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A behavior analytic interpretation of alexithymia

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ABSTRACT

Alexithymia is a term used to describe individuals who seem unable to experience or at least describe emotions. This paper offers a theoretical interpretation of alexithymia from a radical behaviorist perspective. While there have been attempts to explain the etiology of alexithymia, the current analysis is unique in that it provides direct treatment implications. The pragmatic analysis described focuses on the verbal behavior of individuals rather than looking "inside" for explanations. This is supported by a review of experimental research that has failed to find consistencies among alexithymic individuals' physiological responding. Descriptions of the various discriminative and consequential stimulus conditions involved in the complex learning histories of individuals that could result in an alexithymic presentation are provided. This analysis helps situate the alexithymia construct in a broader behavior analytic understanding of emotions. Finally this paper outlines implications for assessment and treatment, which involve influencing discriminative and consequential interpersonal stimulus conditions to shape verbal behavior about emotions.

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1. Introduction

"Alexithymia" literally means "without words for emotions". Clinicians began using this term for individuals who presented to therapy with an inability to experience or at least describe emotions (Lesser, 1981; Sifneos, 1996; Taylor, 1984). Their stories are monotonous, stilted or devoid of richness. Rather than speaking about feelings, they talk about the logic of why they acted in certain ways. People with alexithymia[2] often have problems maintaining relationships because those around them cannot understand them or know what they want. It is common that someone exhibiting alexithymia who presents for therapy reports a lack of a sense of self. While they will not talk about feeling down or depressed, people with alexithymia will frequently complain about physical health. These individuals often present with an impoverishment of fantasy life, a constriction of emotional functioning, difficulty in interpersonal relationships, inability to find words for emotional experience, and endless description of situational details or symptoms rather than feelings.

Importantly, alexithymia is not a discrete syndrome or disorder. The phrasing "people with alexithymia" or "someone who is alexithymic" are convenient grammatical constructions; the intention is to use the term descriptively. Alexithymia has been described by Sifneos (1975) as a personality trait associated with a variety of psychosomatic illnesses. It is most commonly assessed via a self-report measure, the Toronto Alexithymia Scale (TAS; Taylor, Ryan, & Bagby, 1985). The TAS asks individuals whether topographical descriptions of their emotional behavior are similar to those that define alexithymia (e.g., "I have feelings that I can't quite identify.", "I prefer to analyze problems rather than describe them"). Alexithymic individuals seem predisposed to certain physical illnesses (Heiberg, 1980; Lumley, Beyer, & Radcliffe, 2008). Research has now linked this trait to various psychological disorders including: somatoform disorders, substance use disorders (El Rasheed, 2001; Fukunishi, 1996; Giannini, 1996), posttraumatic stress disorders, depression, eating disorders (Carano et al., 2006; Kessler, Schwarze, Filipic, Traue & von Wietersheim, 1996; Waysfeld, le Barzic, Aimez, & Guy-Grand, 1977), and personality disorders (Lesser, 1981; Sifneos, 1996; Taylor, 1984). More recently alexithymia has been conceptualized as a deficit in cognitive processing and regulation of emotional states and research efforts are attempting to situate alexithymia with regard to other emotion-related constructs (Luminet, Rimé, Bagby, & Taylor, 2004). Alexithymia appears to be a prevalent problem. Although no epidemiological studies from the United States were found, reported prevalence rates in other countries are 9–18% (Franz et al., 2008; Kokkonen et al., 2001; Loas, Fremaux, Otmani, & Verrier, 1995; Parker, Taylor, & Bagby, 1989; Salminen, Saarijarvi, Aarela, Toikka, & Kauhanen, 1999).

At first, the main utility of discriminating alexithymic patients was to recommend supportive therapy because psychoanalysis and dynamic therapies did not result in good outcomes for these patients (Lesser, 1981; Sifneos, 1975; Taylor, 1984). More recent research supports this observation (Grabe et al., 2008; Leweke, Bausch, Leichsenring, Walter, & Stingl, 2009; Ogrodniczuk, Piper & Joyce, 2004, 2005; Spitzer, Siebel-Jürges, Barnow, Grabe & Freyberger, 2005). There have been mixed results regarding the impact of alexithymia on cognitive-behavioral therapy outcomes (Reese, 2008; Rufer et al., 2010; Spek, Nyklicek, Cuijpers, & Pop, 2008). Additionally, researchers struggle with whether to consider alexithymia as a state or a trait. Pyschoanalytic theory relates alexithymia to developmental histories (de Tuchey, Garnier, Lighezzolo-Alnot, Claudon, & Rebourg-Roesler, 2010) and research on alexithymia and attachment styles support this construction (e.g., Meins, Harris-Waller, & Lloyd, 2008). Research has demonstrated that alexithymia is normally distributed in the general population (Franz, et al., 2008; Salminen, Saarijarvi, Aarela, Toikka & Kauhanen, 1999) However, some individuals begin to show alexithymic characteristics after traumatic events or physical illness, which suggests alexithymia is better characterized as a state (see Lumely, Neely, & Burger, 2007 for review). One solution to this dilemma has been to create another construct, secondary alexithymia (Freyberger, 1977). Another has been to describe it as a complex manifestation that includes both components (Lumley et al., 2007).

While there are multiple theories that have attempted to explain the etiology of alexithymia (Borens, Grosse-Schulte, Jaensch, & Kortemme, 1977; Buchanan, Waterhouse, & West, 1980; Heiberg & Heiberg, 1978; Lane & Schwartz, 1987; Lesser, 1981; Nemiah, 1977; Pérez-Rincòn, 1997), no one has attempted an analysis of this phenomenon with direct treatment implications. This paper offers a behavioral account of the origins of alexithymia and presents a description of a theory based approach to intervention.

2. The context of emotions

Instead of looking "inside" the individual for an explanation of the impaired expression of feelings and emotional experiences, our account of alexithymia focuses on the verbal behavior of an individual and examines factors leading to the lack of reporting emotional experiences. Alexithymia is seen as a deficiency in a person's repertoire of verbal behavior about emotional contexts that results in problems in social functioning. The extent to which this repertoire develops successfully depends on several environmental factors that will be discussed.

