity, previous profession, or educational background is not clear and could be explored in future work.

The development of the measurement code provided opportunities to explore areas of agreement and disagreement regarding emotional constructs. The development process of the observation code resulted in high IOA across multiple observers. Areas of agreement and disagreement during the development of the code may highlight areas in which additional research could be valuable.

Surprisingly, emotion labels were much easier to code. During training, coders reached mastery on coding emotion labels sooner than emotion indicators. Indicators were often missed during practice narratives, however when asked about the phrase directly, coders frequently agreed it was an emotional indicator and should be coded when they were asked to look specifically at that word (kissed, smiled). Indicator words describe the topography alone and were sometimes used in a context in which an emotional response was not clearly present. For example, one can kiss someone as part of a greeting as a habit or routine. Likewise, a phrase such as “she brushed him away” would be coded as an emotional indicator, but “brushed away” is frequently used in unemotional contexts. You can brush away dirt from a table or brush your hair out of your face without conveying a particular emotion. While indicators were more descriptive of the topographies of the emotional responses, they also seemed to rely heavily on the words around them for context and lacked information about functional relations that were sometimes implied by emotion labels.

Another observation stemming from the development of the code was that regional differences resulted in coding differences. For example, the word “direct” was coded as an emotional description when the coder was from the Midwest and was not when the coder was from the West and East Coast. During discussion among the coders, the person who coded it as emotional response described her community and how people are trained not to be “direct.”

Directness was perceived as an aggressive emotion. In her experience, people are direct when they are in some sort of duress, when they are angry or stressed and are not as posed or intentional about their behavior. The people who did not coded it as a description of an emotion described their learning history. People were trained to be direct in their community, because it was seen as open and concise. Someone who was not being direct might be avoiding or hiding a topic or an emotion. The differences in coding reflected a real difference in the way different communities train people to respond and behave. It may also suggest that breaches from a social norm or community value may function as an emotional indicator.

This research revealed additional areas for potential study. For example, the range and diversity of emotion labels appeared to be higher in the post assessment descriptions than the pre-assessment descriptions. In the pre-workshop assessment one participant described each emotional response with a single word: “upset.” In the post-workshop the participant described the emotional responses using several words including “anguish, excited, agitation, contempt, enjoyment.” The specific types of emotional labels used should be explored and evaluated in more detail.

The change in the way participants compared and contrasted emotional responses of different family members might also be explored. Participants appeared to describe the emotional responses of each family member in relation to the emotional responses of the other family more often in the post-test than the pre-test.

It was inferred from the results that a verbal community was created for the description of emotional responses. However, further research looking at this study element is needed. Future studies should record conversations during the training workshop. This would allow for a closer analysis of interactions during the training and the relationship between the descriptions and

relations modeled and those that occur in the post-workshop narratives. A more detailed analysis of specific verbal exchanges during the training is needed to understand the mechanisms responsible for the change that occurred as a result of the training.

Behavior analysts are not systematically taught to observe the emotional responses of the clients or families with whom they work. Part of the reason for this may be that there is difficulty in the definition and conceptualization of what an emotional response is and what significance it has. However, it is clear that clinically it can be useful for a behavior analyst to be able to observe emotional responses. Emotional responses can flag potential reinforcement or punishment contingencies and may be part of a contingency requirement that is functionally related to important social consequences. Emotional responses can contribute to a behavior analyst's selection of socially significant goals, targets, and effective teaching procedures. In addition to all these, learning to observe one's own emotional response can help behavior analysts become better observers of the way different contingencies influence their own responses within a clinical setting. This study was a step toward a behavior analysis of the teaching of emotional response observations and the first to systematically investigate teaching emotional response observations to behavior analysts-in-training.

Baer (2001) describes applied research as an acid test for what is understood about the current knowledge of human behavior. When one can create systematic change in behaviors of importance and identify environmental factors that result in that specific change, one has advanced their knowledge of how behavior works (Baer, 2001). Through the process of trying to create a verbal community to identify emotions and possible contingences that they flag, it will be possible to extend a conceptual understanding of the functions of emotional responses. Through this process, a researcher will learn more about what constitutes an emotional response and will

gather information about the conditions under which people identify particular behaviors as emotions and not emotions. Likewise, it will result in a better understanding about how individuals observe their own reactions to the emotional responses of the people with whom they are working can be obtained. In summary, by learning to create and understand the process of systematic change, we contribute to approach a behavior analysis of emotions.

Table 1

Participant Demographics

Question	Participant 1	Participant 2	Participant 3	Participant 4
What is your gender?	Male	Female	Male	Female
How many years of experience do you have doing applied work within the field of behavior analysis?	3-5 years	Less than 3 years	Less than 3 years	3-5 years
Which of the following categories describes your training in ABA?	Professional development and on-the-job training in behavior analysis, and bachelor's degree in a related field with coursework in behavior analysis	Master's degree in a related field with coursework in behavior analysis	Professional development and on-the-job training in behavior analysis, some college courses in behavior analysis	Master's degree in behavior analysis

Table 2

Video Clip Material

Video Clips				
	I	II	III	IV
Title	Playing Ball at the Park	Bedtime	Job Shadow Discussion	Swim Lesson
Description and People	A mom and dad are watching a new therapist playing ball with their teenage child at a park. While the watch, the therapist successfully coaches him to ask another kid to play with him.	A mom is putting her young daughter to bed when her daughter asks if her dad could put her to bed instead. Dad comes up and sings his daughter to sleep.	A mom and a dad are talking to their teenage daughter about her lunch with her aunt. The daughter talks about how great it is to have a woman to look up to (talking about her aunt).	A dad is at a swim lesson with his daughter when the mom joins them at the pool. The mom tries an alternative way to teach her daughter to swim with results.
Examples of Possible Emotions	hope, lonely, gloom, trilled, happy, joyful, fearful, disappointed, sorrowful, ashamed, surprised, confused, glad, delighted, dread, nervousness, apprehension, frustration, relief, triumph, happiness, pride.	love, fondness, hurt, isolated, sorrow, admiration, affection, love, tenderness, longing, disappointment, fearful, resigned, apprehension, embarrassed, sorry, regret, sadness, resentful,	Excited, jealous, annoyed, impressed, unhappiness, helpless, disgusted, inspired, anguished, contempt, agitation, hurt, humiliation, frustration, regret, optimistic, grouchy, uneasiness, enthusiastic	delight, hope, love, anger, disappointment, affection, confused, joyful, proud, triumph, longing, surprise, shock, alarm, panic, discomfort, embarrassment, humiliation, dismay, confused, mortified, pity
Examples of Possible Indicators	Smiled, frowned, scowled, raised eyebrows, shoulders sagged, blinking really fast as if trying not to cry, eyes lit up	Caressed, gazed, signed, frowned, smiled, shoulder's tensed, eyes softened, pursed lips	brushes kiss away, scowled, eyes open wide, voice animated with a lot of changes in pitch, mom avoided eye contact	Screamed, flailed arms, laughed, burrowed eye brows, eye brows raised suddenly, corners of mouth, cheeks lifted into a smile

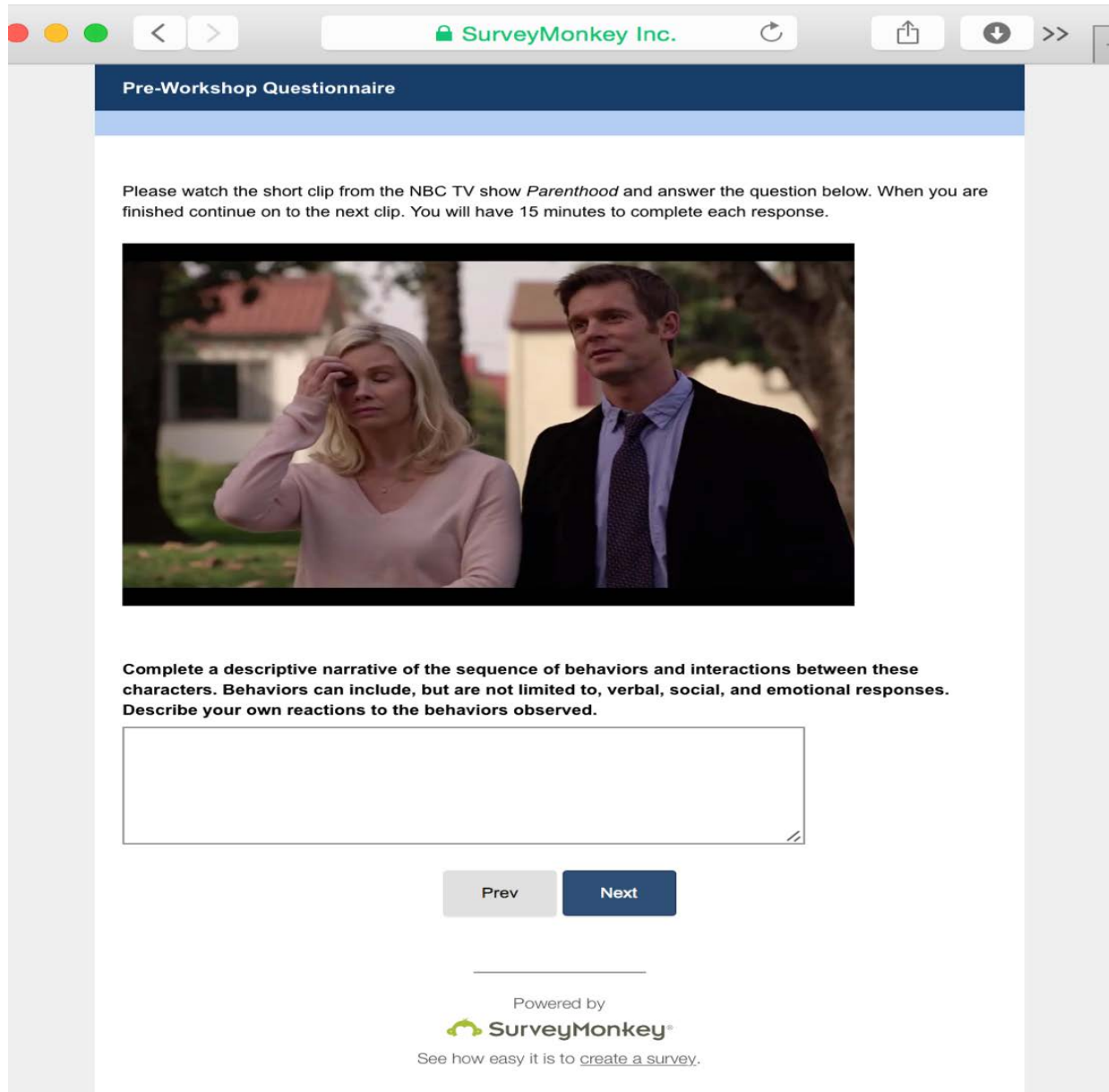


Figure 1. View of participants' screen during pre-training assessment.

