

# Case Study: Disgust and a Specific Phobia of Buttons

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## ABSTRACT

The role of disgust in childhood phobias has received limited attention in the psychiatric literature. Available studies suggest that attention to the emotion of disgust is optimal for reduction of phobic symptoms given that the interaction between fear and disgust has been found to maintain and even exacerbate phobias. Disgust was targeted via imagery exposures as part of an exposure-based cognitive-behavioral intervention for a 9-year-old Hispanic American boy who presented with a specific phobia of buttons. Posttreatment, 6-month, and 12-month follow-up assessment results demonstrated maintenance of treatment gains. The role of disgust in treating specific phobias in children is discussed. *J. Am. Acad. Child Adolesc. Psychiatry*, 2002, 41(11):1376–1379. **Key Words:** childhood phobias, disgust, treatment.

Disgust was recently touted as “the forgotten emotion of psychiatry” (Phillips et al., 1998) and as playing a potentially important role in both the genesis (Rozin and Fallon, 1987) and treatment (Woody and Teachman, 2000) of phobias. Disgust has been hypothesized as a concurrent emotion that in interaction with fear may result in increased avoidance behavior (Phillips et al., 1998). A conceptualization for this process of interaction between fear/phobia and disgust is one that we would further like to coin “the forgotten learning process of psychiatry,” namely, *evaluative learning* (see Baeyens et al., 1996).

Evaluative learning, a form of classical conditioning, is qualitatively distinct from the more commonly studied form of classical conditioning, namely, *expectancy learning*. In expectancy learning, the presentation of a previously neutral/nonthreatening object or event associated with a potentially threatening negative outcome increases the individual’s expectation of coming into contact with that object or event (see Field and Davies, 2001). This results in the individual’s reacting with the emotion of fear. Evaluative learning, in contrast, does not depend on the individual’s expecting, or being aware, of the asso-

ciation between the neutral/nonthreatening object or event and the negative outcome (Hermans et al., 2002). Rather, in evaluative learning, the individual comes to perceive or “evaluate” the previously neutral object or event negatively. Thus an individual may negatively evaluate a specific object or event (evaluative learning) without anticipating the threat of an objective contaminant or objective danger (expectancy learning). This negative evaluation toward the object or event is better conceptualized as eliciting disgust rather than fear (Merckelbach et al., 1993), suggesting broadening of treatment to include targeting not only fear, but disgust as well (Woody and Teachman, 2000).

To date, only one study targeted disgust and found it to be beneficial for fear/phobia reduction. The sample was composed of 47 nonreferred adults with symptoms of fear and disgust relating to blood-injury (Hepburn and Page, 1999). In the child literature, De Jong et al. (1997) found that ratings of disgust decreased among spider phobics concomitant with decreases in fear ratings, highlighting a functional relation between fear and disgust. De Jong et al. (1997) did not examine the effects of targeting disgust in phobia reduction.

We were recently presented with an opportunity to target disgust in a childhood phobia treatment case. The phobia was one that we found to be peculiar from the onset, namely, the child presented with a specific phobia of buttons. Given that disgust and evaluative learning are insufficiently covered in the child psychiatric literature, the purpose of this article is to bring these issues to the forefront via this case study.

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## CASE REPORT

## Participant

The participant was a 9-year-old Hispanic American boy. He presented with his mother to the Child Anxiety and Phobia Program at Florida International University, Miami, with an avoidance of buttons. The boy and his mother provided informed consent to participate in the assessment and intervention procedures. Subsequent to the completion of the follow-up, his mother provided written consent for our write-up of this report as well as its publication. On the basis of child and parent interview data (i.e., Anxiety Disorders Interview Schedule for *DSM-IV*–Child and Parent versions [ADIS-C/P]) (Silverman and Albano, 1996; Silverman et al., 2001), the boy met *DSM-IV* criteria for specific phobia of buttons.

The phobia began when the boy was 5 years old, in kindergarten, during an art project that involved buttons. He described the situation in which he ran out of buttons to paste on his posterboard and was asked to come to the front of the class to retrieve more buttons from a large bowl on his teacher's desk. When he reached for the bowl, his hand slipped and all the buttons in the bowl fell on him. He described this experience as distressful, and since then both the boy and his mother reported that his avoidance of buttons continually increased. At first, his avoidance of buttons did not present many difficulties, but as time progressed, it became more difficult for him to handle buttons. This led to several areas of interference for the boy and his family, such as not being able to dress himself and difficulties concentrating in school due to excessive preoccupation with not touching his school uniform or anything that his buttoned shirt touched. Outside school, he avoided wearing clothing containing buttons and avoided contact with buttons that others wore.