How people learn to describe emotional experiences does not differ in kind from how they learn to describe other experiences. The basis of our analysis has its roots in Skinner's (1945, 1957) analysis of verbal behavior, primarily tacting. A tact is a verbal response ("I'm sad", etc.) that is under antecedent control (occasioned by environmental events, S^d) and is maintained by being understood (generalized conditioned reinforcement). A "verbal response" is understood functionally such that any behavior that results in the listener understanding is a verbal response (e.g., crying). There are many different consequences that communicate the speaker was understood. The listener may express sympathy, give advice, or simply nod to indicate understanding. These listener responses can function to increase the probability that the person will tact effectively in similar circumstances. Learning to tact occurs

[2] Skinner has termed those people and things in a person's environment that shape verbal behavior a person's verbal community. The verbal community also supports textual behavior. That is, anything that is available through the media (print, TV, etc) may shape an individual's verbal behavior. In order to simplify this analysis, we will be referring to the people in the child's environment (caregiver, etc.), rather than the verbal community, although we recognize that this is not technically correct.

Table 1
Schedules of reinforcement associated with emotions.

Contingency/schedule of reinforcement	Possible corresponding collateral condition: emotion/feeling
Behavior is always reinforced	Confidence
Behavior is on extinction schedule	Low confidence, disinterest, disappointment, discouragement, depression
Reinforcement terminated	Frustration
Lack of appropriate conditions to emit behavior	Homesickness, loneliness, depression, forlorn
Intermittent reinforcement	Excitement, enthusiasm, hope
Aversive control	Anxiety
Punishment from peers	Shame
Punishment from church	Sense of sin
Punishment from government	Guilt
Behavior that has been reinforced and punished	Embarrassment, fear, caution, timid

in infants very early. A parent says "bear" each time the child is shown or plays with a teddy bear. Soon the child approximates the word "bear" and the response is understood and reinforced by the parent. The parent can see the environmental stimulus the child is trying to label and can supply the label without error. Tacting emotions requires shaping by the immediate community around the person learning to describe less obvious events. In order for this process to properly occur there has to be evidence that it is an appropriate time to speak about emotions. An effective repertoire for tacting emotions ultimately depends on the interpersonal consequences in any particular environment.[2] Skinner (1945) described ways in which a person's verbal community identifies conventional times to speak about emotions (i.e., by observation of public accompanying stimuli and of collateral behavior).

So how does learning occur when a response is emitted that is not accompanied by any public stimuli that correspond with a conventional time to speak of a certain emotion? The listener has to find some other way to discriminate what the appropriate description of the situation might be (i.e., one that will lead to an increase in reinforcement). Manipulating the child's environment until the child's emotional behavior changes is one way to find an appropriate description. This is what happens when a baby is crying and the caregiver has not observed what evoked the crying behavior. Often the caregiver can access the context in which the crying occurred. Thus, she can try to alter the contingencies such as changing the baby's diaper, trying to feed it, hold it, etc. until the baby stops crying. Then she can infer the cause of the crying; the baby must be wet, hungry, etc. In young children, the parent may verbally explore those labels until she gets it right: "is Johnny hungry…hot…oh, you're wet; that must be uncomfortable"; thus modeling the appropriate verbal behavior for the child.

More complex emotional states may be shaped if the people in the environment are observant. Observing a child staring out the window with his head on his hands may prompt one to say, "You seem bored, let's go play." Assuming that the change in child's activity increases the rate of reinforcement, the child has learned an effective label for a low rate of or decrease in reinforcement. It is also likely that an operant behavior of regulating boredom may have been strengthened if playing results in a change in boredom.

Some tacting can also be descriptions of complex social interactions. For example, a person who tacts "jealousy" when a coworker gets a promotion, is describing how he has been prevented or denied some resource that he never had but to which he claims entitlement. Therefore, accurately describing a social situation might be the first step to labeling it with an emotion word. In this case, the emotion label is a shorthand way of talking about some interaction that has a long history.

An additional discriminative stimulus for emotional talk can be seen as interruptions in on-going behavior (Hebb, 1949; Lewin, 1940; Mandler, 1984). For example, an opportunity to tact frustration occurs when a person is behaving toward a goal and this behavior is disrupted (e.g., when trying to go on a date and the car does not start). Certain schedules of reinforcement also can be opportunities to speak about emotions (see Table 1; Skinner, 1974). For example, reporting that an individual feels confident is typically occasioned by a FR1 schedule of reinforcement (i.e., behavior is reinforced each time it occurs).

More recent developments in the field of verbal behavior, stimulus equivalence and the ensuing development of Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001), add to our understanding of the complexity of the verbal repertoires that humans develop. Derived relational responding can be understood as a broad skill set that develops with language acquisition. Investigations of derived relational responding and transformation of stimulus functions have demonstrated how previously learned behavior can be emitted in contexts that are new to the learner (i.e., stimuli in new contexts act as discriminative stimuli for previously learned behavior). Thus, RFT can account for emotional expression in novel contexts.

In following sections we mention points where derived relational responding add to our analysis. However, we refer readers to the RFT book (Hayes et al., 2001) rather than walk through the detailed process of how this relational responding is learned (i.e., mutual and combinatorial entailment, transformation of stimulus function, deictic framing, etc.) in the interest of retaining focus on the clinical utility of the current social contingencies important in shaping emotional verbal behavior.

3. A word about mands

A broad tacting repertoire is also important with respect to another type of verbal response: manding. A mand is a verbal response that specifies a particular reinforcer or class of reinforcers. It is clear how manding explains part of the function of a repertoire for talking about emotional experiences and is essential for the individual to affect his environment in a way to increase access to social reinforcement. While we recognize the technical distinction between tacts and mands and the evidence that tacts and mands can be acquired separately (Lamarre & Holland, 1985; Twyman, 1996) we do not attempt to preserve this distinction throughout the paper and will use tacting when manding might be an equally likely analysis. Often tacts and mands are formally similar and hard to distinguish from one another in a sophisticated verbal repertoire. For example, the statement, "I feel insecure" is a tact, but given the social context may well function as a mand producing a hug, reassurance, or statement of love from a partner. Both functions are necessary to understand the importance of an emotional verbal repertoire.