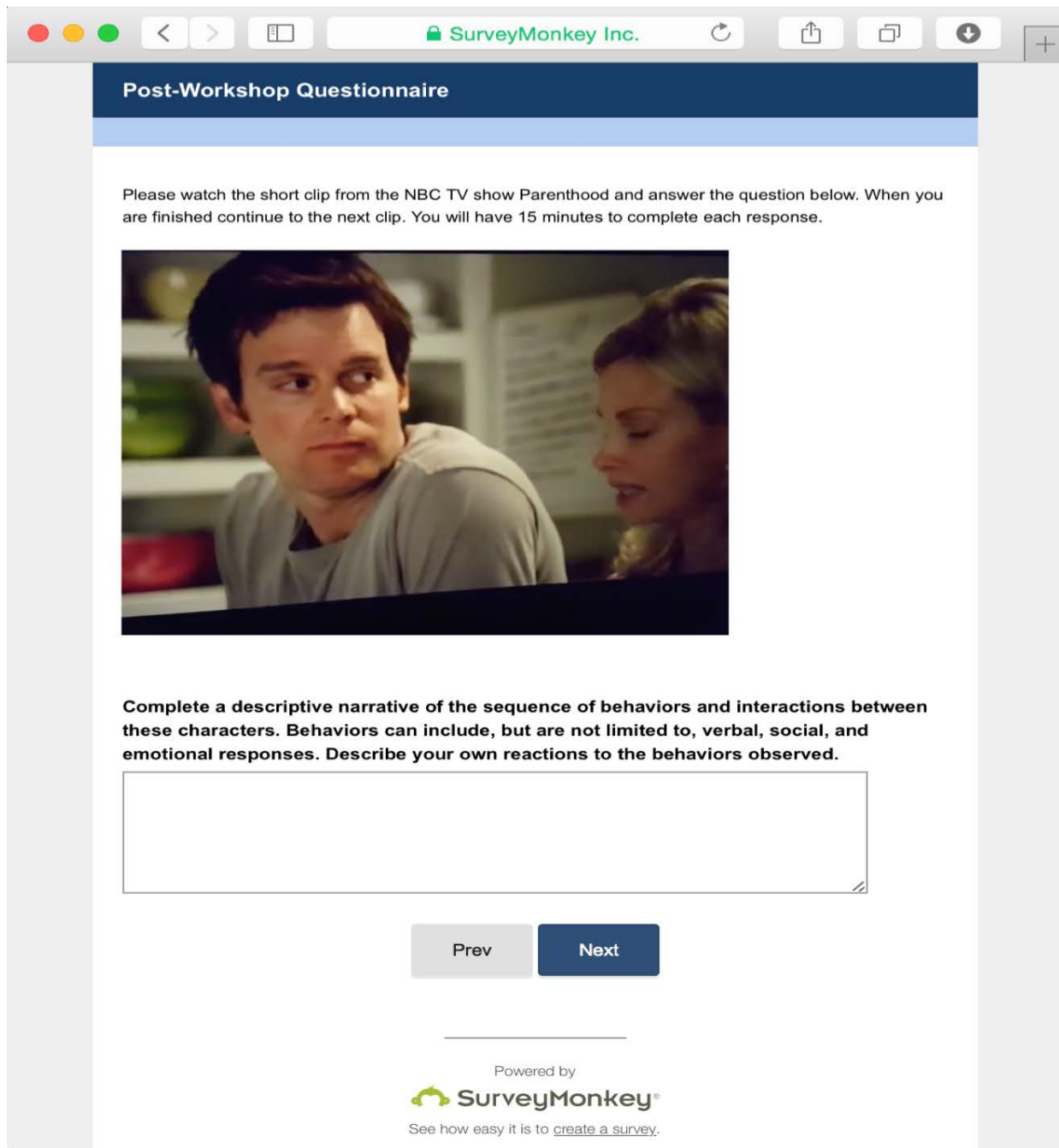


Figure 2. View of participants' screen during pre-training assessment.

Table 3

Summary of Measures

Measure	Definition
Word Count	The total number of words in the narrative obtained using the word count tool in Microsoft Word®.
Number of People Included	The number of characters included within the description of a scene.
Emotion Labels	Words/labels used to describe a characters' emotions or feelings (e.g. happy, disappointed, agitated). An emotion label or feeling was coded when the word or phrase could complete the sentence "he/she feels _____."
Emotion Indicators	References to a discrete movement or short response, or response quality like speed or volume that is often interpreted as an emotional response (smiled, frowned, yelled, eyes sparkled). The emotion is not mentioned directly but it is implied by the description of the emotional behavior.
Emotion Relations	An emotion that is related to a behavior of another person or an event in the narrative.
Participant's Own Emotional Responses	Words or phrases describing the participant's own emotional reaction to the video clip.
Similarities and Differences to Personal Experience	Comments referencing a similarity or difference between the participants' experiences or behaviors and the video clip characters' experiences of behaviors.
Reflection on Clinical Evaluation	Statements within the narrative referencing the way a similarity or difference contributed toward or limited the interpretation of the video clip character's behavior.

Table 4

Development IOA

Measures	<i>Divided smaller frequency by larger frequency x 100</i>		<i>A / (A + D) X 100</i>			<i>A / (A + D) X 100 including agreements about non-occurrences</i>
	OB2	OB3	OB1	OB1	OB2	OB2
Emotion Labels	83%	87%	89%	89%	77%	99%
Emotion Indicators	83%	100%	89%	88%	36%	99%
Emotion Relations	76%	87%	63%	96%	69%	99%
Number of People	92%	64%	100%	100%	90%	99%

Note: OB2 refers to Observer 2, OB3 refers to Observer 3, etc. The scoring by the observer listed in the table was compared with Observer 1's scoring. When OB1 is listed, scoring was compared with a second set of scores coded by OB1 to assess consistency. The code was revised between each assessment of inter-observer agreement during the development phase. The scores on the far left show the first development IOA. The scores on the far right show the final development IOA.

Table 5

Development IOA

Measures	<u>Agreement with OB1</u>		
	OB4	OB5	OB6
Emotion Labels	99%	99%	99%
Emotion Indicators	100%	100%	100%
Emotion Relations	86%	99%	98%
Number of People	97%	96%	87%
Participant's Own Emotions	100%	100%	100%
Similarities and Differences	100%	100%	100%
Impact on Clinical Evaluation	100%	100%	100%

Note: IOA for Number of People was calculated smaller frequency by larger frequency x 100. IOA for each other measure was calculated using $A / (A + D) \times 100$.

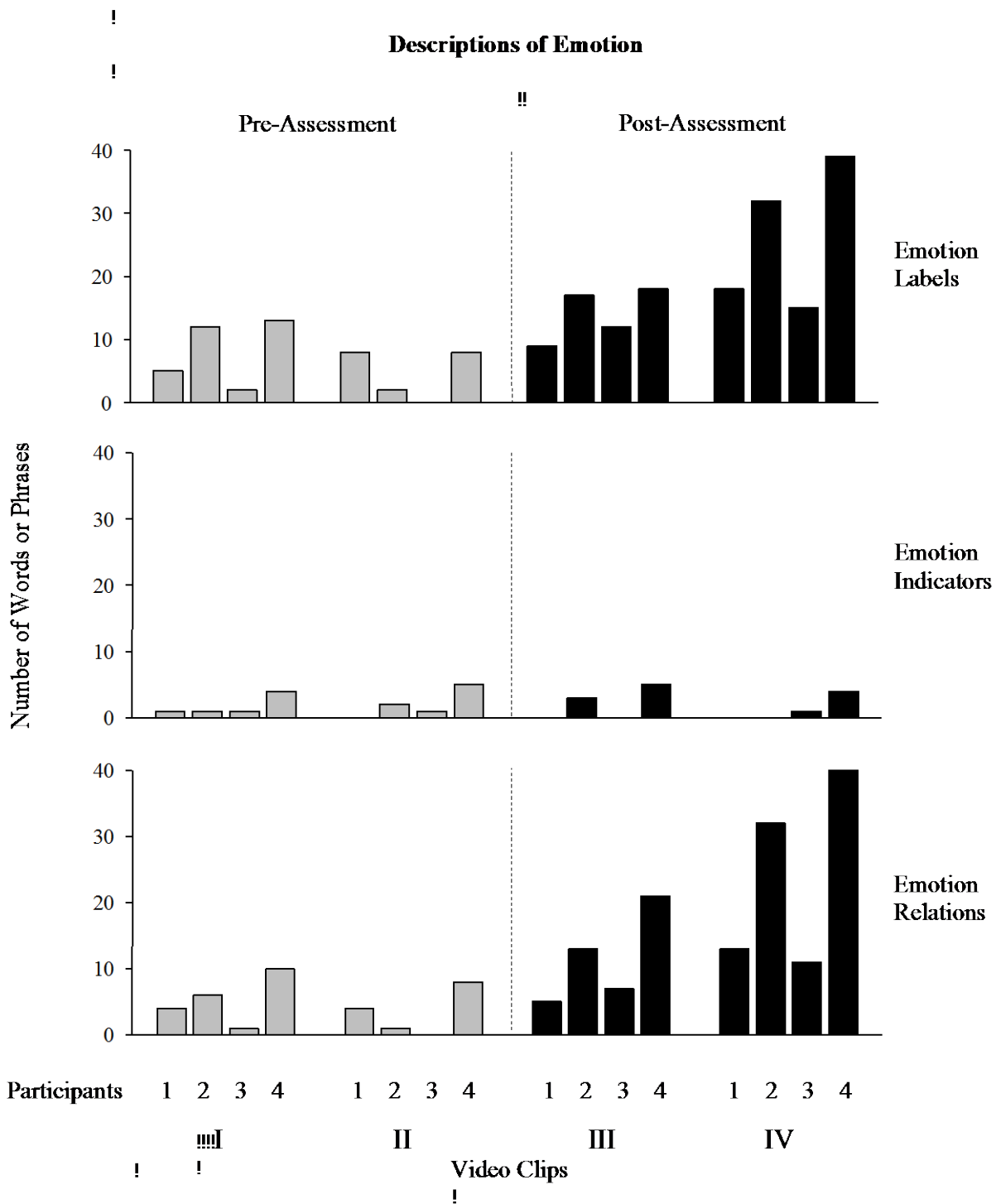


Figure 3. The number of descriptions of emotional responses across participants in the pre-training and post-trainings assessments.