When the boy and his mother presented to the Child Anxiety and Phobia Program, the duration of the phobia was 4 years. Both reported that during this 4-year period, he did not experience significant stressors or events that could be related to the phobia's onset. Both authors were careful and deliberate in ruling out possible adverse events in the child's life such physical or sexual abuse, accidents, or other significant traumas. Moreover, the symptom presentation did not meet the criteria for *DSM-IV* obsessive-compulsive disorder as the types of symptoms reported by the child and mother did *not* include recurrent and persistent thoughts, impulses, or images

that may be intrusive, as observed in obsessive-compulsive disorder. Rather, his marked and persistent avoidance of buttons was cued by the presence and anticipation of buttons, as observed in specific phobia.

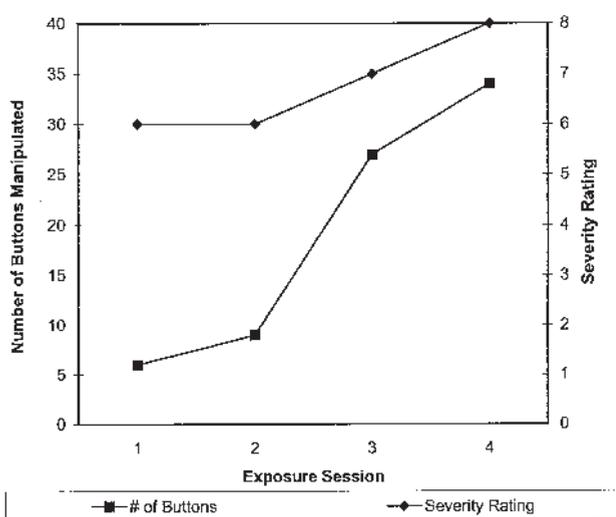
## Intervention Procedure and Results

*Behavioral Exposures.* The child was treated with an exposure-based treatment involving cognitive and behavioral procedures (see Silverman and Kurtines, 1996). The treatment involved first using contingency management in which the mother provided positive reinforcement contingent on the child's successful completion of gradual exposures to buttons. Treatment sessions lasted about 30 minutes with the boy and 20 minutes with the boy and his mother. Table 1 shows the hierarchy devised in session along with the boy's subjective ratings of distress (on a 9-point scale) using the Feelings Thermometer. The most difficult buttons were small, clear, plastic buttons, usually found in button-sewn shirts. Handling these or coming into contact with anyone wearing them was the most difficult task, which he rated 8.

By session 4, the boy successfully completed all in vivo exposure tasks listed on Table 1. Despite the success observed in the boy's approach behaviors (i.e., increasing the number of buttons manipulated), his subjective ratings of distress increased dramatically from session 2 to session 3 and continued to rise from session 3 to session 4 (Fig. 1). In session 4, the boy's subjective ratings to specific items on the hierarchy (e.g., medium, colored buttons; hugging his mother when she wears large plastic buttons) were even higher than the ratings he reported when the hierarchy was initially devised. He reported

**TABLE 1**  
Disgust/Fear Hierarchy With Child's Ratings of Distress

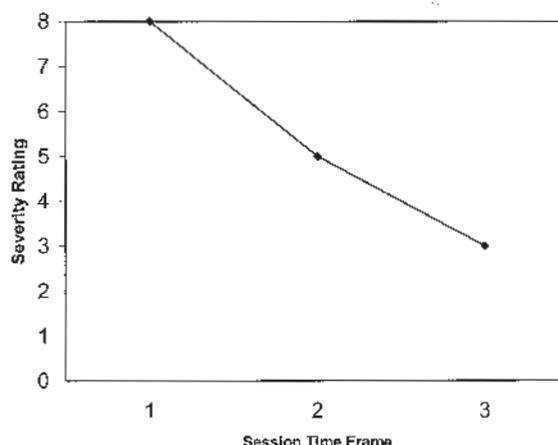
Stimuli	Distress Ratings (0-8)
1. Large denim jean buttons	2
2. Small denim jean buttons	3
3. Clip-on denim jean buttons	3
4. Large plastic buttons (colored)	4
5. Large plastic buttons (clear)	4
6. Hugging Mom when she wears large plastic buttons	5
7. Medium plastic buttons (colored)	5
8. Medium plastic buttons (clear)	6
9. Hugging Mom when she wears regular medium plastic buttons	7
10. Small plastic buttons (colored)	8
11. Small plastic buttons (clear)	8



