Spring 2019

Effects of a tactile safeness intervention on experiences of shame and compassion

Jamie L. Baum

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EFFECTS OF A TACTILE SAFENESS INTERVENTION ON EXPERIENCES
OF SHAME AND COMPASSION

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By Jamie L. Baum
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ABSTRACT

EFFECTS OF A TACTILE SAFENESS INTERVENTION ON EXPERIENCES OF SHAME AND COMPASSION

by

Jamie L. Baum

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Previous research has shown that tactile attachment interventions are able to mitigate experiences of social threat and facilitate compassionate and altruistic responding. Building off of those findings, this study examines the effects of touching an inanimate object - a teddy bear - upon experiences of shame, compassion, and different emotions after the induction of a shame memory. Eighty-one participants recruited from Eastern Washington University participated in this study. Participants were randomly assigned to one of two conditions, in which they held either a teddy bear or water bottle. Participants were then prompted to think of a time they have experienced shame and given three minutes to write about that experience. Participants’ amount of induced shame and other emotions were assessed, as well as experienced self-compassion, fears of compassion, and the ability to engage in psychological flexibility through the use of a variety of measures. Results showed that participants in the teddy bear condition reported significantly higher rates of experiencing positive emotions compared to participants in the water bottle condition. No other significant results were found. The results of this study could indicate that a tactile safeness intervention may increase positive emotions and may mitigate the effects of felt shame.
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Effects of a Tactile Safeness Intervention on Experiences of Shame and Compassion

In the comic strip *Peanuts*, the character Linus is often seen carrying a security blanket which he embraces in times of ridicule and stress. While clenching his blanket, Linus is able to overcome his anxiety and display remarkable judgment and wisdom regarding his and the world’s dilemmas. Can an inanimate object actually serve as a temporary secure attachment? The purpose of the current study is to explore whether certain inanimate objects with soothing physical characteristics (such as a teddy bear) can serve as a secure attachment stimulus, creating an experience of safeness and potentially decreasing experiences of shame and increasing experiences of compassion.

Caregivers and parents have long recognized the fact that many young children form intense and tenacious attachments to inanimate objects (Steier & Lehman, 2000). Children’s use of objects is especially noted when they are in stressful situations or vulnerable states (such as unfamiliar environments) or when they are upset, ill or tired. The favored objects are sometimes referred to as “security blankets,” stemming from their ability to be able to serve a comforting, anxiety-reducing function for the child (Fortuna, Boar, Israel, Abadi, & Knafo, 2014).

According to Bowlby (1969), the function of the attachment system is to protect a person from danger by assuring that he or she maintains proximity to caring and supporting others (attachment figures) who provide protection, provision, and relief in times of adversity. Furthermore, experiences of attachment security reduce the need for self-protection and self-enhancement (Mikulincer & Shaver, 2005) and allow a person to shift resources to other behavioral systems, including caregiving and perspective-taking (Mikulincer, Shaver, Gillath, & Nitzberg, 2005). When an individual feels connected and
accepted within their close relationships, they are able to begin focusing their time and energy helping and caring for other people. The positive mental representations of others that are associated with attachment security make it easier to see others as deserving of support and sympathy, motivating one to care for them (Cassidy, Stern, Mikulincer, Martin, & Shaver, 2017). Within attachment theory, the caregiving system (how people care for others altruistically - without contingent self-benefits) provides a pathway to the study of compassion. Furthermore, understanding the caregiving system creates a foundation for devising ways of increasing people’s altruistic compassion for themselves and others (Mikulincer et al., 2005).

To better understand these issues, I will explore past research on attachment theory, compassionate behaviors, Compassion Focused Therapy (CFT), the effects of touch, and the use of inanimate transitional objects in childhood. Despite some notions regarding the nature and function that object attachments serve for young children, the theoretical rationale for this developmental phenomenon is well-known but has not been widely empirically studied. In order to better understand the theoretical basis for what appears to be an important security mechanism, one must understand attachment theory at the ground level.

**Attachment Theory**

Attachment theory refers to the emotional bond that forms between a child and her or his caregivers (Ainsworth, 1978). Attachment is contingent upon the reactions of the caregiver, specifically in regard to how the caregiver responds to the child’s needs, which then become the basis of subsequent social, emotional, and cognitive development. Attachment styles are the result of early interactions with the child’s caregiver which the
child uses to understand the world and relationships throughout development (Ainsworth, 1978). Attachment style affects a child’s personality development and sense of security in the world, including the ability to form and maintain relationships (Mikulincer et al., 2005). Additionally, early attachment relationships can shape people’s basic understanding of others as helpful, neglectful, or dangerous. Securely-attached people expect that someone will be there for them in times of need, whereas insecurely-attached people are more wary about the likelihood of others being able to care for them when they are in need, and the reliability of help that may be received from others. Attachment relationships can also begin to shape individuals’ perspectives of themselves as deserving of love and care (or not). Additionally, attachment theory can provide a framework for explaining a person’s reaction to others’ needs. In support of this, past studies have shown that the sense of attachment security (expectations that others will be supportive in times of need) seems to contribute to the lending of support to a needy person (Mikulincer, Gillath, Halevy, Avihou, Avidan, & Eshkoli, 2001).

In Bowlby’s theory (1969), the reactions of a significant other to one’s needs in times of stress has major implications for understanding one’s future interpersonal relationships, affect regulation, and wellbeing. Bowlby (1973) thought that through repeated experiences within the parent-child relationship, the child will begin to form adaptive or maladaptive mental representations (internal working models) based on their past experiences, bringing those experiences into their future social relationships (Bretherton & Munholland, 2016). Children who are consistently exposed to sensitive relationships will develop a secure attachment to their caregivers and this relationship model will then be carried out through adulthood, reducing their risk of developing social
and emotional disorders (Madigan, Brumariu, Villani, Atkinson, & Lyons-Ruth, 2016). A sensitive relationship is one in which the child’s needs are consistently met by the caregiver and the child receives attention and care in times of distress. From this securely attached relationship, the child will continue to form sensitive relationships with others, knowing that they will be cared for and appreciated in these new relationships.

However, if the child experiences uncertainty about the attachment figure’s availability to respond to his or her needs, the child will be prone to developing insecure attachments, which in turn increase the risk of developing behavioral problems and cognitive disruptions. For example, behavior problems can lead to diagnoses of conduct disorder and oppositional defiant disorder, characterized by defiant behavioral outbursts, destruction of property and harm to self and others (Fortuna et al., 2014). Cognitive problems in insecurely attached children can lead to an increase in symptoms and diagnoses of depression and anxiety (Madigan et al., 2016). By middle adulthood, the child’s social interactions have expanded to include friends, teachers, and other non-caregiving attachment figures. The foundation for processing ongoing internal and external relational experiences is thought to be influenced by the child’s attachment to the parent. This dominant theoretical approach to psychopathology has been a mainstay of developmental research for the last half century.