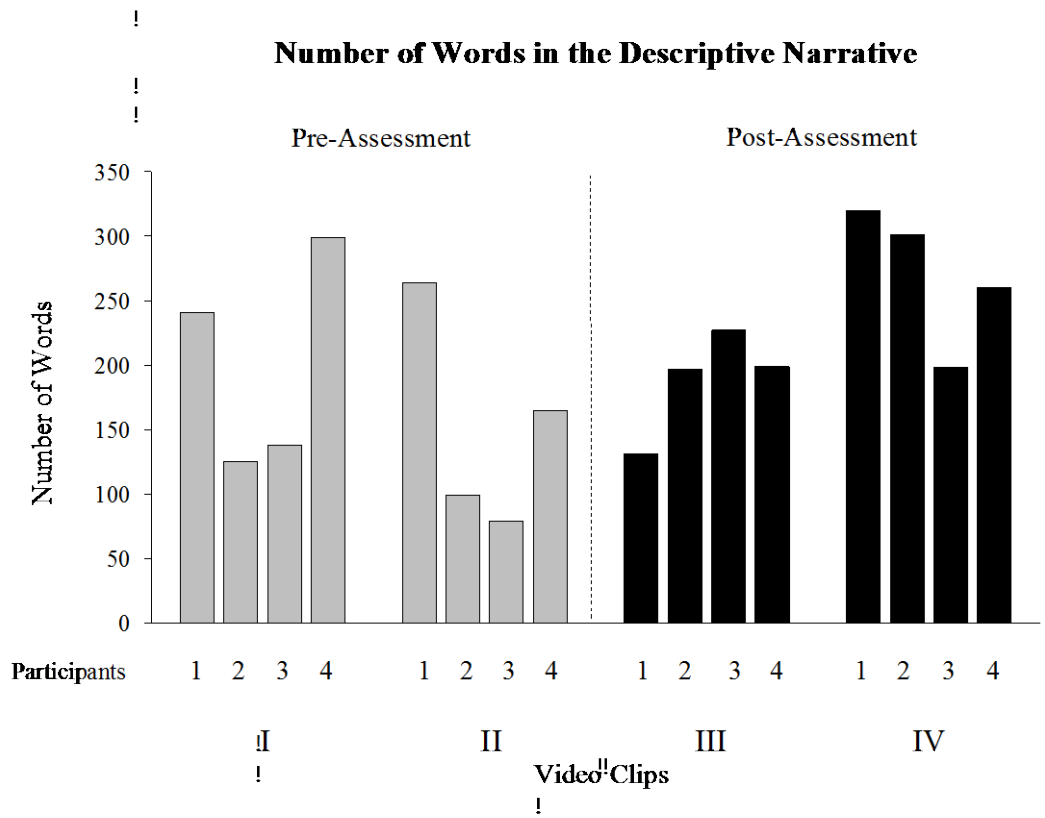


Figure 4. Number of words in each participant’s descriptive narrative across video clip and assessment condition.

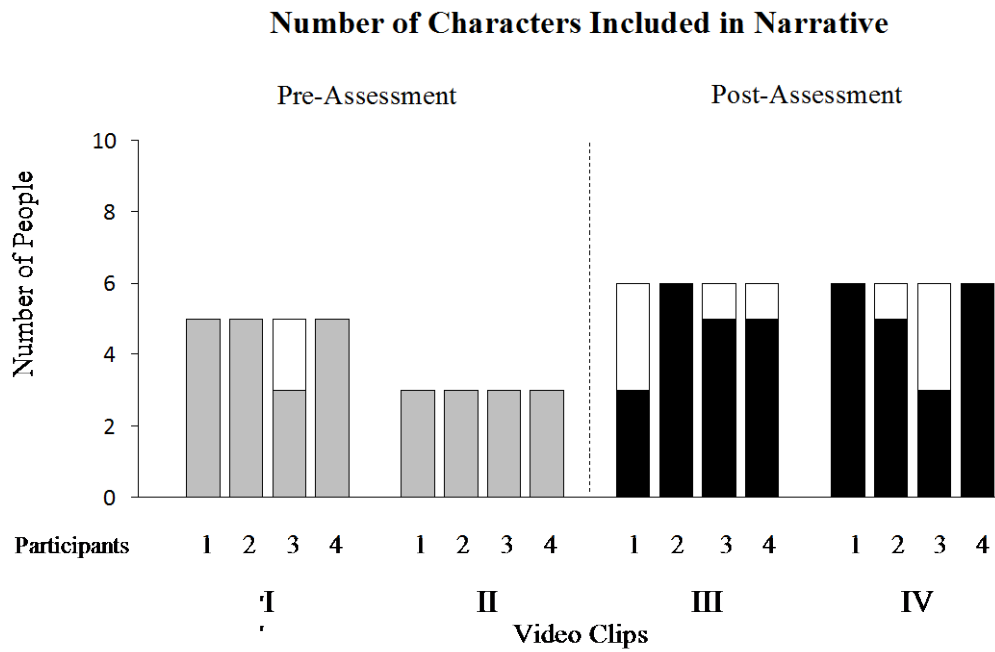


Figure 5. The outlined column indicates the number of characters in each video clip. The shaded portion of the column indicates the number of characters described in each participant’s narrative in the pre-training and post-trainings assessments.

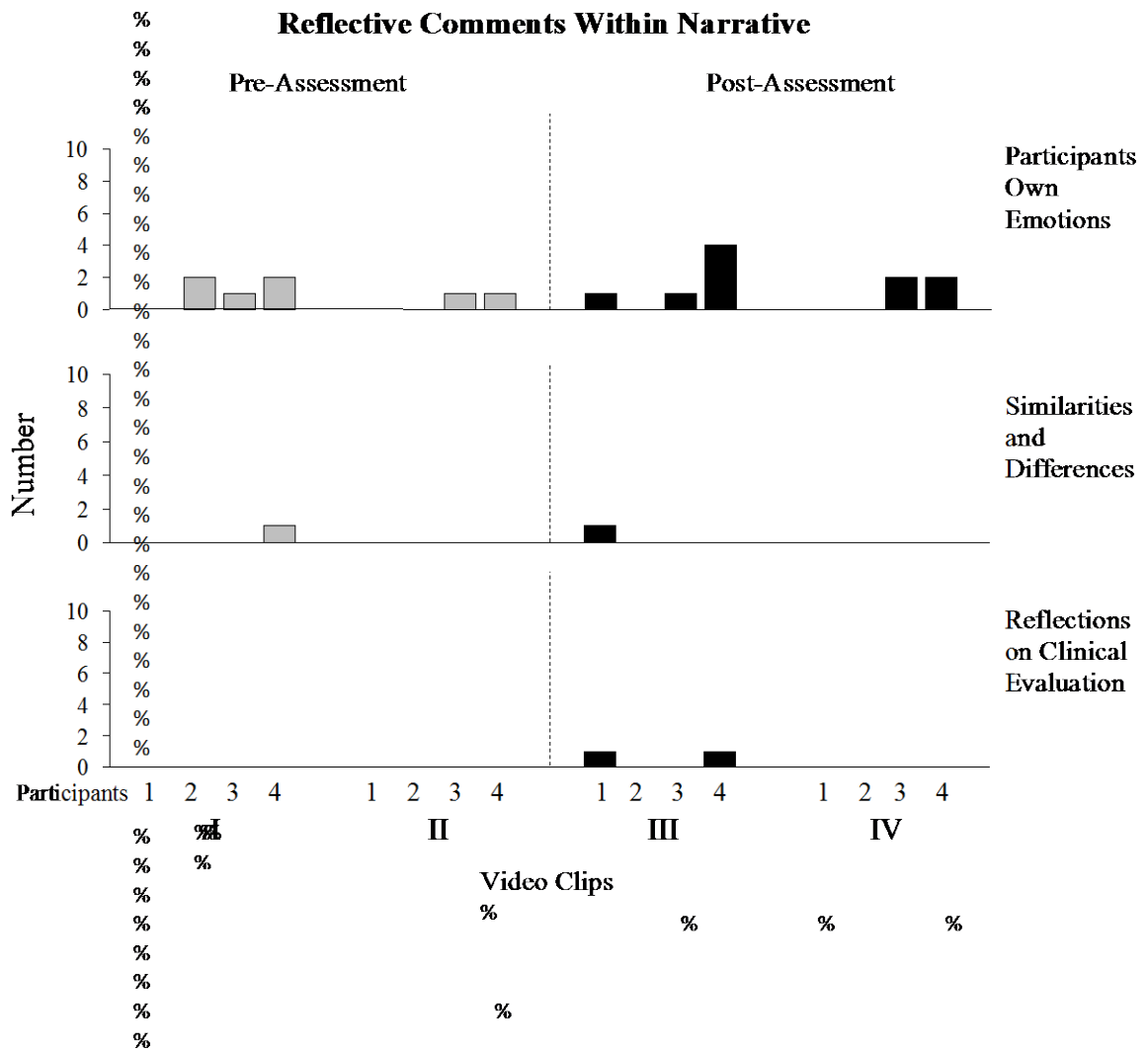


Figure 6. The number of self-reflective words or phrases within the descriptive narratives across participants in the pre-training and post-trainings assessments.

APPENDIX A
OBSERVATION AND MEASUREMENT CODE

CULTIVATING COLLABORATION
OBSERVATION SCORING PROTOCOL

A MEASUREMENT CODE AND SCORING PROTOCOL FOR NAMING CHANGES IN EMOTIONAL
RESPONSES DURING OBSERVATIONS OF FAMILY INTERACTIONS

July 6, 2016

Regan Garden
Shahla Ala'i Rosales, PhD
University of North Texas

FAMILY INTERACTIONS

INSTRUCTIONS FOR CODING

OVERVIEW

Each response is a written description of a family interaction. The participants observed short video clips taken from a popular TV show. You are receiving a document which includes the narratives just as the participants wrote them without changes to typos or sentence structure.

Narrative example:

Response Code: P16F
The mom was putting the little girl to bed. The little girl looked up frowning when the mom started to sing and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad came up and sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I wanted the mom to stay upstairs with the dad and little girl, but maybe that would have been weird for this family. It looks like dad is the primary care provider for the child. That was different from my experience as a kid. My mom stayed home when I was young.

This measurement system is broken into two parts.

Family Interactions: The first part counts different elements within the descriptions of the family interactions. This includes the number of characters, the number of emotion labels, the number of emotion indicators, and the number of relationships between emotions and environmental events or character behaviors.

Reflections: The second part counts different elements within the descriptions of a participant's reaction to the family interactions. This includes the participant's own emotional responses, references to similarities and differences between the participant's experience and the family's in the scene, and the identification of potential ways one's own reactions impact one's clinical evaluation of a family interaction.