4. Public control

The attentive reader will notice that we have not mentioned physiological responses as discriminative stimuli for tacting. Conventionally, feelings and emotions are spoken about as physiological responses that can be accessed only by the individual. This seems to be in conflict with the behavior analytic goals of finding causes of behavior in the environment. Indeed, Skinner was conflicted with how to deal with this topic. Skinner (1989) defined emotion as "a kind of sensory action" and stated that what we are feeling when we feel an emotion, such as depression, is a condition of our body. However, he has also said that behavior analysts need only be concerned with describing the contingencies of reinforcement under which things come to be felt and the verbal contingencies under which they come to be described (Skinner, 1989, p. 11).

One way Skinner attempted to incorporate both of these ideas was to refer to the conditions of the body felt as collateral conditions at the time of emotional responding. He explained how contingencies operating in the environment would produce both conditions in the body and "emotional" behavior (1974). This is also how he dealt with the private aspects of this subject in his 1945 paper. Physiological responses were treated as collateral conditions of the public stimuli and behavior of the speaker. He concluded that verbal reports of emotional experience are multiply controlled by public and private stimuli. An extension of this analysis is the idea that an individual could tact emotion when either the public or private stimuli are present. Research by DeGrandepre and colleagues (1992) supports this notion by demonstrating that interoceptive and public stimuli can be members of the same equivalence class. It also seems likely that one could learn to tact under the control of public stimuli alone.

Our emphasis on the public stimuli arises both from our wish to maintain distance from a dualistic position and to provide an analysis with emphasis on its utility in treatment since public stimuli are more readily accessible. We acknowledge that an emotional verbal repertoire is likely multiply controlled and are focusing on the public stimuli for pragmatic reasons. By broadening the scope of our review of the literature on reporting emotions, we note evidence that public stimuli may account for more variance in responding than private physiological stimuli.

Bem's self-perception theory (1967) has produced many empirical findings demonstrating how an individual gains knowledge of his internal states by observing his overt behaviors and the context in which they occur. This knowledge of what to tact is controlled more by external or public stimuli, especially when internal stimuli are weak or ambiguous. The salience of the internal cues depends on the learner's history of tacting in the presence of the private stimuli.

The classic work started by Schacter and Singer (1962) demonstrated that reports of emotion can be manipulated by altering the social context. Participants experienced an ambiguous increase in arousal (i.e., given epinephrine injections) and were asked to report on their emotions. These reports varied with other contextual features (i.e., confederates' angry or euphoric behavior).

Furthermore, reviews of psychophysiology of emotional experiences have concluded that emotion specific activation of arousal systems does not occur (Barrett, 2006; Shiota & Keltner, 2005). The general view is that sympathetic nervous system arousal occurs, but the arousal patterns cannot reliably be discriminated. Additionally, there is evidence that people report emotion even when they do not experience arousal (Bermond, Nieuwenhuyse, Fasotti, & Schuerman, 1991; Erdmann & Van Lindern, 1980; Lang, 1994; Tyrer, 1976). Finally, the literature regarding differences in physiological responding to emotional stimuli has failed to find consistent differences between those with and without alexithymia (e.g., Brosschot & Aarsse, 2001; Franz, Schaefer, & Schneider, 2003; Linden, Lenz, & Stossel, 1996; Martinez-Sanchez, Ortiz-Soria, & Ato-Garcia, 2001; Newton & Contrada,1994; Pollatos, Schubo, Herbert, Matthias, & Schandry, 2008; Roedema & Simons, 1999). It seems that individuals are accurate reporters of arousal but must depend on context to determine the specific form of a response. Thus, clinically the importance of talking about emotional experience has to be found in the social context in which it occurs. Limiting our analysis by excluding physiological responses is not just a way of simplifying the explanation. In fact, refocusing attention on the environment helps explain the complexity of speaking about emotions; since the behavior is under the control of the environment and one's learning history, different situations can and often do evoke different behavior

5. Functional pathways to alexithymia

Problems labeled as alexithymia occur along a continuum of severity. It is difficult to establish a cut-off point to discriminate where a repertoire for tacting emotional experience becomes problematic. As a result, a broad range of functional pathways related to verbal behavior about emotions are described. Deciding when a person's repertoire is significantly impaired is pragmatically defined and depends on the context. If the person is not getting what she needs from her environment, then there is something on which to work. This could result from a mismatch between the person's repertoire and current environment as well as the individual's skills. Importantly, this analysis provides a parsimonious account of the various research findings in the alexithymia literature, including the relationship with other emotional constructs and the abundance of research attempting to decipher whether alexithymia is a state or a trait. As a learned behavior, an individual's ability to talk about emotional experiences is constantly being affected by each new experience that adds to one's history.

Turning attention to some of the many ways that an individual's repertoire might not have developed or might become impaired, the following descriptions will include singular learning situations, as well as more extreme learning histories, that could lead to clinically significant impairment. For simplicity we refer to caregivers interacting with a child. However, interactions with any part of a person's verbal community can affect his repertoire.

6. Noticing antecedents and responding

6.1. What if no one notices?

Caregivers who are typically unavailable or inattentive to their children cannot teach a child a broad repertoire for tacting emotions because they miss opportunities to teach the response or reinforce the appropriate response. When some stimulus occurs and no one supplies a label for that experience, the child may not tact this occasion appropriately. Similarly, if the child has learned the appropriate tact, it is still necessary for someone to be present and attentive to reinforce emotional responding when antecedents for this type of behavior do occur. Otherwise this repertoire will be subject to extinction. This lack of tacting could be limited to certain contexts whereas future experiences might teach the child the utility of tacting in different contexts. Neglect is an extreme situation that may result in alexithymia through the same process. The primary problem is that no one is available (physically or psychologically) to provide discrimination training related to situations in which one typically speaks about emotions (as well as limited social interactions that would make such a repertoire important). There is indeed evidence suggesting a relationship between alexithymia and neglect (Joukamaa et al., 2008).