**Compassion Focused Therapy**

One psychotherapy model that draws heavily upon attachment theory is Compassion-Focused Therapy (CFT), developed by British psychologist Paul Gilbert (2009). Gilbert (2009) describes the core values and basis of CFT as, “an integrated and multimodal approach that draws from evolutionary, social, developmental, Buddhist
psychology, and neuroscience. One of its key concerns is to use compassionate mind training to help people develop and work with experiences of inner warmth, safeness and soothing” (Gilbert, 2009, p. 199). CFT helps clients learn to engage their struggles and those of others in warm, accepting, and encouraging ways to help themselves feel safe and secure in working with challenging circumstances and difficult life problems (Kolts, 2016).

There are three emotion regulation systems proposed by CFT, organized according to evolutionary function: the threat, drive, and safeness systems (Gilbert, 2009). Within the threat system, we experience emotions like fear, anger, and anxiety that help us identify and respond to threats. Second, the drive system incorporates experiences like excitement and activation, which helps focus us on goals and rewards us for achieving them. Lastly, the safeness system is there to regulate the emotions that help us feel safe, peaceful, serene, and calm. Many clients seeking psychotherapy seem to live in a world of threat, having threat systems that are over-activated throughout their day-to-day lives (Kolts, 2016). This has implications for their cognitive functioning, as threat emotions tend to narrow the individuals’ attention, thinking, and mental imagery onto perceived sources of threat, which limits their ability to think broadly and flexibly (Gilbert, 2009). In attachment theory, threat automatically activates attachment-related needs for care and security; such activation can in turn interfere with helping others who are in need because the person is more concerned with obtaining security and care for the self (Cassidy et al., 2017).

Gilbert hypothesizes that the safeness system, which assists in the regulation of threat experiences through the action of neurochemicals such as oxytocin, is poorly
accessible in people with high shame and self-criticism, for whom threat experiences can dominate their inner and outer worlds (Gilbert, 2009). Therefore, for such individuals it is important to find interventions that can facilitate the regulation of the threat by helping them find ways to stimulate the safeness system (Gilbert, 2009).

As mentioned above, if an individual has a secure attachment background, experiences of safeness are typically fueled through warm connections with others which, as Gilbert suggests, is how humans evolved to feel safe (2009). Unfortunately, many individuals present with histories of maladaptive attachment styles and interpersonal trauma that can condition them to feel unsafe and vulnerable in close relationships. This problem provides the impetus for the current project – the goal of discovering a way to help make the safeness system accessible for individuals who have learned to associate human contact with threat. By being able to activate the safeness system through contact with a soothing inanimate object, I propose that individuals who suffer with distress in human contact relationships may then be able to create experiences of safeness in themselves that will allow them to regulate experiences of threat, and act courageously in addressing life challenges as they work to then cultivate the ability to access soothing experiences through interpersonal connection (for example, within the therapeutic relationship).

In the 1970’s, Mary Ainsworth developed a protocol for measuring the attachment formed between mother and infant. This protocol is known as the Strange Situation Procedure (SSP), which relies on the direct observation of a mother (or “secure base”) and her infant in three different stages: mother and baby alone in the room, baby alone in the room, and baby and stranger alone in the room (Madigan et al., 2016). The label of a
“secure” attachment was given when the child is soothed by the supportive attachment figure’s (mother or “secure base”) efforts to respond to his or her needs and cues. The label of an “insecure” attachment was given when the child’s inclination is to expect rejection or inconsistency when bids for intimacy and proximity are initiated. In the securely attached relationship one would expect the child to cry for the mother when she leaves the room and then be comforted and soothed when the mother returns, allowing the child to then resume playing throughout the room. In an insecure attachment, the child might not even notice the mother has left, or they might notice she has left and begin to cry, but when the mother comes back the child is not able (or wanting) to be soothed by the mother. In many cases, the insecure child will not begin to play again, not letting his or her mother out of their sight, presumably because of fears that they might again be left.

This is similar to one goal of the therapeutic relationship in CFT (Kolts, 2016). Here the therapist seeks to embody the role of a secure base in the form of a secure attachment, which offers the client a relational context of safeness from which to explore difficult emotional experiences to which they can return when they feel overwhelmed, similar to the mother in the SSP. Research has shown that the contextual activation of the sense of a secure base leads people to respond similarly to people who have a secure attachment style (Mikulincer et al., 2001). In therapy, the idea is that by being able to experience a secure base (despite the client’s natural attachment style), they can begin to bring the safeness system “on board,” leading to a reduction in the amount of stress one feels, and leading to a more reflective and open mindset (Bowlby, 1973; Sroufe & Waters, 1977; Wallin, 2007).
The Caregiving System and Compassion

Although attachment theory mainly deals with others’ responses to one’s own needs, Bowlby (1969) argued that this theory might be able to explain one’s reaction to others’ needs as well. According to Bowlby, these reactions are a part of the caregiving system. The caregiving system is designed to provide protection and security to those who are either dependent or in need and is guided by compassionate, altruistic motives (Mikulincer et al., 2001). The caregiving system shares two components with attachment theory: distress regulation and the need for sensitive care. This means that when people feel as if there is help when they are in distress (in the language of CFT, are able to access experiences of safeness), they are more likely to lend a hand when they see someone else in need of help (Mikulincer et al., 2001). When this security is not experienced, it inhibits the activation of other behavioral systems, such as the caregiving system.

Research indicates that attachment security is associated with increases in compassionate responses to needy individuals (Mikulincer et al., 2005). Within CFT, compassion is defined as the sensitivity to suffering (others, and even our own), combined with the motivation to help alleviate the pain and also prevent it in the future (Gilbert, 2009). Both CFT and attachment theory see compassionate and altruistic behavior as being rooted in an evolved caregiving system, serving the function of facilitating the care of infants and protecting individuals within the same family or tribe with whom the individual shares genes. A key component of the caregiving system is the adoption of the empathic stance toward others’ suffering. One can view the caregiving system as being activated by the presence of a needy person and its aim being to alter the needy person’s condition without inherent benefits to the self (Mikulincer et al., 2005).
Understanding this system provides a foundation for devising ways of activating and increasing compassion.