Materials needed:

code
narrative packet
pen

blue highlighter
pink highlighter
yellow highlighter

green marker
purple marker
orange marker

INSTRUCTIONS FOR CODING

STEP 1

NUMBER OF PEOPLE INCLUDED

- A. Read through the paragraph.
- B. Read the code for the **Number of People Included**. Refer back to these rules when completing the next steps.
- C. Read through the paragraph a second time and circle each character mentioned in the narrative. Make sure you circle each character only once. Draw a line through the circle if later information in the narrative indicates that you would not count that description, for example, if parents is mentioned and both mom and dad are later mentioned in the description you would draw a line through the previously circled parents.

NUMBER OF PEOPLE INCLUDED

Circle each the first time each character is referenced in the scene. Circle each character once. A group of people is circled. When individuals in a group are specified somewhere in the narrative circle the individual and the group, unless all the individuals are specified. Then count only the individuals.

Response Code: P16F

The mom was putting the little girl to bed. The little girl looked up frowning when the mom started to sing and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad came up and sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I wanted the mom to stay upstairs with the dad and little girl, but maybe that would have been weird for this family. It looks like dad is the primary care provider for the child. That was different from my experience as a kid. My mom stayed home when I was young.

Include	Examples	Explanation
Specific descriptions	<p>The mom was putting the little girl to sleep when the little girl looked up frowning and asked if her dad could put her to bed instead.</p> <p>There were about a dozen kids watching.</p> <p>The parents were talking together. The mom looked annoyed.</p> <p>The parents were talking together. The mom looked annoyed, but the dad did not seem concerned.</p> <p>The woman said she was okay. Alice walked over to the kids sitting in the car to talk with them.</p>	<p>The respondent wrote about three people in total; the mom, little girl, dad</p> <p>A dozen is counted as a group and is counted once.</p> <p>A group (parents) is mentioned and part of the group (mom) is later specified. The individual is counted. Because each member of the group was not mentioned, the group is also counted.</p> <p>In this example parents would no longer be counted because both characters were identified later in the description.</p> <p>It is not clear if Alice is a third person or the woman. The order of the sentences suggests that it might be another person so in this case Alice is counted.</p>
Person referenced at another time or place	<p>The parents were talking about their earlier conversation with the teacher.</p> <p>The mom seemed mad when she found out the son was at a friend's instead of studying.</p>	<p>Parents is circled as it refers to a group. The teacher is counted as well even though it's a reference to an earlier conversation.</p> <p>The son is still counted even though he is not present in the scene. Friend is not included because this is a reference to the friend's house (a location not a character).</p>

	Do Not Include	Examples	Explanation
	Hypothetical characters	<p>The dad talked about hiring a mechanic.</p> <p>A teacher would be better at fixing the problem.</p> <p>The teacher told the parents that it would be good if their child had a chance to play with other children more often.</p>	<p>Mechanic would not be circled because this description does not refer to a specific person.</p> <p>“A teacher” does not count because it does not refer to a specific person. “The teacher” would count.</p> <p>Other children is not circled because the teacher is referring to a general group of children not a specific group of children.</p>
	Different description of the same person	<p>The mom was putting the little girl to bed. She picked up a book to read to her daughter.</p> <p>The baby-sitter or therapist was playing with the child.</p>	<p>The count includes mom and little girl, but not daughter as daughter refers to the little girl already counted.</p> <p>The baby-sitter or therapist refers to a single character.</p>

INSTRUCTIONS FOR CODING

STEP 2

NUMBER OF EMOTION LABELS:

- A. Read the code for the **Number of Emotion Labels**. Refer back to these rules when completing the next steps.
- B. Read through the paragraph again. Using a yellow highlighter, highlight each emotion label.

NUMBER OF EMOTION LABELS

Using a yellow highlighter, highlight the words/labels used to describe a characters' emotions or feelings. An emotion label or feeling can complete the sentence "he/she feels ____". In other words, "she feels joyful" or "she feels confused" makes sense while "she feels nice" or "she feels kissed" does not make sense. Include the word if a different tense works in the same sentence. Count each instance of an emotion, including repetitions of the same word. Do not include the emotional responses of the participants themselves.

Response Code: P16F

The mom was putting the little girl to bed. The little girl looked up frowning when the mom started to sing and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad came up and sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I wanted the mom to stay upstairs with the dad and little girl, but maybe that would have been weird for this family. It looks like dad is the primary care provider for the child. That was different from my experience as a kid. My mom stayed home when I was young.

Include	Examples	Explanation
<p>Words that complete the sentence "he/she feels ____".</p>	<p>The mom looks joyful.</p> <p>The girl seemed to be worrying.</p> <p>The teacher's response seemed belittling.</p> <p>The mom looked tired.</p> <p>The mom seemed to feel amenable to the dad's suggestion.</p> <p>Maybe she felt helpless? The dad said she'd be okay.</p> <p>The mom senses tension.</p> <p>His facial expression looked sad.</p> <p>He was under a lot of pressure.</p> <p>He tried to show interest.</p>	<p>"He/she feels joyful" makes sense. Joyful is included.</p> <p>While worrying does not fit in the sentence, worried does so worrying is included.</p> <p>In this case the emotion may refer to the listener. "He/she felt belittled" makes sense so belittling counts.</p> <p>Physical sensations like tired, pain that are used interchangeably with emotion words are included.</p> <p>The sentence "she/he feels____" can be extended. "She/he feels amenable to the idea" makes sense so amenable is included.</p> <p>Possible or hypothetical emotions are included, so helpless and okay are counted. In contrast to this, in "she said dad's outfit looked okay" okay would not be included.</p> <p>Tension is counted even though the tension is not assigned to a character in the narrative.</p> <p>This comment labels the facial expression and does not provide specific information regarding what the specific expression was (smile, frown, raised eye-brow).</p> <p>Metaphors can be used to describe a feeling. The sentence, "He/she feels pressure" makes sense, so this phrase would be included.</p> <p>A different tense can complete the sentence: "he/he feels interested." When in doubt, consider the word's opposite. Bored clearly fits the sentence so include interest.</p>

<p>Include preference words (“wanted”/“did not want”, “liked” and “disliked”)</p>	<p>The boy did not like being tickled.</p> <p>The little girl wanted to stay at the movies.</p>	<p>Like is included as a preference word. Preferences are often identified by observing emotional responses to an action or environmental stimuli.</p> <p>Wanted is a preference so it is included.</p>
<p>Phrases with the words: “feeling”, “felt”, “feel” or “emotion(s)” or “reactions”.</p>	<p>The son was showing lots of emotion.</p> <p>She seemed to be feeling that she would never succeed.</p> <p>He might have been feeling inadequate, or overlooked.</p>	<p>Even though this is not specific, the general word emotion does count.</p> <p>‘Feeling a lot of pressure’ is included because the participant is describing it as a feeling.</p> <p>The phrase “he might have been feeling” applies to both inadequate and overlooked, so two emotions would be highlighted in this sentence.</p>
<p>Do Not Include</p>		
<p>Participant’s own emotional responses</p>	<p>I was angry at the mom when I watched this clip.</p> <p>It was really encouraging for me to watch this family.</p>	<p>In both examples the emotions are not of the characters but are descriptions of the emotional responses of the participant themselves.</p>
<p>Comments about instincts</p>	<p>The mom’s maternal instinct kicked in.</p>	<p>As maternal instinct is a direct reference to an instinct it is not included.</p>
<p>The word “emotion(s)” when it precedes a list of emotions.</p>	<p>It seems like there were several emotions involved: joy, relief, and concern.</p>	<p>In this phrase, the word “emotion” refers to the list of words. The specific emotions listed would be highlighted.</p>
<p>Comments about what a character should have felt</p>	<p>The dad should have been more concerned about the son.</p> <p>The teacher was oblivious to the students’ confusion.</p>	<p>This is not a description of the dad’s emotional responses but rather a description of what the dad should be feeling.</p> <p>Being oblivious, clueless, or unaware are also examples of a situation in which an emotional response should be occurring but is not. Confusion is included because it’s a description regarding an emotional reaction of a character within the scene.</p>
<p>Evaluations or discussions about hypothetical people rather than characters in the scene.</p>	<p>It seems like teenagers often don’t really like hanging out with their parents. The parents need to try not to embarrass their son.</p>	<p>“Don’t really like” is not included because it’s part of an evaluation of hypothetical teenagers not teenagers in the scene. Embarrass is also not included because it is a description of what should/shouldn’t happen rather than a description of what did occur.</p>

For additional examples of **Emotion Labels**, see column one in the Emotions Chart on page 20. Compare and contrast them with examples from middle Emotion Indicators column and examples in the right Neither column.

WHEN IN DOUBT:

1. Can you use the word to complete the sentence “I feel...”
2. Recheck the code’s inclusion and exclusion rules.
3. Recheck the examples in code and examples in the chart.
4. Consider the word’s opposite. Is the opposite of the word an emotion word? For example, the opposite of interested might be bored. Bored clearly fits the sentence “I feel bored” so interested is included.
5. Say the phrase using different words. Are emotion words needed to rephrase the sentence and still express the same meaning? If so, include the word.
6. Look up the definition of the word. Does the definition include clear labels of emotions? Are the word’s synonyms emotion words? If so, include the word.
7. Make the best decision given the information above.

INSTRUCTIONS FOR CODING

STEP 3

NUMBER OF EMOTION INDICATORS:

- A. Read the code for the **Number of Emotion Indicators**. Refer back to these rules when completing the next steps.
- B. Read through the paragraph again. Using a pink highlighter, highlight each emotion indicator.

NUMBER OF EMOTION INDICATORS

Using a pink highlighter, highlight the number of references to a discrete movement or short response that is often interpreted as an emotional response. The emotion is not mentioned directly but it is implied by the description of the emotional behavior. This can include facial expressions, descriptions of body language, a specific action like a kiss or throwing an object across a room, or a description of a dimension of a behavior like speed or volume that suggests an emotional quality. If an emotion can be supplied that would complete the sentence “I think he/she is feeling _____ because he/she is _____” when the second half of the sentence is completed with the phrases in the narrative, then count the description of the behavior has an emotional indicator.

Response Code: P16F

The mom was putting the little girl to bed. The little girl looked up frowning when the mom started to sing and ask if her dad would put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said “of course” and called down to the dad. The dad came up and sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom’s disappointment when the little girl asked for her dad. I wanted the mom to stay upstairs with the dad and little girl, but maybe that would have been weird for this family. It looks like dad is the primary care provider for the child. That was different from my experience as a kid. My mom stayed home when I was young.