6.2. Highly sensitive learning environment

An overly sensitive learning environment can produce vague emotional responding that is too weak to evoke responses from people other than the caregivers. A caregiver who is exceedingly sensitive to very minor changes in a child might notice and respond to any subtle change in her child's behavior. For example, the caregiver could provide support and the tact "you must be very upset" upon noticing the child looking down. This could result in the child learning that looking down is a response that leads to understanding and support. This eliminates the need to say "I'm sad", cry, or any other more noticeable response pattern in order to receive this type of attention. However, people other than the very attentive caregiver might not notice and respond to the child looking down. As this child grows, she might have difficulty finding an environment that will discriminate her emotional responses. This could result in the individual feeling distant from others and not forming close relationships.

6.3. Insensitive learning environment

In contrast, a caregiver's repertoire might not be sensitive enough. A caregiver might only teach tacting of emotions in the presence of extremely conspicuous stimuli. For example, a caregiver might teach the response "I'm sad" when she loses her job or ends a relationship. The child never learns to respond "I'm sad" to other situations that may affect his behavior such as a toy breaking, the dog leaving, or a friend going home. As this person matures with this limited tacting repertoire, it would be difficult to notice what she appreciates or does not appreciate about her partner. She might not tact annoyance or disappointment day to day but might finally notice that she is unhappy without noticing the specific situations that led to feeling unsatisfied. The only solution could seem to be to end the relationship (or remain unhappy). The partner would have no idea that she was not happy until she breaks up with him. He would be at a loss to explain this or to change his behavior in future relationships. Similarly, she would not gain information about what went wrong that would be valuable for choosing a future partner or sustaining a long-term relationship.

6.4. Limited teacher response repertoire

The degree to which learning to tact emotional experiences is acquired is a function of one's teachers' ability to tact a broad range of emotional contexts. A child can only learn to tact the things that the people around him discriminate and label. Consider the situation where a caregiver only tacts anger. When her child breaks a toy and cries, if the caregiver only labels the child's experience as anger, the child will not learn to discriminate anger from frustration or disappointment and will be left with as limited a repertoire for tacting emotions as his caregiver. Other forms of emotional responding will remain unknown and the child's ability to impact his environment will be limited to angry behavior.

This limited learning history could lead to all-or-none emotional responding viewed by others as impulsive. Varied levels of emotional responses, such as a range of affective expression or qualified verbal responding, might be absent from the individual's repertoire. Their verbal responses could be confined to polar opposites of feeling nothing or being overwhelmed with emotion and could be emitted under environmental conditions that appeared too weak or too strong for the social community. For example, a typical graded response to a partner who forgot to pick up the mail might be slight frustration or annoyance. A person with an all or none responding repertoire might tact extreme anger. To others, this response would seem unnecessarily strong and would interfere with them responding in an understanding way or changing their behavior in a way that would positively impact the relationship. Extending the example, the husband might dismiss this angry response (e.g., "She's just being emotional today") and not change his behavior. Thus, this ineffective emotional response could lead to similar frustrations as she has not effectively impacted her environment in a way to decrease the probability of these situations occurring.

6.5. Relational framing restricts repertoire

Derived relational responding can limit an emotional verbal repertoire. While growing up, a male child's environment may support emotional behavior. However, he may learn to inflexibly behave with regard to the rule, "boys don't cry" (i.e., pliance), and not only stop crying, but stop any emotional behavior that he relates to crying across many situations. Anyone who has conducted marital therapy will recognize the wife's common complaint that the husband does not share his feelings. This common male repertoire, which has been studied as "normative male alexithymia" (e.g., Levant et al., 2006), could be limited through the formation of a relational frame (e.g., "I'm the strong, silent type").

7. Consequential control

7.1. Nonspecific consequences

A restricted repertoire for speaking of emotional experiences can occur if a caregiver "chunks things too small". For example, a caregiver may immediately provide nonspecific reinforcement (e.g., attention, toys, and cookies) every time a child says he is unhappy (describes antecedent stimulus condition). The child will likely have difficulty discriminating the specific antecedent conditions to which he responded. The result is that the child never learns beyond "I'm unhappy", and neither the child nor the people around him know what specific things to do to make the child happy. Surprisingly, this is similar to what can happen in an abusive relationship. A husband may say "I'm unhappy", and the wife does everything she can to soothe him. Any inattention (not soothing) leads to escalation in the husband's behavior. The result is that the husband does not learn anything about variables that influence his behavior beyond saying "I'm unhappy" and the wife does not know precisely what specific things to do to improve her husband's mood.[3]

7.2. Emotional responding is extinguished

A behavioral repertoire that could be labeled as alexithymic can also develop when the child's caregiver does not provide appropriate positive consequences for expressing emotion. Linehan (1993) has described these as invalidating environments. If positive consequences do not follow the expression of emotion, the probability that this tact will occur under the same or similar stimulus conditions decreases either through punishment or extinction. Consider a teenager who tells her mother that she is upset with her friends because they did not invite her to go shopping. If her mother replies, "You don't have the money anyway", she is not responding to the emotional tact. This may decrease the probability of the teen attending and responding to the ways her social environment impacts her. In other words, this invalidating environment may extinguish her emotional repertoire.

[3] We are not saying that this is the appropriate way of dealing with an abusive situation. The same problem and poor solution could arise from an insecure partner responding by imprecise and excessive attention to a partner saying "I'm unhappy."