The caregiving system is more likely to become salient when an individual is secure enough to allow for a compassionate approach to another person’s needs. When an individual feels that there is not help available when they need it, they will tend to be less likely to lend help to others – both because they have not seen such helping behavior modeled by their own caregivers, and perhaps because they are unwilling to use the resources that they might need when they are under threat in the future. At such times of threat, people are likely to be so focused on their own needs that they lack the mental resources to attend empathically to others’ distress and to engage in altruistic and compassionate behavior. Alternatively, securely attached people can see others as sources for support and security but at the same time as suffering human beings who have important needs and therefore deserve support and attention as well. Attachment security is seen as not activating the caregiving system directly but instead providing a solid and stable foundation for compassionate behavior that is truly aimed at benefiting another person, even when there is no egoistic reason for helping (Mikulincer et al., 2005). For example, Westmaas and Silver (2011) found that adults who scored high on attachment avoidance were less supportive toward a person with cancer than adults who score low on this dimension. In addition to the mechanisms described above, it is also suggested that the experience of attachment security reduces the need for self-protection and self-enhancement, which allows the individual to shift resources to other systems like the caregiving system, which is seen as the key mechanism in altruistic and compassionate behaviors (Mikulincer et al., 2005).


**Attachment Security and Reactions to Others**

In 2001, Mikulincer et al. conducted two studies examining attachment security and reactions to other’s needs. The first study investigated the effects of both global attachment and the contextual priming of attachment security on empathy and personal distress reactions. The second study assessed the strength of empathy and personal distress responses, examining the effects of attachment security on altruistic and egoistic caregiving behaviors. In study one, participants were assigned to one of three conditions: an attachment security prompt (secure attachment priming condition), a neutral emotionally-irrelevant story (neutral priming control), or a comic story designed to prompt a positive-affect (positive-affect priming condition) (Mikulincer et al., 2001). Participants were primed by being exposed to a picture depicting the availability of supportive others while in a distressing situation. In the attachment security condition, participants received a picture of a person being helped by another person. In the positive affect condition participants received a picture of a dog wearing a colorful pull over and a wool hat and in the neutral priming condition, participants received a picture depicting a country view. The participants then read a story about a needy person and completed a self-report scale tapping into their empathy and personal distress reactions to the story. Participants also completed a measure of attachment style before and after the task (Mikulincer et al., 2001). Findings revealed that the priming of attachment-security led participants to report higher levels of empathy and lower levels of personal distress in reaction to a needy person. Secondly, although the priming of positive-affect seemed to contribute to a decrease in personal distress, it did not significantly contribute to higher rates of empathy. Additionally, participants that scored high in attachment-anxiety
reported significantly higher levels of personal distress (Mikulincer et al., 2001). This study suggests that the contextual activation of the sense of attachment security led participants to react to others' needs with a more empathic outlook and lower levels of personal distress. Overall, attachment security seems to facilitate higher levels of empathy and lower levels of personal distress.

However, because Study 1 used priming techniques that might have activated conscious thoughts about helping and caring which could have led participants to respond in socially desirable ways, these researchers conducted another study in which participants were not aware of the primed representations. All conditions were primed through a computerized 60-trial lexical decision making task, where they were asked to respond whether the string of letters on the screen was a word or not. Attachment security was primed through the presentation of words that are core components of a secure working model like “love,” “closeness,” and “support.” Participants in the positive affect condition were presented with words that have a positive connotation but no direct link to attachment themes, such as “happiness,” “honest,” and “success.” Participants in the neutral priming conditions received words that have no positive or negative connotations and no link to attachment such as “office,” “table,” and “boat.” In this study, instead of using self-report scales to assess the reaction of the participant to others’ needs, they used a more idiographic approach in which participants were asked to recall a personal event where they witnessed another person in distress and then asked to freely describe how they responded to this event in an open-ended format. Participants were again divided into three conditions: an attachment-security priming condition, a positive-affect priming condition, and a neutral priming condition. Participants then rated their mood, were asked
to recall a personal experience in which someone was in need, and asked to write about how they responded to the situation. The results revealed that participants in the attachment-security priming condition were more likely to express empathy compared to the participants in the neutral priming condition. The priming of positive affect and reported mood did significantly contribute to less personal distress yet, it did not significantly contribute to higher ratings of empathy. Continuing, high scores in attachment avoidance and anxiety were associated with lower amounts of expressed empathy and higher rates of personal distress. Even when the participants were not aware of the activation of security representations, the activation of attachment security still led participants to recollect memories in which they responded with higher empathy and lower personal distress.

Overall, these studies suggest that the contextual activation of attachment security can lead to higher reports of empathy and lower reports of personal distress without regard to variations in current attachment anxiety or avoidance style scores (Mikulincer et al., 2001). This finding suggests that a temporary activation of the sense of attachment security can lead people who are chronically insecure to react to others’ needs in similar ways to a person who has a more secure attachment style. Given this, I propose that similar findings will result if we cue security activation using a nonhuman attachment stimulus with soothing physical characteristics, such as a teddy bear.

**Shame versus Guilt**

For many years there was little distinction between shame and guilt. Even in current research, shame and guilt are often mentioned under the same category known as ‘moral emotions,’ which describe responses to socially undesirable behavior (Covert,
Tangney, Maddux & Heleno, 2003). However, shame and guilt are two very distinct self-conscious emotions that arise in response to failure or misbehaviors between interactions of people. When distinguishing between shame and guilt, researchers have found that the focus is on the content and/or structure of the electing events, the notion being that some situations will tend to lead to shame and others will tend to lead to guilt (Tangney, 1996). Shame involves experiences of perceived scrutiny (typically by others) in which negative evaluations are directed toward the self, not the wrongful behavior (Covert et al., 2003). In shame, the individual experiences himself or herself as bad or unwanted (rather than relating to the specific behavior as bad and unwanted). Shame is typically accompanied by a sense of exposure in front of a real or imagined audience, a feeling of shirking or being small, and a desire to run from or hide to allow the individual to escape the problematic situation.

In contrast, guilt involves a negative evaluation of a behavior performed by the individual, rather than of the individual him- or herself. With guilt, the individual does not view himself or herself as a ‘bad person’ for having performed the wrongful behavior; rather, it is the behavior that is seen as bad and wrongful. Unlike shame, guilt may be something that remains a secret, with no one else knowing the breach of social norms or the individual’s responsibility for the performed act (Tangney, 1996). Therefore, guilt distinguishes between the self and the behavior, with guilt impacting the behavior (for example, by prompting a restorative action like apologizing) and not the core identity or self-concept of the individual. Shame also tends to be a more a painful experience, as it is the self that is being scrutinized and negatively evaluated overtly by others. This scrutiny can lead to a shift in self-perception that is accompanied by a sense of inadequacy,
worthlessness, and powerlessness (Covert et al., 2003), and can be accompanied by intense emotional pain. Shame has also been linked with various forms of psychopathology and emotional disturbances (Heinze, 2017).