Include	Examples	Explanation
Words or phrases that fit in the sentence “I think he/she is feeling _____ because he/she is _____” and imply an emotional word for the first part of the sentence	She smiled and leaned closer to the child. The mom waved the dad’s kiss away. She screamed at the little boy.	Smiling is an action that indicates an emotional response and it can complete the sentence: “I think she is feeling affection because she smiled”. Waved and kiss both work in the sentence. “I think the mom was feeling annoyed because she waved the dad’s kiss away” and “I think the dad was feeling affection because was trying to kiss the mom.” Screamed can fit in the sentence: “I think she was feeling angry because she screamed at the little boy”.
Behaviors that are often interpreted as an emotional response or provide information about an emotion	The parents were arguing. He walked out of the room in a huffy way. The boy refused to play. The mom hurried to reach her son.	Arguing implies raised voices and dimensions to an interaction that are often associated with emotions. Huffy often implies a quality or dimension of the response movement, voice inflection or breath that may indicate an emotional response. The word refusing in this sentence describes an emotional response. It provides more information than “the boy said he did not want to play”. Hurried implies an emotional urgency and provides more information than the mom walked over to the boy.

Do Not Include	Examples	Explanation
Behaviors that do not in themselves indicate an emotion	<p>He walked out of the room.</p> <p>She reached over and grabbed the little girl.</p> <p>She requested a blanket.</p> <p>She asked to join the game.</p> <p>The two boys were playing with the ball.</p>	<p>Walking out of the room is not typically considered an emotional response in itself.</p> <p>Reaching over and grabbing the little girl may accompany emotional indicators but this description itself does not describe emotional indicators on it's own.</p> <p>This sentence reads more like a descriptions of the words someone spoke rather than a description of an emotional response.</p> <p>Likewise, asking to join the game is not a description of an emotional response.</p> <p>This sentence is more of a description of two boys tossing or kicking a ball back and forth. It could be a really fun game, a boring game, or an activity that they were doing in gym class. By contrast, playfully tossing the ball would be coded an an indicator.</p>
Phrases in which an emotion is mentioned directly - these should be counted as labels	<p>The dad's body language made him appear pleased.</p> <p>His facial expression indicated that he was sad.</p> <p>Her behavior seems stressed.</p>	<p>This response is accounted for as an emotion label because the part providing information is the word pleased. Body language is not described specifically. If it read, "he smiled and opened his arms in welcome" it would be coded as an indicator.</p> <p>The descriptive part of this phrase is the emotion label, so it is coded as a label. Specific examples of facial expressions were not included. If the phrase read "his eyes filled with tears" it would be coded as an indicator.</p> <p>Again, stressed is the descriptor and it is a label.</p>
Do not include events that may set the occasion for an emotion. These are coded as relations	<p>He fell and skinned his knee.</p> <p>The student failed her test.</p>	<p>Falling and skinning one's knee is often accompanied by an emotional response. It is not a description of an emotion reaction.</p> <p>This is not a description of an emotional response itself. It is not clear if the narration is referencing any emotion as a result of the event and should not be counted as an indicator of an emotion.</p>

For additional examples of **Emotion Indicators**, see column one in the Emotions Chart on page 20. Compare and contrast them with examples in the left Emotion Labels column and in the right Neither column.

WHEN IN DOUBT:

1. Recheck the code's inclusion and exclusion rules.
2. Recheck the examples in code and examples in the chart.
3. Is it a specific movement or short response or does it label a group of responses? Specific movements or short responses should be coded as indicators and highlighted in pink while labels of a group of responses should be coded as a label highlighted in blue.
4. Does the word on its own suggest a good or bad emotion or could it go either way? If it can go either way, additional context is needed and it is not an emotional indicator on its own. Do not highlight it.
5. Complete the second half of the sentence using the phrase in question and fill in the first blank with an emotion. "I think he/she is feeling _____ because he/she is _____". Does it work? If so, code it as an indicator.
6. Does it indicate an emotional response or set the occasion for an emotion response? If it sets the occasion, do not code it as an indicator.
7. Make the best decision given the information above.

INSTRUCTIONS FOR CODING

STEP 4

- A. Read the code for the **Number of Emotion Relations**. Refer back to these rules when completing the next steps.
- B. Refer back to the emotion labels and indicators previously highlighted. Reread the paragraph. If the narrative relates the emotion label or indicator to an event or another character's behavior, make a green check next to the emotion label or indicator.

NUMBER OF EMOTION RELATIONS

Make a green checkmark next to the highlighted text if the narrative relates it to a behavior of another person or an event. The relationship can be explicitly stated or implied. Look at each emotion reference individually. A relation exists when you can complete the sentence “he/she feels (emotion) because (event or another character’s response)”.

Response Code: P16F

The mom was putting the little girl to bed. The little girl looked up **frowning** when the mom started to sing and ask if her dad could put her to bed instead. For a split second the mom looked **disappointed**, but then she **smiled** at her daughter and said “of course” and called down to the dad. The dad came up and sat next to the little girl. The little girl began to grow **happier** and more **relaxed** as he sang. The mom looked **lonely** when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked **hopeful**. I was sad when I saw the mom’s **disappointment** when the little girl asked for her dad. I wanted the mom to stay upstairs with the dad and little girl, but maybe that would have been **weird** for this family. It looks like dad is the primary care provider for the child. That was different from my experience as a kid. My mom stayed home when I was young.

Include	Examples	Explanation
<p>References linking emotions to an event or another character’s responses (she felt x because y happened)</p>	<p>The mom looked scared when the little boy screamed.</p> <p>She was clearly happy that the other little girl was going to stay for dinner. She was also a little nervous.</p> <p>The teacher handed the girl her graded test. The girl looked disappointed and concerned.</p> <p>The little boy seemed to be worried that his mom was not coming and that he would need to walk home.</p> <p>The dad seemed concerned about the way he son was feeling.</p> <p>The teacher is excited and praises the little girl for solving the math problem.</p>	<p>The mom looking scared is linked to the boy screaming, so it is included. No information is provided regarding what set the occasion for the little boy screaming so screaming is not included.</p> <p>This description links happy and nervous to the other little girl staying for dinner. The relationships do not need to be in the same sentence.</p> <p>The relationship between the emotions (disappointed and concerned) and the test is implied. Both emotions are checked.</p> <p>Worried is linked to two events, his mom not coming back and his need to walk home so it is checked.</p> <p>The dad’s concern is linked in the narrative to the behavior of the son (the son’s emotional response).</p> <p>Excited and praise are tied to the girl solving the math problem so they are included.</p>

<p>Emotions that fit with an earlier reference in the narrative to an event or behavior that may have set the occasion for the emotion.</p>	<p>The parents were arguing about the costs of the private school. The mom grew more and more frustrated. The dad seemed annoyed and frowned. By the end, both seemed disappointed and angry.</p> <p>The man's friend gave the man's son a tour of the facility. The boy seemed very impressed by the man's friend. The man seemed a little annoyed and closed the door roughly on their way out.</p>	<p>The argument sets the occasion for several emotional responses: frustrated, annoyed, frowned, disappointed, and angry. The cost of private school is not a relation but the content of the argument. It is a description of the arguing response.</p> <p>There is an implication in the narrative that the tour sets the occasion for the little boy to be impressed by the man's friend. It is also implied that the man's friend giving the son a tour and the boy's response to it sets the occasion for the dad's annoyance and the dad's response of closing the door roughly.</p>
<p>Do Not Include</p>	<p>Examples</p>	<p>Explanation</p>
<p>Closely related sentences that do not suggest or imply a dependent relation.</p>	<p>The little girl is at the horse barn. The little girl is afraid of horses.</p> <p>The mom was happy when she walked in the door.</p>	<p>This reads like a description of a setting and a description of a characteristic of a character.</p> <p>Walking in the room did not set the occasion for being happy, it is included as a description of the happy response. It did not come before or after the happiness.</p>
<p>Descriptions of a person</p>	<p>The dad seemed like a gloomy person.</p> <p>The teacher seemed to lack basic classroom management but seemed amenable to learning from the other teacher.</p>	<p>This is a description of the character and not a connection between the emotion and the occurrences in the scene.</p> <p>This phrase reads as an evaluation and description of the teacher's competence rather than a sequence of related events.</p>
<p>Description of an emotional response</p>	<p>The girl brags about her new bike.</p> <p>The mom calmly listened to the conversation.</p>	<p>"About the new bike" is a description of the content of the bragging.</p> <p>Calmly listening is a description of the way the mom did something.</p>

<p>Participant's reactions</p>	<p>Watching the mom and daughter play together made me happy.</p> <p>I got angry when the dad yelled at his son.</p>	<p>Happy refers to the participant's own emotional response so the relation between happy and the play is not checked.</p> <p>Angry refers to the participant's response and is not counted. The dad yelling at the son would be counted as an emotion indicator).</p>
<p>Descriptions of what should have happened or should be felt.</p>	<p>The dad should have done something to ease the child's fear.</p> <p>The teacher doesn't seem aware of the child's confusion and frustration.</p>	<p>This is a description from the participant's reactions and is not a description of what happened in the scene. The child's fear is coded as an emotion label. It is referencing the child's reaction in the scene.</p> <p>Similarly, this is a description of what didn't happen, not of something that did happen. It is a reflection of the participant's own evaluation of what should have occurred in the scene. Aware is not coded as an emotion because it's a reference to what did not happen. Confusion and frustration are coded as labels as they are both descriptions of the child's emotional responses in the scene. None of these emotions would be checked.</p>

WHEN IN DOUBT:

1. Can you complete the sentence “the character feels X because Y” based on the information in the narrative (Y is an event or another character’s response)? If so, code as a relation.
2. Recheck the code’s inclusion and exclusion rules.
3. Recheck the examples in code and examples in the chart.
4. Is it a response or does it set the occasion for a response? A relation will set the occasion for a response. A non-relation may provide information about the response’s content or another dimension of the behavior.
5. Look at the response on its own without reference to how the same emotion was coded earlier.
6. Make the best decision given the information above.