7.3. Emotional responding is punished

Abuse is an extreme variant of this same problem, and research has supported a relationship between alexithymia and a history of abuse (Berenbaum, 1996; Joukamaa, et al., 2008). In abuse, accurate expression of emotion may well be met with punishing consequences. Therefore, the child will learn to avoid the negative consequences by avoiding tacting emotions. For example, a caregiver might respond to a child crying by telling her not to be a baby or some other form of invalidation (including physical abuse). In order to avoid the abuse the child learns to stop crying or to not attend to emotional situations. In essence, emotional situations are responded to as equivalent stimuli that occasion avoidance behavior.

Since tacting comes under control of different public stimuli, during an instance of sexual abuse, any tact that is contrary to what the abuser is feeling will be punished. The stimuli that occasion a tact of emotion are not the ones related to the child's own behavior; rather, she pays attention to the behavior and responses of the abuser as occasions to tact emotion. Due to the chaotic nature of this type of environment it is difficult to predict what the abuser will be feeling or intending to express to the victim. Thus, a child is likely to be confused about how to label an emotional response resulting in inconsistent, little, or no responding. Later, this individual may respond in unusual ways (i.e., not the way expected by the listener) due to the derived relations she learned while being abused.

The idea that people in an individual's environment find the tacting of emotion aversive is not limited to the case of abuse. A child might learn to tact emotion at home but meet with negative consequences at school. A teacher who is stressed might not know how to respond or might just not respond to a child crying over a broken toy. Children involved in athletics may be encouraged to "tough it out". The child may just learn not to emit emotional tacts in these specific contexts. Alternatively, his repertoire could become more limited through the establishment of derived relations between these situations and others where he has emitted emotional tacts. Thus, the child can have an over-generalized response to this punishment, and relate emotional responding to "weakness".

7.4. Emotional responding is aversive to the individual

One may avoid tacting emotion in order to avoid the aversive state that has typically followed such tacting or those aversive stimuli one has framed relationally with tacting emotion. Glenn (1983) referred to this as the motivation for denial. Saying, "I'm okay" may be a way to avoid the aversive state that would follow a different, more accurate tact. For example, a woman might be unhappy in a relationship but not know how to end it or be afraid to be alone. Acknowledging that she is not happy (tacting her emotional experience) would lead to the aversive state of not knowing how to change the relationship or being afraid to change. Therefore, not tacting emotion can function to avoid speaking of the possibility of change and the aversive state that would accompany this discussion. This same avoidance function can occur from imprecise tacts that do not clearly identify the antecedents involved. If an individual says "I'm unhappy with my life" or "I don't know," she does not give information that is specific enough to lead to change.

8. Secondary alexithymia: when can things go wrong?

As can be seen from some of the examples above, different tacting repertoires can be learned in different contexts. An individual's repertoire could be different with parents, at school, with friends, and with partners. It is important to look at other changes in environments later in life that can affect a person's ability to tact emotion.

In the alexithymia literature, "secondary alexithymia" is defined as alexithymia that is a state reaction to physical illness (Freyberger, 1977) or other major or extraordinary life change. Our analysis also addresses secondary alexithymia. A drastic change in an individual's environment can substantially alter the way that he responds, including his responses to emotional events.

For example, limited emotional responding can result from a physical illness or injury that alters the way a person engages his life. A repertoire for tacting emotion might not be sufficient to deal with these changes; he might not have a response available to describe the changes in his behavior or environment if he has not been in a similar situation in the past and learned such a response. For example, an individual recovering from surgery might tact sadness. This might not be specific enough for his environment to effectively respond (is he sad about his physical functioning not being what it used to be, about the money he lost to the surgery, about the loss of social or physical activities). If no one in his environment has experienced a similar situation it is not likely they will be able to offer understanding of the right part or the whole of his experience. A more specific tact (e.g., "I'm sad I can't play sports") might be aversive to the people in his environment because it is impossible to improve the situation. This interpretation is supported by research by Wise and colleagues that related alexithymia to functional impairment and level of depression following physical illness (Wise, Mann, Mitchell, & Hryvniak, 1990).

Follette and Naugle (2006) offer a similar explanation for how alexithymic responding could develop and be maintained in a victim's environment following a traumatic event.

Consider the circumstance where a woman has been a victim of rape. If a victim does not have a history of responding to the stimuli produced by the rape, it is unlikely that she will produce an accurate tact. When prompted to tact her experience she might say, "I don't know". This makes it difficult for people in her environment to be supportive as they have not been given the information they need in order to understand her experience. Furthermore, if pushed to tact an emotion it is possible that she will give a tact of guilt or shame. In this case, the husband might try to be supportive but could say something that punishes her tacting (i.e., "You have no reason to feel guilty. It's not your fault."). If her husband finds any discussion about the event aversive and avoids this topic, it would be improbable that the victim will try to develop a functional tact of her emotion thus resulting in a deficit in describing this important life event. Alternatively, the victim may derive an equivalent relation between talking about the experience with the actual assault and avoid engaging in any conversation related to the assault regardless of the partner's responses.

These situations involve a decrease in the availability of positive reinforcement or an increase in aversive contingencies for tacting that result in an overall decrease of emotional expression. Correspondingly, an individual's manding repertoire will suffer and further relationship dysfunction will result. A lack of specific tacts prevents the individual from "knowing" what she wants. An individual may decrease her mands, in general, or mand for dysfunctional outcomes. For example, the wife who has been assaulted might mand for time alone due to her inability to be understood (i.e., not tacting in a way that her husband can support). In trying to be helpful, her husband could follow through and leave her alone. However, this is likely to bring more distance within the relationship as she will not be getting support and her husband will be avoiding her (i.e., decreasing opportunities to maintain intimacy). Thus, alexithymia as a learned behavior helps explain how certain circumstances can drastically alter the way an individual speaks about emotions and the related problems that can develop.

Table 2
Functional pathways to alexithymia and clinical implications.