**Impacts of Shame on Behavior**

I am interested in researching how experiences of shame affect an individual’s ability to express and experience compassion for others, as well as for the self. Research has shown that because shame involves an intense self-focus, the person who is experiencing shame is likely to have difficulty thinking effectively and appropriately in finding solutions to interpersonal problems (Covert et al., 2003). More importantly, a person experiencing shame may hold a set of beliefs about themselves that makes it difficult for them to use the adaptive skills that they already have. In addition, a person experiencing shame may forget or discount past successes in interpersonal problem solving that ordinarily would come up and contribute to their sense of core identity. This can be related to research findings on mood-congruent memory and attentional biases, in which an individual is more likely to recall and attend to events that are related to the mood and emotions that they are currently experiencing (Tolin, 2016). For example, when an individual experiences shame, they are more likely to think of times where they were inadequate and unable to succeed, leading them to be more likely to quit or shut down when presented with a problem. This can prompt the motivation for the individual to withdraw from problematic situations rather than persisting in trying to solve the problem (Covert et al., 2003).

The impact of a shame-based negative view of the self not only leads to an increased vulnerability to develop psychopathology, but also leads to the inability to
generate feelings of self-directed soothing, warmth, and care (Gilbert, 2000; Gilbert & Irons, 2009). Individuals with a high shame and self-criticism tend to report negative beliefs about compassion, which are translated into fears, resistance, and avoidance of compassionate feelings and behaviors toward themselves and toward others. (Gilbert, 2009). Fearing compassion involves the resistance and tendency to avoid experiencing compassionate feelings for the self and others (Xavier, Pino Gouveia, & Cunha, 2016). Additionally, individuals experiencing fears of compassion might also involve trying to avoid being the recipient of compassion from others (Gilbert, McEwan, Matos, & Rivis, 2010). Overall, it seems like individuals who are fearful of compassion and compassionate behavior may have the social safeness and soothing system (from the CFT approach) underdeveloped. They may find it hard to feel reassured and soothed/calmed in difficult situations in their lives (Xavier et al., 2016), potentially interfering with their ability to effectively engage with and manage such difficult situations. As individuals with shame may struggle to experience safeness in connection with other human beings (for example, within the therapeutic relationship), it is important to find ways to help them initially be able to access soothing and safeness in order to work with both shame and the challenging experiences they face in their lives. In this study, I sought to explore whether contact with an inanimate object with soothing physical properties (a teddy bear) might enable individuals who are experiencing shame be more able to access the safeness and soothing system, hopefully facilitating them to have a more compassionate outlook for themselves in others.
**Transitional Objects**

Transitional objects are entities that can activate a temporary experience of emotional support. Many times, these objects are a substitute for the child’s attachment figure, who is typically relied upon for comfort and security. In 1953, Winnicott introduced the term *transitional object* to describe blankets, teddy bears, and other (usually soft or cuddly) objects which acquire such emotional significance to a child that their presence has a unique soothing effect in times of stress or fear (Steier & Lehman, 2000).

Transitional objects are most commonly objects made of soft and huggable materials, lending a tactile sensation of safeness and security. One of the most common transitional objects is a stuffed animal, such as a teddy bear. By using an object with traits such as fuzziness and softness that are associated with “cuddliness” and “warmth,” it is thought that people are more likely to anthropomorphize the object - more likely to attribute human-like characteristics (such as having internal emotional states like, kindness, compassion, and tenderness) to the nonhuman object. Over the years, the design of teddy bears has evolved, making them more appealing to young children. They now have a larger forehead and shorter snout then they did when they were first made in the 1930’s (Tai, Zheng, & Narayanan, 2011). For this reason, it has been suggested that teddy bears are suitable inanimate objects that may serve as substitutions for human physical touch, which is needed in the formation of secure attachments (Tai et al., 2011).

While the importance of transitional objects in children has been long recognized by child psychologists, it has taken longer to recognize their transition and significance in adults (Bell & Spikins, 2018). Adult attachment objects typically differ in physicality
from those seen in children, however they seem to provide at least some of the same effects. Transitional objects make us feel secure and safe because of their emotional significance behind them and the physical sensations that they provide. Adults typically tend to develop a different and more dynamic relationship to cherished objects. Some adult attachment objects are similar to a child’s transitional object, embodying qualities of soft and huggable material like a blanket. However, many adult attachment objects are made of hard and highly portable or wearable material like a sliver bracelet or broach. Such items are less soothing because of their physical characteristics and instead desired for their emotional significance in the individual’s life (Bell & Spikins, 2018). Despite the difference in the objects from childhood to adulthood, object attachment results from desire for emotional security, which is not always filled by other people – especially in individuals who have an insecure attachment style.

The current study will focus not on the emotional significance of transitional objects, but upon the potential effects of soothing physical characteristics upon individuals who touch soft physical objects (such as a teddy bear). The sheer effect of touch on the human skin is powerful. Unintentional touch, even between two strangers, has been shown to increase prosocial behaviors. For example, customers who are touched by a server tend to give larger tips (Crusco & Wetzel, 1984). These findings are consistent with developmental and neuropsychological evidence that suggests humans are hardwired to respond to touch in a compassionate, positive manor (Seger, Smith, Percy, & Conrey, 2014). A recent study by Levav and Argo (2010) showed that even a small amount of contact such as a pat on the back could increase people’s sense of security.
When infants express discomfort through crying, caregivers may attempt to alleviate the child’s distress through physical touch such as holding, rocking and patting (Bowlby, 1973). The nature of physical touch is not limited to humans but is also seen in primates. In Harlow’s infant monkey experiment in 1958, two groups of rhesus monkeys were separated from their mothers and assigned to either a cloth surrogate mother without food and a wire mother with food or a cloth surrogate mother with food and a wire mother without food. In both cases, the baby monkeys consistently chose the cloth mother over the wire mother whether or not it provided them with food. The fact that the cloth mother could provide comfort and a felt experience of security seemed more important to the baby monkeys than whether the mother that could provide food (Harlow & Zimmermann, 1959). It seems particularly relevant to the current study that in the Harlow and Zimmerman experiments, the “cloth mother,” while not a living organism, was able to provide the monkeys with an experience of attachment security that both helped them regulate threat and which promoted exploration and courage in the face of both overt threats and novel environments.