Examples		
Emotion Labels	Emotion Indicators	Neither
Affection	Argued	Adaptable
Annoyance	Bit his lip	Agreed
Belittling	Blushed	Best ice cream she'd had
Caring	Brag	Good idea
Coerced	Brushed away	He listened to her
Compassion	Creased forehead	He watched her closely
Concern	Eyes glistened	Insisted
Confused	Eyes sparkled	It takes effort
Defensive	Forced a smile	It was good news
Disappointed	Gapped	Know
Disbelief	Gawked	Leaned over
Disgust	Glowed	Looked over
Disliked	Glowered	Punished
Dread	Grinned	Reinforcement
Encouraged	He lifted an eyebrow	Requested
Exasperation	Her expression	Reward
Exuberant	hardened	Sat down
Facial expression showed joy	Insisted	She could not swing high enough
Feeling pressure	Jaw clenched	She followed her friends
Fine	Jaw dropped	She said is outfit looked fine.
Having a rough time	Kissed	Spoke loudly
Humoring	Laughed	Successful
Hysteria	Lip trembled	The boy and mom were playing at the park
I felt oblivious	Nostrils flared	The teacher was oblivious
In-sync	Pouted	Tried hard
Irritation	Praised	Turned around
Isolation	Pushed away	Waiting
Joy	Refused	Walked out the door
Liked	Sarcastic	Walked quickly
Melancholy	Scowled	
Optimism	Screamed	
Panic	Shoulder sagged	
Pride	Smiled	
Scorn	Sneered	
She felt a heavy weight	The corners of his mouth turned up	
She said she felt fine	Wincing	
Shock	Yelled	
Skeptical		
Sympathy		
Taunting		
Tired		
Understanding		
Unfulfilled		
Watchful		

REFLECTIONS

INSTRUCTIONS FOR CODING

STEP 1

PARTICIPANT'S OWN EMOTIONAL RESPONSES

1. Read the code for the **Participant's Own Emotional Responses**. Refer back to these rules when completing the next steps.
2. Reread the paragraph. Highlight descriptions of the participant's emotional responses. Include both labels and indicators with a blue highlighter.

PARTICIPANT'S OWN EMOTIONAL RESPONSES

Using a blue highlighter, highlight references participants makes to their own emotions or feelings. Include both labels and indicators.

Response Code: P16

The mom was putting the little girl to sleep when the little girl looked up frowning and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad then came up and said that the mom had rushed home to be able to spend time with the little girl. The dad sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I feel like the daughter and father have a closer relationship. I felt bad for the mom. I think the mom was still sad when she left because her facial expression looked really similar to what mine looks like when I'm sad but trying to appear happy.

Include	Examples	Explanation
Emotion labels and indicators	I felt myself smiling when watching the mom play with the little girl.	Smiling is an indicator and is counted because it is a description of the participant's smile.
	I was relieved and pleased the teacher responded to the boy.	In this case, relieved and pleased apply to the participant's response. There are two different emotion labels.
	I feel like the parents' relationship was based on respect and trust.	The word "feel" means this phrase is coded as an emotion. If the words "feel like" were replaced with "think that" it would not be highlighted.
	I did not have much of a reaction.	The word "reaction" is often used to describe an emotional response. Negatives such as "did not" are still included.
	I found myself sympathizing with both the baby sitter and the mom.	"He/she feels sympathetic" makes sense so sympathizing is highlighted.
	I don't understand why the teacher responded the way she did.	Understanding is one of the examples in the list of emotion labels. In this example it refers to the participant so it is highlighted.
	I'm not sure how I feel about the interaction between the boy and the baby-sitter.	The word "feel" indicates that the narrative is referencing a feeling and in this case it is the participant's feeling, so it is highlighted.
I like that the parents started playing with their son in the backyard.	Words such as "like", "dislike", "want", "did not want" can indicate a feeling and are highlighted.	

	Do Not Include	Examples	Explanation
	Evaluations	<p>The mom’s responses to the little girl were so sweet.</p> <p>The mom should have stayed with the boy because the boy was scared.</p> <p>I thought the dad should’ve responded to his daughter sooner.</p> <p>I can’t quite tell what the teacher wants to have happen after she leaves the classroom.</p>	<p>This is not a description of an emotional response.</p> <p>A statement about what the mom should do is an evaluation. The emotion “scared” applies to the little boy so it is highlighted in yellow.</p> <p>Words like think and thought indicate an evaluation and should not be highlighted.</p> <p>Can’t quite tell refers to an evaluation, or in this case trouble evaluating. It is not highlighted.</p>
	References to hypothetical emotions or emotions that sometimes occur but are not occurring in the moment	<p>Their facial expression matched what mine looks like when I do not agree with someone but I am humoring them to avoid an argument.</p> <p>I am often annoyed by watching interactions like this, but I felt more concern than anything else.</p>	<p>In this example, humoring refers to a hypothetical event. The narrative is not describing a current emotion of feeling of the participant.</p> <p>In this example, annoyed refers to an emotion that sometimes occurs in similar situations. It is not currently occurring so it is not included. On the other hand, concern is described as a current emotion and it refers to the participant so it is highlighted.</p>

INSTRUCTIONS FOR CODING

STEP 2

SIMILARITIES AND DIFFERENCES TO PERSONAL EXPERIENCE

1. Read the code for **Similarities and Differences to Personal Experience**. Refer back to these rules when completing the next steps.
2. Reread the paragraph. Underline phrases that meet the inclusion criteria with a purple marker.

SIMILARITIES AND DIFFERENCES TO PERSONAL EXPERIENCE

Using a purple marker or pen, underline references to a similarity or difference the participant identifies between their experiences or behaviors and the characters' experiences or behaviors.

Response Code: P16

The mom was putting the little girl to sleep when the little girl looked up frowning and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad then came up and said that the mom had rushed home to be able to spend time with the little girl. The dad sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I feel like the daughter and father have a closer relationship. I felt bad for the mom. I think the mom was still sad when she left because her facial expression looked really similar to what mine looks like when I'm sad but trying to appear happy.

Include	Examples	Explanation
Include similarities or differences in specific behaviors or responses.	<u>The dad's facial expression matches what mine looks like when I think something is funny but I'm trying not to laugh.</u>	The narrative compares the character's facial expression and the participant's in a similar situation so it this phrase is underlined.
Include similarities or differences in more general preferences, experiences, culture, ethnicity, age, generation, religion, political beliefs, education, life experience, socioeconomic status, health, and ability/disability.	<u>I was pretty sympathetic to the child as I didn't like to clean my room as a child either.</u>	The narrative links the participant's dislike of cleaning their room and the child's dislike of it.
	<u>The mom is a single mom. I was raised by a single mom.</u>	This phrase references a similarity in family structure between participant and family.
	<u>The family seemed to be pretty conservative which I had trouble relating to.</u>	This phrase references a difference between the family and the participant.
Include statements participant makes about their own role if there is someone in the narrative who plays the same role.	<u>I am not a mom.</u>	This is a reference to a difference in roles.
	<u>I am also a mom.</u>	This is a reference to a similarity in roles.
Do Not Include	Examples	Explanation
Do not include descriptive statements that don't reference a similarity or difference.	The family appears to be a middle-class family. This family seems close.	Both of these statements are not included because there is no comparison to the participant.

INSTRUCTIONS FOR CODING

STEP 3

IMPACT ON CLINICAL EVALUATION

1. Read the code for **Impact on Clinical Evaluation**. Refer back to these rules when completing the next steps.
2. Reread the paragraph. Underline any phrases that meets the inclusion criteria with an orange marker.

REFLECTION ON CLINICAL EVALUATION

Using an orange marker or pen, underline reflections on how similarities and differences contribute toward and limit the interpretation of the characters' behavior. This includes interpretations of a character's emotional responses by comparing the character's behavior and one's own behavior. It also includes observations regarding the limitations in interpreting behavior.

Response Code: P16

The mom was putting the little girl to sleep when the little girl looked up frowning and ask if her dad could put her to bed instead. For a split second the mom looked disappointed, but then she smiled at her daughter and said "of course" and called down to the dad. The dad then came up and said that the mom had rushed home to be able to spend time with the little girl. The dad sat next to the little girl. The little girl began to grow happier and more relaxed as he sang. The mom looked lonely when she watched the little girl interacting with her dad. She watched them for a few minutes and then went back downstairs. The dad and the mom talked about the mom possibly getting an assistant at work so the mom could come home more often. The mom looked hopeful. I was sad when I saw the mom's disappointment when the little girl asked for her dad. I feel like the daughter and father have a closer relationship. I felt bad for the mom. I think the mom was still sad when she left because her facial expression looked really similar to what mine looks like when I'm sad but trying to appear happy.

Include	Examples	Explanation
<p>Interpretations of a character's behavior (including emotional responses) by comparing the character's behavior and one's own behavior.</p>	<p>I found I <u>sympathized</u> with the dad because his facial expression matches what mine looks like when I am hurt but trying not to show it.</p> <p>I am guessing the teacher feels <u>relieved</u> because she <u>sighed</u> and <u>smiled</u>, which is what I do when I feel <u>relieved</u>.</p>	<p>This phrase implies that the participant is interpreting the dad's behavior as an indicator that the dad is feeling hurt. The narrative identifies a possible connection between similar overt behaviors and suggests this might indicate a similarity in the corresponding covert behaviors.</p> <p>This phrase also makes an observation about a possible covert response by drawing a connection between similar external responses.</p>
<p>References to limitations (not understanding a character's perspective, identification of assumptions, or possible misunderstandings due to differences in social community)</p>	<p>I don't <u>understand</u> what about the conversation is making parents so <u>uncomfortable</u>, but clearly they and their son aren't communicating well.</p> <p>I <u>feel like</u> the mom doesn't <u>care</u> about the child's safety, but it could be that there is a <u>cultural</u> difference and the mom <u>cares</u> more about the child being independent and <u>confident</u>.</p>	<p>This is an example of not understanding a character's perspective or the environmental variables that may be impacting the character's behavior, so it is underlined.</p> <p>Here the narrative references that a difference in culture could lead to a misunderstanding or misinterpretation of a character's response.</p>

	Do Not Include	Examples	Explanation
	<p>Judgments or should statements</p>	<p>As someone who has also taught, I thought the teacher should have been more flexible with the students' deadlines given the confusion about the assignment.</p> <p>I thought the parents should have been more understanding.</p>	<p>This is not an attempt to understand what variables are impacting the character's behavior but rather an evaluation of what they should have done differently.</p> <p>This is not included because it is a should statement.</p>
	<p>Comments about sympathizing with a character without references to both the character's response and the participant's.</p>	<p>I was pretty sympathetic to the child as I didn't like to clean my room as a child either.</p> <p>I sympathize with the teacher, but I think when the child started to try to solve the math problem, the teacher should have responded.</p>	<p>This statement is not underlined because it does not reference a specific behavior of the child, it only includes the participant's.</p> <p>This statement does not reference what the teacher did, only what the teacher should have done, so it is not underlined.</p>

APPENDIX B
PRE AND POST-WORKSHOP ASSESSMENTS

Pre-Workshop Questionnaire

Welcome!

University of North Texas Institutional Review Board
Informed Consent Notice

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: Cultivating Collaboration: A Pilot Investigation of Narratives of Family Interactions

Purpose of the Study: You are being asked to participate in a research study that will study the different ways people talk about common family interactions. We have designed a training program, based on previous research, to teach people supportive and empathetic ways to respond to other people.