	Functional pathway	Clinical implication/intervention
Antecedants	No one noticed or taught individual to discriminate antecedents.	– T. will mand for a tact at appropriate times, have to build repertoire of emotion words, and provide positive consequences for tacting – Create situations in therapy where tacting would be useful for relationship. Situations should be similar to those client will encounter outside of therapy
	Highly sensitive learning environment (respond to minor changes)	Chunk responding into functional units (environment will only respond to so many tacts).
	Insensitive learning environment (only responded to extreme situations)	Provide opportunities to tact that are not as salient. T. must work to make client attend to them. Might be good to watch movie with this person, etc.
	Limited teacher repertoire	Give other response options for client to try.
	Relational framing restricts tacting repertoire	T. creates situations in therapy where flexible responding would produce increased social reinforcement
Consequences	Nonspecific consequences given for any tact. Never learn specific antecedent conditions associated with tact.	Model more specific tacts and only provide consequences that are specific to situation.
	Emotional responding has been extinguished	T. will have to shape appropriate times to tact emotional experience and provide positive consequences to demonstrate purpose of tacting.
	Emotional responding has been punished	– Do not punish emotional disclosure in therapy – Model possible tacts – Provide many positive consequences for tacting
	Tacting emotion is aversive to individual	– Build problem solving skills that will lead to positive outcome – Reinforce tacts of emotion and approaching a problem
	Novel stimulus situation (i.e., trauma or physical injury)	Don't punish attempts at tacting even if they seem inaccurate; shape those that are more useful for eliciting support

9. Intervention and on-going assessment

Although it is controversial to speak of emotions without referring to some private, physiological responding, considerable clinical progress can be made by analyzing and intervening at the level of observable contingencies. This analysis places emphasis on the idiographic nature of an individual's emotional experience and the function of such a repertoire in a social environment. Furthermore, the therapeutic relationship can be an important social environment to evoke and shape functional emotional and verbal behavior (Highlen & Baccus, 1977; Highlen & Nicholas, 1978; Lam, Marra, & Salzinger, 2005). This section describes how one might apply the principles of clinical behavior analysis to address alexithymic behavior in therapy. As with any intervention, obtaining client consent and working collaboratively is important in shaping this repertoire.

There are many cues a therapist might observe that could suggest further analysis of a client's emotional responding repertoire is useful. Early in therapy, an alexithymic individual is likely to give excessive detail when describing situations. These descriptions lack emotional words. As sessions go by, the therapist notices that there is a lack of emotional depth within the conversations; she understands some basic facts of the client's life situation but does not feel like she can empathize with the client's struggles. Lack of behavior change might be another cue that the client has a deficit in emotional responding. What may seem to be productive problem solving may fail to lead to changes in the client's behavior.

A functional analysis is required to examine how emotional responding (or corresponding deficits) functions in an individual's environment including how the client's repertoire functions in therapy.[4] The goal is to determine how to predict and influence emotional responding in such a way that there is an increase in social reinforcement within the therapeutic relationship. In order to determine a client's skill level, the clinician will vary both the antecedent conditions expected to evoke emotional responding and the consequential stimuli provided. Does the client's repertoire change when the therapist tacts emotions with a high frequency or different intensity? Does the client use emotional words in her reports? Do the descriptions of the client's emotion make sense to the therapist? That is, do the emotional tacts appropriately correspond to the situation or conditions the client describes? Does the client increase his use of emotional words when the therapist responds positively? Additionally, the therapist will need to assess historical events that may have impacted the client's current emotional expression repertoire. It may be that interactions following trauma have resulted in extinguishing the client's repertoire. Other factors to assess are physical illness, abuse, neglect, or negative relationships (i.e., those where the partner did not support this type of repertoire). This type of assessment is an iterative process. It will continue throughout treatment and the therapist will change the conceptualization as she incorporates data from each new interaction with the client, taking into account any changes in the client's repertoire. Thus, the following sections will incorporate the factors to assess as a component of intervention.

While establishing a verbal repertoire for speaking about emotions in an adult is more difficult than with a child, the intervention is based on similar strategies. The clinician becomes an important source of reinforcement of the client's verbal behavior. The therapist's role is to shape verbal behaviors that were not adequately or accurately shaped in the past. The goal of therapy will be to develop a flexible repertoire that functions within relationships in such a way as to maximize the social reinforcement available.

During therapy for alexithymic individuals, the therapist serves many functions similar to those that should have occurred in the natural environment. These functions will be briefly discussed along with the skills necessary for a therapist to fulfill them and factors that lead to difficulty. Before going into detail about what the assessment and intervention entails, we have provided a table that briefly presents some of the functional pathways that lead to an alexithymic presentation and the clinical implications of each (Table 2).

[4] For more information on conducting a functional assessment see Follette, Naugle, and Linerooth (2000), Haynes and O'Brien (1990), and Kanfer and Saslow (1969).

10. Therapeutic environment

An essential part of an intervention that aims to help clients develop a repertoire for expressing emotions is to create an environment where this emotional repertoire would matter (i.e., be valued in therapy). In order for these interactions to have the necessary stimulus properties to evoke an emotional repertoire the relationship has to be one that significantly matters to both client and therapist. In fact, this is the basic premise of Functional Analytic Psychotherapy (FAP) (Kanter, Tsai, & Kohlenberg, 2010; Kohlenberg & Tsai, 1991; Tsai et al., 2009). FAP recognizes the applicability of behavior analytic principles in producing interpersonal and intrapersonal behavior change in therapy. One key to producing change involves creating an intense therapeutic relationship such that those behaviors that are present or should be present in the client's other relationships will occur in the therapy relationship. Not only is relationship building an important step in order to create evocative situations, it is also necessary for the therapist to impact, i.e., reinforce, the client's behavior. In other words, what the therapist says and does has to function as discriminative and reinforcing stimuli in order to create the conditions for emotional responding and learning to occur (see Follette, Naugle, and Callaghan (1996) for an analysis of this process).

11. Antecedents

The therapist has to recognize opportunities within the therapeutic relationship where it is appropriate to evoke and express emotion. The therapist might gain some helpful knowledge during an assessment of other relationships where the client discloses events that have negatively or positively impacted him or where the client describes situations that commonly lead to affective expression but to which the client has no such response. Otherwise the therapist might have to look at what she knows as situations where most people would tact emotions.