In one study (Tai et al., 2011), a teddy bear was used to stimulate a secure attachment to increase the levels of compassion that an individual felt toward a stranger. Tai et al. (2011) sought ways to alleviate the pain of social exclusion, in hopes of increasing prosocial behavior. Previous studies have shown that the physiological mechanisms when people endure social pain specifically caused by exclusion are similar to the mechanisms that are activated in physical pain (MacDonald & Learly, 2005; Panksepp, 1998). Social exclusion activates the dorsal anterior cingulate cortex, which is the same brain region that responds to physical pain (Einsberger, Lieberman, & Williams,
This means that the brain is interpreting physical pain and social pain caused by exclusion in the same areas of the brain. These findings suggest that it might be possible to use the same mechanisms that alleviate physical pain to alleviate the pain of social exclusion due to the overlap between the physical and the social pain systems in the brain (Tai et al., 2011). For example, Williams and Bargh (2008), discovered that the tactile sensations of physical warmth can activate concepts or feelings of interpersonal warmth. Interestingly, when an individual is socially excluded, they experience a state of coldness, during which they actually rate the room temperature to be significantly cooler compared to individuals that were in the socially included group. In studying this phenomena, Tai et al. anticipated that participants who are excluded might initially feel cooler but may subsequently experience a bodily sensation of tactile warmth upon touching a teddy bear, which Tai et al. hypothesized would decrease the amount of pain they experience from being socially excluded (2011).

Across two studies, Tai et al. (2011) examined how touching a teddy bear impacts the effects of social exclusion on prosocial behaviors. They argued that touching a teddy bear would increase the positive emotions of excluded individuals and that this in turn would lead to more prosocial behavior. In the first study, Tai et al. (2011) manipulated an individual’s experience of exclusion by giving them false feedback on the future course of their social lives (e.g., “You are the type of person that will end up alone later in life.” or “You are the type of person who will have rewarding relationships throughout life.”). Then, in the “touch” condition, they encouraged their participants to touch and hold a teddy bear. Following this manipulation, participants were then asked to volunteer for extra experiments, allowing them to volunteer for up to three additional experiments.
Results showed that the participants in the social exclusion condition who touched the teddy bear exhibited more prosocial behavior by volunteering for significantly more additional experiments as compared to the participants in the exclusion condition who did not touch the teddy bear.

In Study 2, instead of giving the participants potential exclusion, the researchers manipulated actual exclusion. Participants received feedback about being chosen to be in a group to work with others or being the only one who was not chosen to be in the group. After the news was delivered, half of the participants were given a teddy bear to hold and half were not. Participants were told to evaluate the consumer product (the teddy bear) and rate its appeal on various filler items. In the “touch” condition, experimenters placed the bear in the participants’ laps and in the “no-touch” condition the bear was placed at arms-length from the participants so that they were unable to touch it. Following this, participants took part in another study on decision-making, where they were given $10 which they could divide up any way they chose between themselves and another participant – who had either included or excluded them into their group. Tai et al. (2011) then measured the participant’s emotion with an open-ended question, probing the reason for their decision on splitting up the money. This open-ended format allowed researchers to see the participants’ thought process and emotional reactions behind their decisions without threatening the internal validity of the study. They then submitted the essays to a linguistic analysis program using a word-based language approach that compared the words in a text document to an internal dictionary that analyzed the degree of positive emotions. Tai et al. (2011) found that positive emotions mediated the relationship
between touch (holding the teddy bear) and prosocial behavior (splitting the money) for the exclusion group.

Across the two studies, Tai et al. (2011) found that excluded participants who touched a teddy bear behaved more prosocially compared to the excluded participants who did not touch the teddy bear. However, touching the teddy bear did not significantly increase prosocial behaviors for participants who were in the included and control conditions. The two studies provide converging evidence that touching a teddy bear (or a soft, cuddly object which provides safeness) alleviates the negative effects of social exclusion, which increased the participant’s prosocial behavior. From a CFT perspective, this finding would be seen as reflecting the ability of holding the teddy bear to stimulate a safeness response that counteracted experiences of threat caused by social exclusion, countering the inhibitory effects of social exclusion on prosocial behavior.

The Current Study

Past research has addressed how security attachment priming interventions using pictures, words, and tangible objects can increase an individual’s ability to engage in compassion, creative thinking, and mitigate the uncomfortable effects of social exclusion leading to increases in prosocial behavior. However, there is a gap in the research on how to facilitate soothing in individuals impacted by shame, particularly those with life histories that have led them to associate interpersonal closeness with threat, which could initially impair their ability to experience relational safeness with a therapist. This study allows us to examine how an inanimate object might help to bridge this gap, for such individuals to learn to potentially experience the benefits of contextually-prompted attachment security that is not contingent on their ability to receive it from another person,
but instead through a soothing contact with an inanimate object. The current study will examine whether touching a teddy bear following exposure to a shame prompt can decrease fears of compassion and shame, facilitate positive emotional experiences, and increase self-compassion and mental flexibility. I predicted that the participants in the teddy bear condition would experience lower amounts of shame felt after the shame writing task, as well as lower fears of experiencing and offering compassion as compared to a control condition. Additionally, participants in the teddy bear condition are predicted to report higher levels of psychological flexibility, self-compassion, and positive emotional experiences as compared to the control condition.

**Method**

**Participants**

Participants included 81 undergraduates at Eastern Washington University (64 women, 16 men, and 1 unreported), ranging from the ages of 18-51 years, with an average age of 22.19 years, $SD = 5.37$. Participants in this study received extra course credit in participating psychology courses. The participants were randomly assigned to one of two experimental conditions, with 38 participants in the teddy bear condition and 43 participants in the water bottle control condition. In terms of ethnicity, 70.4% of participants identified as White, 8.6% as Asian, 2.5% as African American, 14.8% as Latino/Hispanic, and 1.2% as multiracial/other. All participants had at least 12 years of education.
Materials

Measures

The Experiences in Close Relationships Scale (ECR).

This 36-item scale taps into the dimensions of anxiety and avoidance that the participant feels in close relationships (Mikulincer & Shaver, 2017). Participants rate the extent to which each item related to their feelings in close relationships on a 7-point Likert-type scale, ranging from 1 (disagree strongly) to 7 (agree strongly). Eighteen items tapped into attachment anxiety (e.g., “I worry about being rejected or abandoned,” “I worry a lot about my relationships”) and 18 items tapped into attachment avoidance (e.g., “I get uncomfortable when someone wants to be very close to me,” “I avoid getting too close to others). The ECR has demonstrated good reliability and validity across diverse samples (Brennan, Clark, & Shaver, 1998), for the current study the Cronbach’s alphas are $\alpha = 0.86$.