**Fig. 1** Ratings of distress relative to manipulation of buttons in treatment exposure sessions.

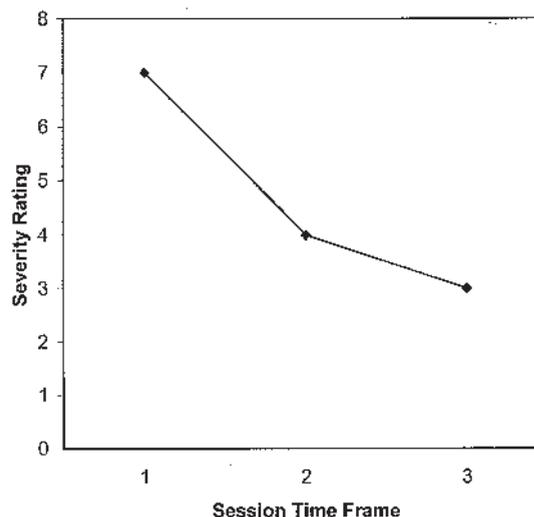
feeling more distressed about wearing/handling buttons despite the behavioral progress made. His ratings of distress were increasing, not decreasing—a phenomenon consistent with evaluative learning in that despite in vivo exposures to objects of the phobia (i.e., buttons in this case), evaluative reactions (i.e., disgust emotions) toward buttons remained unchanged and even increased. This finding was unusual given that in the treatment of specific phobias with cognitive-behavioral treatment, it is generally observed that with repeated exposures to the feared stimulus, ratings of distress decrease over time (Silverman et al., 1999).

*Disgust Imagery and Cognitions.* Further probing revealed that the boy found buttons disgusting upon contact with his body. He also expressed that buttons emitted unpleasant odors. The next seven sessions consisted of incorporating disgust-related imagery exposures and cognitions. This involved exploring with the boy the various things about buttons that he found disgusting (e.g., “buttons are gross”) and using specific self-control/cognitive strategies (see Silverman and Kurtines, 1996). He was prompted to imagine buttons falling on him, how they looked, felt, and smelled, and to elaborate on how these imagery exposures made him feel. Imagery exposures progressed from images of larger to smaller buttons. Included within the more difficult imagery exposures was cognitive restructuring. We note that although the boy indicated that buttons were “disgusting” and “gross,” even with intense probing it was difficult for him to describe exactly what about buttons rendered them disgusting and gross.



**Fig. 2** Ratings of distress in imagery exposure sessions: hundreds of buttons falling on body. Session time-frame 1 refers to “before the imagery exposure.” Session time-frame 2 refers to “midway through the imagery exposure.” Session time-frame 3 refers to “after the imagery exposure.”

Disgust-related imagery exposures and cognitions appeared to be successful in reducing the boy’s subjective ratings of distress. Figures 2 and 3 illustrate this reduction within the sessions. Figure 2, for example, shows how the boy’s rating (on the 9-point scale) decreased from 8 (immediately before the exposure) to 5 (midway through the exposure) to 3 (immediately after the exposure) when he was asked to imagine hundreds of buttons falling all over his body (Fig. 2). Figure 3 shows how his rating decreased from 7 (immediately before the exposure) to 4 (midway through the exposure) to 3 (immediately after the exposure) (Fig. 3).



**Fig. 3** Ratings of distress in imagery exposure sessions: hugging his mother with “shirt full of buttons.” Session time-frame 1 refers to “before the imagery exposure.” Session time-frame 2 refers to “midway through the imagery exposure.” Session time-frame 3 refers to “after the imagery exposure.”

### Posttreatment, 6-, and 12-Month Follow-up

Posttreatment, 6-, and 12-month follow-up assessment sessions included the readministration of the ADIS-C/P. At the posttreatment assessment session, the boy reported minimal distress about buttons, and he no longer met *DSM-IV* criteria for specific phobia of buttons. He now was wearing clear plastic buttons on his school uniform shirt, previously rated as most distressful, on a daily basis.

At the 6-month and 12-month follow-up period, he reported minimal distress about buttons and was in remission for this *DSM-IV* specific phobia diagnosis. He continued wearing clear plastic buttons on a daily basis such as on his school uniform.

### DISCUSSION

To our knowledge, this is the first report in the child psychiatric literature documenting the importance of targeting disgust in treating a specific childhood phobia. This case study complements similar work conducted on adult samples with blood-injury concerns (Hepburn and Page, 1999). Also, this is the first report in the child psychiatric literature suggesting that the interaction between phobias and disgust may be conceptualized via evaluative learning (Baeyens et al., 1996). Specifically, this boy was initially avoiding buttons (a neutral, nonthreatening object), and although the behavioral exposures were “successful” in reducing his avoidance, it was apparent (as evidenced by his concomitant, increasing distress ratings) that he felt a strong disgust for buttons. Only upon switching from behavioral exposures to disgust imagery exposures and cognitions was the specific phobia effectively diminished—a phenomenon also consistent with an evaluative learning perspective. Our focus on disgust-related imagery exposures was more successful in targeting the emotion of disgust because the images “exposed” the child directly to disgust emotions as opposed to the fear-related expo-

sure that focused on merely presenting the child with the stimulus and not addressing the associated emotions.

This case study highlights that clinicians should “remember” disgust and evaluative learning when treating certain types of childhood phobias. Future research should examine the specific types of phobias in which disgust plays a predominant role. Also, it will be important to conduct controlled group studies manipulating disgust in treatment and examine the efficacy of such manipulation, and begin to test specific theoretical mechanisms, particularly evaluative learning processes.

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