This treatment does not involve the therapist arbitrarily manding for emotional verbal behavior for the sake of emotional verbal behavior but rather the therapist tries to create an interpersonal relationship where tacting and manding should be naturally occurring responses. As with all therapy, generalization of these repertoires is targeted and impediments to generalization are addressed.

Such a relationship should include sufficient variability to make it less likely that the client will learn to emit only inflexible rule-governed behavior (i.e., pliance). If a client learns that “People only understand me when I am emotional”, it is likely that she will tact at a rate that will not function across different settings (e.g., with work colleagues versus within intimate relationships). The therapist needs to help the client notice different aspects of the current context, rather than responding according to rules (e.g., “It's only safe to talk about positive emotions”). Ultimately the client is expected to show response variability when the stimulus conditions in the relationship vary.

The therapist and client will determine how much emotion labeling is enough. In other words, an individual only needs to tact enough to obtain reinforcement. This is especially relevant for those clients who explain the endless details of situations without tacting their responses to the situations. It might be possible for the client and therapist to figure out an emotional tact for each turn of a client's story about an argument with his partner (i.e., when she said x, I felt sad, when she said y, I felt mad, when she said z, I felt hopeless). However, it is unlikely that tacting at this rate will lead to reinforcement at the same rate in any other environment. The partner will only be able and willing to reinforce or act effectively in relation to one or a few of these.

12. Consequences

Behavior change requires that the therapist effectively supply consequences to the client's new behavior. Setting up the environment such that the client comes to therapy ready to work is one step; supporting this effort will be another. A therapist has to provide positive consequences for an appropriate affective response in order to increase the likelihood of that response being emitted in the same or similar circumstances. Likewise, the therapist may have to carefully provide negative (or no) consequences for responses that are not appropriate and differential reinforcement for alternatives.

In many instances a client will not have had listeners who supported and shaped talk about negative feelings or aversive states. In this situation, the clinician is required to provide positive consequences for client responses regarding his negative emotional experience in hopes that this will increase the probability of the client doing so in the future. The therapist needs to be skilled at communicating her understanding of the client when an emotional response is given in order to reinforce this type of responding. The therapist should assess how well she can predict the impact of her behavior on the client. Is it easy for the therapist to respond in a way that is soothing? How well does the therapist understand how she can influence the client's behavior in session? If the therapist is able to respond in a way that reinforces the client's expressions, she should be able to increase the client's approach behavior including the frequency with which the client displays emotional behavior. This does not imply that the goal of the therapist is to constantly soothe the client. Rather, therapy should create conditions were a range of emotional responding is appropriate and help the client impact his environment in ways that decrease his distress (i.e., effectively mand for change). It is similarly important that the client is able to reinforce the therapist's emotional or supportive behavior just as he or she would when interacting in important other relationship.

As can be seen from the previous analysis, there are many important functions of an emotional verbal repertoire. Thus, the consequences that affect the probability of tacting occurring in therapy are also diverse. These include supportive and empathetic responses from others, soothing or other behaviors that help reduce distress initiated by others or the individual himself, change in another person's behavior, and effective problem solving. A thorough functional assessment will need to address all of these aspects.

The therapist should notice what kind of impact the client's reports have on the therapist. Does the therapist have any negative reactions to the client's report of emotion? This might make it difficult for a therapist to engage with the client about topics that evoke reports of emotion. Refining the client's report of emotion could help the client and therapist identify controlling variables of the client's behavior that are subject to change. For example, rather than tacting “life sucks”, the therapist and client could identify that the client was experiencing disappointment in his job performance. This would lead to a course of action that could improve the client's life. A therapist experiencing a negative impact in response to a client's emotional expression could also imply that the client does not want to focus on the current topic (i.e., for some reason it is aversive to the client as well). This might indicate an assessment of what has happened in the past when the client has made similar tacts or that the focus of therapy should change to something else. Additionally, the negative impact on the therapist could result from the client's manding repertoire. The therapist might notice that she is constantly pulled to solve all of the client's problems.

The predictability of the client's overt behavior based on the client's verbal behavior is an important assessment issue. How

well can the therapist predict the client's behavior, both in and out of session? For example, a client might report that he is satisfied in his current relationship but not with his work situation. However, if in subsequent sessions the client reports frequent arguments with his partner, the observant therapist should inquire further about how well the client is tacting different situations within his relationship. If the client's behavior is unpredictable, it is possible that the client is not tracking patterns of emotional responding. This would result in a lack of useful decision-making information about how best to attain reinforcement. Thus, a likely reinforcing consequence to an accurate tact may be effective problem solving.

Sometimes, merely providing positive consequences in the form of understanding and support will not be sufficient. As mentioned above, emotional verbal behavior might be absent in order to avoid the related aversive state. The therapist has to determine if speaking about emotions leads to a useful outcome for the client. Thus, part of the intervention will be to demonstrate the importance of effective emotion verbal behavior (tacting and manding): movement toward effective action (e.g., manding for advice and corresponding client behavior change, manding for partner behavior change, etc.).

In situations where the client does not behave in ways consistent with the therapeutic relationship (i.e., does not tact emotion despite safe environment created in therapy), the therapist may need to explore avoidance repertoires and make use of exposure. Understanding avoidant behavior may involve an analysis of the inconsistencies of contingencies across environments as well as relations the client has derived with emotional verbal behavior. A client who has a long history of being unable to change things in his environment might avoid tacting emotion. The therapist may need to expose the client to this process by repeatedly asking him to tact emotion and work together to figure out where and how it might be useful for the client to change his behavior or environment. This same principle may be employed for a client who has experienced a traumatic event. The therapist may offer opportunities and support any tact related to the traumatic experience as an important first step. As the client becomes more comfortable approaching this topic, the therapist and client can explore which tacts are useful in the client's environment.