Positive and Negative Affect Schedule-Gratitude Adjective Scale with joy state measure and shame (PANAS-GAS).

This measure is a 32-item self-report measure of state affect. Participants rate the extent to which each item relates to their current emotional state on a 5-point Likert-type scale ranging from 1 (very slightly or not at all) to 5 (extremely). The instrument is divided into two 10-item scales measuring positive and negative affect (Watson, Clark, & Tellegen, 1998). Positive affect refers to the extent to which a person feels positive emotions such as enthusiastic and active (e.g., “interested”, “proud”), whereas negative affect refers to which a person experiences negative emotions such as anger or shame (e.g., “hostile”, “distressed”). Added to this scale are 3 items from the Gratitude Adjective
Scale because there are no items related to gratitude on the short form of the PANAS (e.g., “grateful”, “thankful” and, “appreciative”) (McCullough, Emmons, & Tsang, 2002). Additionally added to this scale are 2 items from the State Joy Scale (e.g., “joyful” and “delighted”), because the PANAS has been criticized for only including items related to positive and negative activation states (Watkins, Emmons, Greaves, & Bell, 2017). There are 3 items added to measure shame state, (e.g., “humiliated”, “disgraced”, and “blameworthy”). Lastly, two items are repeated to test for reliability (e.g., “amazed” and “ashamed”). For this study, the PANAS-GAS demonstrated good psychometric properties with a Cronbach’s alpha as $\alpha = 0.87$. The Cronbach’s alpha for the shame state measure is $\alpha = 0.70$.

**Acceptance and Action Questionnaire-II (AAQ-II).**

The AAQ-II is a 7-item self-report measure of psychological inflexibility, which has been used to measure experiential avoidance (Bond et al., 2013). This scale assesses tendencies to make negative evaluations of private events and unwillingness to be in contact with private events (e.g., “My painful experiences and memories make it difficult for me to live a life that I would value”). Participants rate how each statement applies to them on a 7-point Likert scale ranging from 1 (“never true”) to 7 (“always true”). The scale has demonstrated good psychometric qualities including an internal consistency in this study with a Cronbach’s alpha of $\alpha = 0.92$.

**The Fear of Compassion Scale (FOCS).**

The FOCS is composed of three scales that assess fears and reluctance about directing compassion toward the self, receiving compassion from others, and experiencing and expressing compassion toward others (Gilbert, McEwan, Matos, &
Rivis, 2010). Each item is rated on a 5-point Likert-type scale from 0 ("don’t agree at all") to 4 ("completely agree"). Fear of expressing compassion for others is composed of 10 items (e.g., “I fear that being too compassionate makes people an easy target.”), fear of responding to the expression of compassion from others is composed of 13 items (e.g., “I fear that when I need people to be kind and understanding they won’t be.”), and fear of expressing kindness and compassion towards yourself is composed of 15 items (e.g., “I fear that if I am more self compassionate I will become a weak person.”). The Fear of Compassion Scale has demonstrated good reliability and validity across diverse samples. The Cronbach’s alphas for this scale in this study are $\alpha = 0.95$ for fear of compassion for self; $\alpha = 0.90$ for fear of compassion from others and $\alpha = 0.87$ for fear of compassion for others.

**Self-Compassion Scale – short form (SCS-Short).**

This scale is composed of 12 items that assess self-compassion through a positive and negative component. The positive components gather self-kindness common to mindfulness and humanity subscales (e.g., “When I fail at something important to me I try to keep things in perspective”), whereas the negative components are comprised of self-judgment and isolation (e.g., “When I am feeling down, I tend to feel like most other people are probably happier than I am”). Participants rate their responses on a 5-point Likert scale, ranging from 0 ("Almost never") to 5 ("Almost always"). The current study’s Cronbach’s alpha is $\alpha = 0.61$. 
Physical Stimuli

*Teddy bear.*

The experimental stimulus used was a 20-inch UniPak Designs© brand teddy bear, chosen for its soft and cuddly physical characteristics that participants in the teddy bear condition were encouraged to embrace.

*Water bottle.*

The control stimulus used was a 12 inch black, metal, ThermoFlask© brand water bottle that the participants in the water bottle condition were encouraged to hold and examine.

Dependent Measure

*Shame prompt.*

Participants were instructed to think a time they have experienced shame. They were then given three minutes to write about this experience. The same prompt read:

“Think about an experience from your life that triggered feelings of shame in you. Sometimes we talk about shame and guilt like they’re the same thing, but they’re actually very different. Guilt is when we feel bad about something that we’ve done, and want to fix it. We may feel guilty about things we’ve done (on purpose or on accident) that might have hurt other people or caused embarrassment. With guilt, the focus is on our behavior and wanting to make things better – for example, by apologizing.

Shame is a bit different. Shame may involve the same sort of behavior – us doing something purposefully or accidentally that harms or embarrasses someone else – but with shame, we can feel like a bad person for having done that behavior. The focus of
shame is on feeling bad about ourselves instead of the behavior being bad. Shame can also be linked with feeling like others will see us as bad, and can involve a strong desire to hide or escape from the situation.

Take some time to think of a time you have experienced shame. Once you have such an experience in mind, you’ll have three minutes to write about this experience in the space below the prompt.

It’s important that you know no one will ever see or read what you’ve written about this shame experience. At the end of this study you’ll drop this paper off in the shredder by the door as you leave the room.”

**Procedure**

After signing the consent form, all participants were read a story about a co-occurring marketing study designed to get consumer’s opinions about everyday objects, and were then given a teddy bear to embrace or a metal water bottle to hold. Participants were randomly assigned to one of these two conditions using a coin flip conducted prior to their arrival for the study. In both conditions, participants were encouraged to embrace the object throughout the study, examining the color, temperature, and weight of the object. Participants in the teddy bear condition were also prompted to examine how cuddly, appealing and soft it is, whereas participants in the water bottle conditions were prompted to examine how comfortable it is to hold or carry. The teddy bear condition script read:

“To secure funding for the study, we’ve partnered with a marketing firm to get consumers’ opinion on everyday objects. As a part of this, we’ll ask you to hold onto this teddy bear for the rest of your time with us. Please embrace the teddy bear as you
complete the study. Give it a good squeeze. Examine how cuddly, appealing and soft it is, and notice it’s size, temperature, color, and weight. Your opinion and likeliness to purchase this product will be recorded at the end of the study.”