Study Procedure: If you decide to take part in this study, you will be asked to watch a series of short video clips from popular TV shows and movies. During the initial survey, you will be asked to briefly write about your reaction to the video clip. During training sessions, participants will be asked to answer particular questions about video clips, and/or read short written excerpts about compassion, empathy, or efforts directed toward helping others.

The video clips show situations that come up in different family interactions. For example, one clip shows a scene taken from the movie "Life As We Know It." Here, a new mom has been unsuccessful at making homemade baby food her little girl will eat. After numerous attempts, the little girl finally takes a bite of the baby food and they both smile. Another video clip is taken from the show "Martian Child" in which the adoptive father's sister is giving him advice about how he should parent his new child.

The different sessions are estimated to take 15 minutes to 45 minutes to complete.

Foreseeable Risks: Potential risks involved in this study include possible anxiety and/or discomfort while observing the video clips and thinking about how you might respond. The scenes shown were selected to reduce unnecessary discomfort. The clips are G-rated; there is no profanity, nudity, or cursing.

Your participation in this study is completely voluntary and you can withdraw at any time. You are free to skip any question that you choose or end the survey early. Your participation in this online survey involves risks to confidentiality similar to a person's everyday use of the Internet.

Benefits to the Subjects or Others: The questions, readings, and opportunities to practice responding within the confidential online sessions may increase your ability to relate to others. This could potentially change the way other people respond to your empathetic responses and increase your ability to effectively work with people experiencing different challenges.

Compensation for Participants: Participants will have the option to earn a \$5 credit for Amazon.com for each session and a \$10 bonus when the final session is completed. When the participant finishes the study, they will be sent an Amazon.com gift card via email with the total dollar amount earned. If a participant opts to end the study early, they will be sent the Amazon.com gift card with a total according to the number of sessions they completed.

At the end of the initial survey, you will have the option to participate in additional phases, if desired. Additionally, you have the option to receive an Amazon.com gift card for your time by providing your email address. If you choose to provide your email address, your survey responses may no longer be anonymous to the researcher. However, no names or identifying information would be included in any publications or presentations based on these data. Also, no identifiable information will be made available to anyone besides the primary researcher.

Procedures for Maintaining Confidentiality of Research Records: Written records will be coded anonymously and kept in a locked filing cabinet for three years. After three years, the written records will be destroyed via deletion or shredded, and no backup copy will exist. The confidentiality of all your information will be maintained in any publications or presentations regarding this study. That said, as with any online related activity, the risk of a breach of confidentiality is always possible.

Questions about the Study: If you have any questions about the study, you may contact Regan Garden at regangarden@my.unt.edu or Dr. Shahla Ala'i-Rosales, BCBA-D at srosales@unt.edu or (940) 565-2274.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-4643 with any questions regarding the rights of research subjects.

Research Participants' Rights:

Your participation in the survey confirms that you have read all of the above and that you agree to all of the following:

- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You understand you may print a copy of this form for your records.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the "Agree" button indicates that

- You have read the above information.
- You voluntarily agree to participate.
- You are 18 years of age or older.

* Please select your choice below.

- I agree
- I disagree

Pre-Workshop Questionnaire

This study has three components: a pre-workshop questionnaire, a workshop, and a post-workshop questionnaire.

To begin the pre-workshop questionnaire, please click next.

Pre-Workshop Questionnaire

Section I: Demographic questions

General Demographic Questions.

What is your age?

- 18-20
- 21-29
- 30-39
- 40-49
- 50-59
- 60 or older
- Prefer not to answer

What is your gender?

What is your ethnicity and cultural background?

How much total combined money did all members of your HOUSEHOLD earn last year?

- \$0 to \$9,999
- \$10,000 to \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,999
- \$150,000 to \$174,999
- \$175,000 to \$199,999
- \$200,000 and up
- Prefer not to answer

How many years of experience do you have doing applied work within the field of behavior analysis?

- I do not have experience working in this field
- less than 3 years
- 3 - 5 years
- 6 - 10 years
- 11 - 20 years
- more than 20 years of experience

Which of the following categories describes your training in ABA? Check all that apply.

- Professional development and on-the-job training in behavior analysis
- Some college courses in behavior analysis
- Bachelor's degree in behavior analysis
- Bachelor's degree in a related field with coursework in behavior analysis
- Master's degree in behavior analysis
- Master's degree in a related field with coursework in behavior analysis
- Doctorate in behavior analysis
- Doctorate in a related field with coursework in behavior analysis

Pre-Workshop Questionnaire

Please watch the short clip from the NBC TV show *Parenthood* and answer the question below. When you are finished continue on to the next clip. You will have 15 minutes to complete each response.



Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.

Pre-Workshop Questionnaire



Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.

Pre-Workshop Questionnaire

End of Survey Session One

thank you!

Thank you so much for your time and help. Please help your self to some lunch! We will begin the training workshop shortly.

Post-Workshop Questionnaire

Welcome back!

In the upcoming section, we would like you to respond again to short clips. The first clip is one you saw during the first questionnaire of the study. We would like you to watch it again and respond now that you have completed the training. We are interested in looking at how your responses differ before the training and after the training.

To begin, please click the button below.

Post-Workshop Questionnaire

Please watch the short clip from the NBC TV show Parenthood and answer the question below. When you are finished continue to the next clip. You will have 15 minutes to complete each response.



Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.

Post-Workshop Questionnaire



Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social, and emotional responses. Describe your own reactions to the behaviors observed.

Post-Workshop Questionnaire

Tells us a little about your professional values. What types of qualities do you want to demonstrate in your work as a behavior analyst?

Post-Workshop Questionnaire

Have you seen NBC's *Parenthood*?

- No, I've never seen this show.
- I've seen few episodes here and there.
- I've seen a good chunk of this series.
- Other (please specify)

Do you have any observations or comments you'd like to share regarding this study or topic?

If you were in need of a behavior analyst for a family member (child, cousin, parent, sibling) would you feel the ability to observe emotions and understand interlocking contingencies between people within a family would be important skill for your family member in need of treatment? Why or why not?

Post-Workshop Questionnaire

The End

You have completed the study! Thank you for your help with this research project. We appreciate your time and your responses a great deal.

A handwritten message in cursive script that reads "thank you!". The text is written in a light gray color and is centered on the page.

Please see the researcher before you leave.

APPENDIX C
TRAINING WORKSHOP SLIDES AND HANDOUTS



Cultivating Collaboration

A workshop for behavior analysts presented by Regan Garden in partial fulfillment of the requirement for master's degree in behavior analysis

May 18th, 2016
University of North Texas



The Goal:

To increase the descriptiveness of observations of family interactions with a focus on describing contingencies and emotional responses.

Three Topics:

- Concept of a contingency
- Observing emotional responses
- Reflective observing



Part I. Concept of a Contingency

Contingency

A contingency is a dependent relation in a temporal sequence. It can be helpful to think of a contingency as an if/then statement (Mechner, 2008).

If \longrightarrow Then

A: B \longrightarrow C or $\left[\begin{array}{l} A \\ B \end{array} \right] \longrightarrow C$

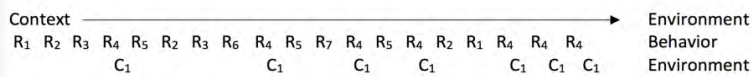
- ❖ "If" refers to "if and only if"
- ❖ "Then" means "then and not otherwise"
- ❖ It is not possible to identify a contingency by observing a single behavior
- ❖ Initial observations result in tentative leads regarding where socially significant contingencies might exist

Contingency

When observing a behavioral flow, we need to pay careful attention to:

- 1) Order of behavior
- 2) Moment to moment changes

Behavior Stream



Contingency: Consequence 1 follows Response 4 and only Response 4

(Glenn, 2008)



Just as a skilled painter learns to see multiple colors within a piece of fruit, a behavior analyst learns to observe more and more subtle changes in behavior, including emotional behavior. They are then more likely to advance socially important outcomes.



Part II: Observing Emotional Responses



Emotional Responses

Emotions and emotional responses can and should be analyzed by behavior analysts (Goldiamond, 1975; Layng, 2006; Skinner, 1945).

Radical behaviorism approaches emotions in these ways:

- A verbal community teaches someone to label states or feelings, even when the community cannot observe what the individual is labeling (Skinner, 1945).
- A verbal community teaches an individual the form and situation that are appropriate for different types of emotional responses (Skinner, 1957).
- Emotional responses may be productively approached by looking at what surrounds the response in the environment (Biglan, 1991; Calkin, 2002; Dugher & Hackbert, 2000; Moore, 1980; Skinner, 1945/1957/1974; Tourinho, 2011).
- The labeling and discrimination of emotional responses is an interactive process.

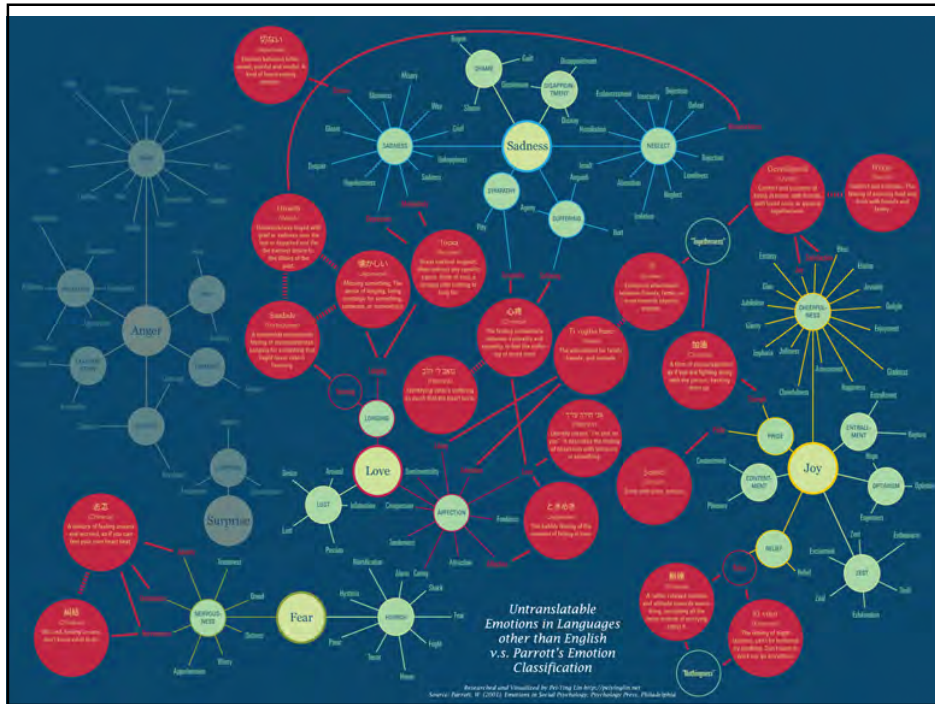


- Theoretical conceptualization?
- How does this apply to emotional labels and behavioral practice?