Care must be taken not to punish a tact that may be aversive to the therapist. For example, a client might tact that he is very disappointed in the therapist. If a therapist misses the fact that this could be an important clinical improvement, she might punish or ignore this response by trying to deflect this feeling. Rather, the therapist and client can explore the accuracy of the tact and whether it is useful to talk about with regard to the therapeutic relationship. The therapist might want to know how she disappointed the client but also the way the client expressed the response that made it aversive for her to hear. If the client expressed himself in a different manner, it could more effectively lead to changes in the therapist's behavior. This type of interaction is likely to strengthen the relationship, improve the client's verbal repertoire and lead to a better therapeutic outcome.

13. Shaping a flexible repertoire

Once the therapeutic relationship is established and the therapist has been able to identify the client's specific deficits, the therapist begins to shape the client's repertoire. This requires the therapist to skillfully model and otherwise provide different labels for emotional experiences.

One expects therapy to proceed slowly. It is likely that the tacts will be infrequent and imprecise at the beginning and the therapist will have to shape this repertoire. This will happen through the therapist building a more complicated, nuanced relationship with the client where more diverse emotional contexts sensibly become the topics of therapy. The client and therapist work together in identifying the most accurate or useful tacts in these situations. If a client does not know what he is feeling, the therapist can offer alternatives (e.g., “Try something; it doesn't have to be right. Say ‘I feel hurt’ or ‘I feel embarrassed’ and we’ll see if one feels more accurate than the other.”) Additionally, they can explore which produces a more useful way for the therapist to understand the client (e.g., “I feel hurt” may make the therapist want to apologize or soothe, while “I feel embarrassed” would lead to a much different response). This shaping process can be difficult. Though the therapist may reinforce an angry outburst if it were the first expression of emotion a client ever displayed, she should acknowledge that there is still successive shaping that has to occur before the emotional expression will function usefully. It is useful to explore which tact is useful from both the perspective of the person tacting and the listener.

To be effective the therapist must respond naturally and contingently. A therapist who has been inaccurately criticized will have a difficult time providing useful consequences to the client. It can be difficult to respond to client expressions of closeness as well. A therapist has to develop a repertoire to deliver many kind of consequence. The goal is to differentially respond to the effectiveness of any given tact while appreciating the effort required by the client to emit new behaviors.

Above all, the therapist will have to analyze the function of her responding in the moment. The therapist's ability to notice appropriate discriminative stimuli and successive approximations of clients' behavior are essential. Having a flexible repertoire that allows the therapist to try different ways of evoking and responding to the client's behavior is necessary. The therapist needs to have sufficient behavioral flexibility to find what works to increase the client's emotional responding (i.e. what functionally evokes and reinforces client improvements). This requires that the clinician have a sufficiently broad tacting and manding repertoire related to emotional experiences.

14. Generalization

The goal of therapy is to establish a repertoire that will generalize. In some situations, the therapist might have difficulty making certain stimuli salient enough to evoke a response. Perhaps the therapist might try setting up a more controlled situation such as watching a movie with the client or some type of experiential exercise. While these techniques can be very useful we would offer a word of caution. While relying on a certain provocative technique is likely to help evoke an emotional repertoire, it may lead one to lose track of the context in which they want this repertoire to occur. What stimuli are provided that will be present in the client's outside environment? What consequences are provided during these interactions that are likely to support generalization of this behavior?

The specific consequences with which the therapist responds to a client's attempt at expressing emotions should ultimately be natural, where natural means the same as those that reinforce the behavior in the client's real environment. Empathetic and supportive responding is likely to naturally reinforce expressions of sadness and grief. Problem solving might be a natural reinforcer for some emotional expression that implies how change would help as well. Just like a child developing this repertoire, it will be important for a client to learn how to regulate his emotional behavior by engaging in some effective action (e.g., doing something else if bored, re-engaging in some previously reinforced activities if depressed). Making the distinction between an appropriate and inappropriate consequential response requires knowledge of the type of consequences the client

will likely encounter outside of therapy. This can be difficult for therapists whose clinical environment may shape verbal behavior not likely to be available outside of therapy, such as the "thank you for sharing" response. Although a therapist may find this response useful in the shaping process, it may lead to difficulty in generalizing or maintaining the client's new repertoire outside of therapy.

Second, the therapist needs to understand how her unique learning history may affect the way in which she responds to the client. The therapist must recognize how the important people in the client's environment would respond to a certain situation. One might think of this as the "Greek chorus" response. The therapist will have to be able to distinguish when she is responding because of unique variables in her history and when she is responding in a manner more consistent with how people in the client's environment would respond.

Thirdly, the therapist needs to understand the client's particular outside environment. A fifty-year-old male client who works on Wall Street and a seventeen year old male client who lives in an economically impoverished environment will be expected to emit very different responses to similar situations. The therapist needs to know how similar her reactions are to those of the people in the client's normal (natural) environment. The therapist also needs to assess how the client impacts those around him. If the therapist finds it hard to understand and support the client but the client's repertoire works with other people with whom the client is close, it could suggest a deficit in responding to diverse environments. It is useful to the therapist to understand what kind of repertoire is being shaped and maintained outside of therapy. An accompanying environmental intervention might be necessary to maintain the skills developed in therapy.

Finally, it is important to teach the client to discriminate appropriate contexts in which it is effective to tact emotion. A client who works as a police officer may not want to tact the same emotional experiences in his work environment as he does at home because this same behavior is not likely to result in positive consequences in both environments. Having the ability to tact a certain emotion has to have some utility for the person in his or her varied environments.

15. Conclusion

The point of this article is to understand the construct of alexithymia from a radical behavioral perspective. Our explanation points to a learning history of a person who presents to therapy as alexithymic. Understanding this construct as learned behavior intrinsically tied to social contexts provides a comprehensive understanding for the diverse research findings in the alexithymia literature (e.g., correlation with depression, secondary alexithymia). Finally, we hope that we have made it clear that there are ways to provide new experiences that will set the occasion for tacting emotion and help establish this repertoire so that a client can behave more effectively in his or her interpersonal relations. Putting it into practice is a complex task.

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