The water bottle condition script read:

“To secure funding for the study, we’ve partnered with a marketing firm to get consumers’ opinion on everyday objects. As a part of this, we’ll ask you to hold onto this water bottle for the rest of your time with us. Please examine the water bottle as you complete the study. Take ahold of it. Examine how comfortable it is to hold/carry, as well as it’s temperature, size, weight and color. Your opinion and likeliness to purchase this product will be recorded at the end of the study.”

Participants were then provided the Experiences in Close Relationships (ECR) scale to measure their current attachment style. Upon finishing and handing in the ECR, participants were prompted to think of a shame experience from their lives (See dependent measure – Target for Felt Shame - for prompt), and were then instructed to write about this experience for three minutes. In an attempt to control for fears that others would learn about their shaming experience by seeing their writing, participants were instructed to place their shame writing in a paper shredder on their way out of the lab upon completing the study.

After the shame prompt, participants’ were given a questionnaire packet to complete containing the PANAS-GAS, the AAQ-II, FOCS, the SCS, and a form assessing demographics. Questionnaires were ordered to prioritize the variables of greatest concern and to minimize potential order effects. Afterwards, participants were debriefed and given the chance to ask any questions or voice any concerns they had
throughout the process. All procedures were approved by Eastern Washington University’s Institutional Review Board.

**Results**

To prepare for statistical analysis, data were screened for skewness, kurtosis, and outliers using Levene’s Test, with all data falling within the acceptable range. Ten cases were excluded from analysis due to disparities in redundant items indicating a high likelihood of random responding. Data was excluded when participant’s responses were more than one value above or below each other on the repeated item. Testing for normality using the Kolmogrov-Smirnov test revealed significant violations of normality in a number of the dependent measures, specifically the PANAS-GAS positive affectivity, negative affectivity, joy state affectivity, and shame scales; AAQ-II total score; FOCS fears of compassion for others, fear of compassion to self; and SCS self kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification subscales (see Table 1).

To account for this, nonparametric Mann-Whitney U tests were conducted in the analyses involving these variables (see Table 3). Results revealed that participants’ scores on the PANAS-GAS positive affectivity scale were significantly higher in the teddy bear condition ($\text{Mdn} = 46.16$) than in the water bottle condition ($\text{Mdn} = 35.38$; $U = 583.00$, $z = -2.07$, $p = .038$, $r = -.23$) (see Figure 1). No significant group differences were observed with any of the other dependent variables using this test.

Independent t-tests were conducted to examine group differences in dependent variables meeting the assumption of a normal distribution (ECR attachment anxiety and avoidance; PANAS-GAS gratitude; FOCS fear of compassion from others, and SCS total
score, see Table 2). No significant differences were observed between groups for any of these variables.

Contrary to this study’s hypotheses, no significant differences were observed in overall ratings of felt shame, as reflected by question number 16 on the PANAS-GAS. Although, visual inspection of participant responses to the item revealed an interesting pattern of results, featured in Figures 2 and 3. The teddy bear condition had a total of three (7.9%) participants rate feeling “extremely shameful” following the shame-writing exercise (see Figure 3), whereas the water bottle condition had a total of 10 (30.3%) participants rate feeling extremely shameful after the shame induction (see Figure 2). Despite these results falling short of significance ($p = .187$, see Table 3) it is interesting to note that less than one-third as many participants in the teddy bear group indicated feeling extremely shameful following the writing assignment as were observed in the water bottle group.

This could imply that, although small amounts of shame may not be affected by a tactile safeness intervention, the soothing physical sensations may soften intense feelings of shame.

**Discussion**

This study examined how contact with an inanimate object with soothing physical qualities affects an individual’s experience of shame, compassion, creativity, and flexible thinking following exposure to a shame prompt. In therapy, many clients present with histories of incredibly shameful experiences and it is important for such clients to learn how to regulate their threat arousal while working with such experiences. Additionally, a major focus of therapy is for the therapy room to become a safe place from which the
client can work with difficult emotional experiences. For individuals who have learned to associate closeness with other people with threat, this task can become incredibly difficult, as they may at least initially have difficulty feeling safe in the relationship with their therapist. This study sought to investigate a potential way for such individuals to access experiences of safeness that did not involve an affiliative connection with another human being. The goal is to help them connect with experiences of safeness even if they struggle to access such feelings within interpersonal relationships (which, of course, would be a goal of therapy), particularly in helping them work with shameful experiences.

The results of this study were mixed as they relate to the experimental hypotheses. As predicted, results showed that participants who held the teddy bear felt more positive emotions than did participants who held the water bottle. These results suggest that the tactile stimulation of a soft, warm and cuddly object can facilitate positive emotional states, even when the individual has been asked to concentrate and focus upon potentially painful shame memories. However, no significant differences were observed between the water bottle and teddy bear groups in regard to differences in fears of compassion (towards self, toward others, or from others), self compassion, or psychological flexibility. Additionally, although no significant differences were observed between groups in the shame state measure or shame item (PANAS-GAS) overall, visual analysis of the PANAS shame item in Figures 2 and 3 illustrates that over 30% of participants in the water bottle condition indicated feeling “extremely shameful” following the shame induction, as compared to less than 8% of participants in the teddy bear condition. This could imply that although the teddy bear was not able to mitigate small amounts of felt
shame, it may have softened the tendency for participants to experience intense amounts of shame in response to the prompt. These results suggest that when working with individuals with high levels of shame, a tactile safeness intervention may not mitigate the entirety of their shame, but may serve to lessen the intensity of the highest levels of shame, possibly making it easier for the individual to work productively with the difficult material that prompted it. However, it is important to note that despite this interesting pattern of results, no differences between groups on the shame measure reached statistical significance. This could mean that although the current results suggest that holding the teddy bear increased positive emotional experiences in participants, it may be that such tactile experiences do not impact the experience of shame.

Although equivocal, the findings of this study add to the emerging body of research on the overlap between the psychological and physical pain systems (Einsberger et al., 2003). These results support the suggestion that touch may be a psychological pain reliever, fitting in with the emerging body of evidence detailing the intricate connections between the physiological and psychological worlds. These findings are consistent with Tai et al.’s (2011) research findings suggesting that touching a soft, warm object (a teddy bear) can mitigate feelings of social exclusion. Tai et al. (2011) concluded that touching a teddy bear was able to subdue the experience of being excluded and increased prosocial behavior. Although the findings in this study are less striking, the observation that individuals in the teddy bear group in this study reported experiencing higher levels of positive emotions is consistent with these findings.