The label of the emotional response is taught by the verbal community.

Anxiety		
You have a test the next day.	Heart rate is elevated and you do not want to go to class.	Friends agree and talk about how hard the class is.
Thrill		
You ride a roller coaster.	Heart rate is elevated and you want to ride again.	Your friends agree it was awesome and get in line.



Verbal communities have additional words to describe specific combinations of emotions

(Meftah, Thanh, and Amar, 2011)

Primary Emotion	Combined Emotion	Primary Emotion
trust	curiosity	surprise
joy	love	trust
disgust	contempt	anger
anticipation	anxiety	fear
joy	pride	anger
anticipation	optimism	joy
disgust	cynicism	anticipation

Emotions are important in themselves.



They can also help highlight areas we should observe in more detail.

(Goldiamond, 1975; Layng, 2006; Wolf, 1978)

- Reveal what types of contingencies may be occurring (reinforcement, punishment)
- Reveal where and when we should observe more closely
- Reveal how reinforcers and punishers overlap or fail to overlap among family members



"As long as we conceive of the problem of emotion as one of inner states, we are not likely to advance a practical technology. It does not help in the solution of a practical problem to be told that some feature of a man's behavior is due to frustration or anxiety; we also need to be told how the frustration or anxiety has been induced and how it may be altered." - Skinner (1974)



Feelings and Emotional Responses

- Feeling – private event (internal sensation)
- Emotional response – behavior that can be observed by others (facial expressions, body language, word selection)
 - Indices of the private feeling
 - Indices of the environmental contingencies

Emotional responses are more than topography

An emotional response needs a context and consequence before it can be identified and understood.



Observing the antecedent and consequence is important when observing emotional responses.

(Dougher & Hackbert, 2000; Moore, 1980; Skinner, 1974; Tourinho et al. 2011).

A	B	C
Parent tickles a child		Tickling game continues
Girl whispers to a friend about another girl's outfit	Laughing	The friend spends more time with the girl and never talks to the other girl
Someone said something awkward in class and no one knows how to respond		Other people laugh and tension in the room dissipates a little. Conflict is avoided.

There are different 'display rules' (Malatesta and Haviland, 1982; Saarni, 1979).

A	B	C
Receive news that a sibling was diagnosed with terminal cancer	Brow furrowed	People provide space and distance
	Slam fists	People stop and listen
	Crying	People ask as though nothing has changed
	Trembling	People ask concerned questions
	Body goes quiet and still	People offer help or assistance
	Posed and calm	

Different types of emotional responses can be captured based on what type of consequence is helpful or preferred by the individual.

A	B	C
Receive news that a sibling was diagnosed with terminal cancer	Brow furrowed	People provide space and distance
	Slam fists	People stop and listen
	Crying	People ask as though nothing has changed
	Trembling	People ask concerned questions
	Body goes quiet and still	People offer help or assistance
	Posed and calm	

Some thoughts on “manipulation”

If we cannot see a reason for an emotional response, we sometimes assume that the person’s emotional response is only under the control of the consequence.



- For example, a parent may say their child just wants to stay up late when the child says they are scared to go to bed.
- It may be there is a stimulus in the room that child is responding to such as a shadow in the corner or a noise from the wind, or that the child’s big brother is telling ghost stories that are not quite age appropriate.
- The child may need to learn to tolerate the shadow and go to bed anyway, but we might approach it differently if we considered the stimulus potentiating staying away from the room as a reinforcer.

When we say someone is manipulating another person, it may be an indicator that we are missing some important antecedent variables.



Part III: Reflective Observing

"It is only when a person's private world becomes important to others that it is made important to him. It enters into the control of behavior called knowing. A person who has been 'made aware of himself' by the questions he has been asked is in a better position to predict and control his own behavior."
- Skinner (1974)

Asking ourselves questions can help us respond more effectively to a family and increase our skill as clinicians

(Stith-Williams & Hayes, 2007; Roll-Pettersson, Ala'i-Rosales, Keenan & Dillenburger, 2010; Rumohr, 2013; Urdang, 2010).



Training reflection



Hospital chaplaincy training:

- Interacting with a person or family in crisis in a way that provides comfort and strength is a difficult skill.
- A verbatim is one of the teaching strategies within hospital chaplaincy training programs to train these skills. Within a verbatim a student writes out a description of their interaction with a patient or family and answers reflection questions about specific areas of the interaction.





Reflective Questions

Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social and emotional responses.

- Who is in this scene?
- What emotional responses do I see and where in the behavior stream do I see them?
- When do the shifts or changes in the emotional responses occur?
- What occurs before and after these changes or shifts?
- When are the different family members showing similar emotional responses and when are they showing different ones?



Reflective Questions

Describe your own reactions to the behaviors observed.

- What words do I use when I describe the interaction?
- Are there things that I pull away from or move toward during this clip?
- Do the family members move toward or move away from the same things or different things?

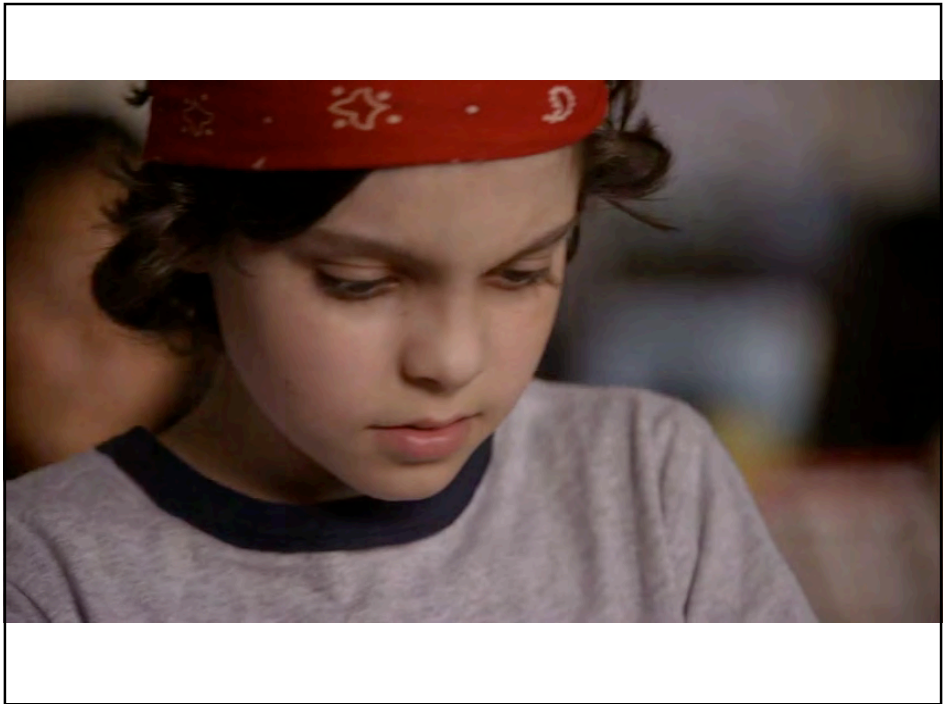
Reflective Questions

Describe your own reactions to the behaviors observed.

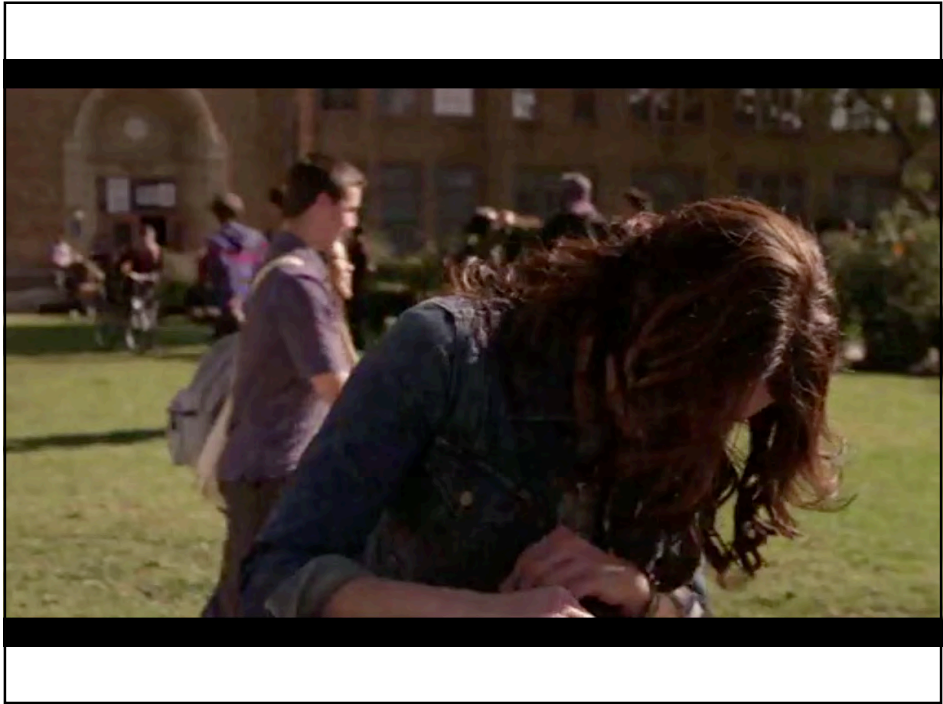
- Have I ever responded like they do? What was happening at the time? What set the occasion for my response?
- In what ways are my identities, experiences, reinforcers/punishers similar to the family members' and in what ways are they different?
 - Consider several dimensions: culture, ethnicity, age, generation, religion, political beliefs, education, life experience, age, socioeconomic status, health and ability/disability.

Practice and Discussion









Cultivating Collaboration



I. The Concept of a Contingency

II. Observing Emotional Responses

III. Reflective Observing

Practice & Discussion

I. Complete a descriptive narrative of the sequence of behaviors and interactions between these characters. Behaviors can include, but are not limited to, verbal, social and emotional responses.

- Who is in this scene?
- What emotional responses do I see and where in the behavior stream do I see them?
- When do the shifts or changes in the emotional responses occur?
- What occurs before and after these changes or shifts?
- When are the different family members showing similar emotional responses and when are they showing different ones?

II. Describe your own reactions to the behaviors observed.

- What words do I use when I describe the interaction?
- Are there things that I pull away from or move toward during this clip?
- Do the family members move toward or move away from the same things or different things?
- Have I ever responded like they do? What was happening at the time? What set the occasion for my response?
- In what ways are my identities, experiences, reinforcers/punishers similar to the family members' and in what ways are they different?
 - Consider several dimensions: culture, ethnicity, age, generation, religion, political beliefs, education, life experience, age, socioeconomic status, health and ability/disability.

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