In light of these findings, it is no surprise that children often cling to an object with soft, cuddly characteristics when in distress. This research shows that a possible
effect of embracing such an object can increase the feeling of positive emotions not just in distressed children, but also in adults experiencing tricky emotions such as shame. According to Winnicott (1953), the object itself is not what leads to feelings of safeness and security, but the emotional significance behind the object and the physical sensations that it provokes. This study shows that there does not always have to be a significant emotional attachment to a soft, cuddly object for it to elicit positive affect in the individual.

This observation from the current study fits with previous research on the effects of touch. The experience of being touched has shown to have profound affects on human behavior. Research has shown that humans are hardwired to respond to touch in a compassionate manner (Seger et al., 2014). Much like the baby rhesus monkey that opted for the cloth mother over the wire mother with food, humans crave comforting touch (Harlow & Zimmermann, 1959). Comforting touch has shown to increase oxytocin (Lee, MacBeth, Pagani & Young, 2009) and decrease cortisol levels (Newcomer et al., 1999). Since soft touch has such a profound impact on both humans and animals holding the teddy bear may have potentially decreased cortisol levels and increase oxytocin levels in the participants. This may have potentially increased the experience of positive emotions in individuals in the teddy bear condition.

**Limitations and Future Research**

This study has several limitations which future research could address. First, the study yielded few significant results (see Table 2 and 3). The most likely explanation for this is that the shame prompt was not powerful enough in activating shame or other negative emotions that would function to reduce psychological flexibility. Future research
could have the participant think about their shameful experience (instead of writing, which could potentially serve to decrease the shame related to their experience as they put it into context) or psychologically induce shame as a part of the experiment, much as Tai et al. (2011) did to induce social exclusion. Additionally, because participants shredded their shame writing, I was unable to assess or confirm what the participant wrote about. This was done in order to allow the participant to write openly about their shame experience, hopefully avoiding the effects of feeling judged or having to alter their shame experience because they knew someone would read it. However, controlling for this potential confound introduced another potential problem – the possibility that some participants may not have actually written about a shameful experience. Additionally, knowing that they were going to shred their shame writing may have served to help alleviate it. Future research could allow the researcher to evaluate the writing exercise to ensure the participant wrote about a shameful topic, or to structure another sort of shame prompt that might address this confound. Another explanation for limited significant results could be that the positive effects of holding a teddy bear were addressing the affective system – how people felt – but not powerful enough to affect people’s attitudes about compassion or psychological flexibility.

Secondly, the stimuli used in this study were common objects. Future research could establish the specific qualities an inanimate object must have in order to relieve the effects of shame. I chose to use a teddy bear because past research had relived significant results with this object (Tai et al., 2011). Future research could evaluate the effects of other soft objects. It might be that holding an object such as a teddy bear, which is often associated with childhood, may have elicited a range of emotional experiences in adults.
It would be interesting to control for this potential confound by using other potentially soothing objects such as blankets or pillows which are not specifically associated with childhood. It would also be interesting to investigate the effect of the size of the object on the participant’s experience. Do different transitional object illicit different responses? Another factor that was not evaluated in this study was if the participants had a transitional object of their own growing up. The effects of having a past attachment to an inanimate object may have impacted the results of this study.

Similarly, future research could examine potential roles of anthropomorphism (ability to relate human like characteristics to non human objects), culture, age and gender (having more disproportionately more females than men) on the relationships observed. Results would need to be replicated in other cultural contexts and other populations in order to establish generalizability of our findings.

Lastly, a future study could extend the current research by incorporating a measure of prosocial behavior. Similar to Tai et al.’s (2011) research, investigating the relationship between the effects of social exclusion and a tactile intervention on the effects of prosocial behaviors. A future study could investigate the effects of positive emotions and the soothing tactile stimulation on the effects of a shame prompt and prosocial behavior. As the participant experiences the soothing effects of the tactile intervention they seem to experience significantly more positive emotions (see Table 3). It would be of interest to examine the effects of the combination (the teddy bear and increased experience of positive emotion) on the individual’s prosocial behavior after induced shame in a manner similar to that seen in Tai et al. (2011).
Finally, this study did not involve people whom identified themselves in need of psychological treatment. Although this study did assess for attachment style (to ensure groups did not differ on the basis of this variable), I did not group participants on this variable. Future research could evaluate and group participants according to attachment style to better understand the potential effects of tactile soothing intervention in insecurely attached populations. Consequently, to make suggestions to clinical practitioners based solely off of this study is pushing the limitations of what the study sought to accomplish. Although the processes involved in shame may apply to both clinical and non-clinical populations, replication of this study using a clinical sample would provide a much stronger basis for making clinical recommendations (for example, for clinicians to keep soothing tactile objects on hand in their therapy rooms).

Overall, this study lends evidence to support that the experience of a soft, cuddly tactile object facilitates the experience of positive emotions, even in individuals who had recently come face-to-face with a shame memory. Linus from the comic strip *Peanuts* may have been onto something all along.
References


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<td>2.593</td>
<td>0.868</td>
<td>0.132</td>
</tr>
</tbody>
</table>

*Note. N = number of participant’s responses on each item, M= Average response score, SD= Standard Deviation. Table displays general statistics for all variables assessed in this study. Variation in N is due to not all participants answering each questions (i.e. leaving blank, illegible writing).*
Table 2

*T-Test Results*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Condition</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
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</table>

*Note.* $N =$ number of participant’s responses on each item, $M =$ Average response score, $SD =$ Standard Deviation. Variation in $N$ is due to not all participants answering each questions (i.e. leaving blank, illegible writing). Table displays insignificant results of the normally distributed dependent variables.
Table 3  
*Mann-Whitney U Tests*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Group</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of (Wilcoxon W)</th>
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<td>PANAS-GAS Total Shame State</td>
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</table>

*Note.* Significance <.05 are in boldface. Results showed that participants experience of positive traits in the teddy bear condition were significantly higher than the participants experience of positive traits in the water bottle condition.
Figure 1

*Average of Felt Positive Emotions on the PANAS-GAS*

*Figure 1.* Mean difference values between the teddy bear condition and the water bottle condition in response to positive items on the PANAS-GAS. Participants in the teddy bear condition rated significantly higher felt positive emotions than participants in the water bottle condition.
Figure 2

*PANAS-GAS Shame Rating for the Water Bottle Condition*

*Figure 2*. Participants in the water bottle conditions responses to item “ashamed”, on the PANAS-GAS.
Figure 3

PANAS-GAS Shame Rating for the Teddy Bear Condition

Figure 3. Participants in the teddy bear conditions responses to item “ashamed”, on the PANAS-GAS.
VITA

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Degrees Awarded: Bachelors of Arts with a minor in Human and Family Development, 2016, University of Montana

Honors and Awards:

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Graduate Student Assistantship, 2017, Eastern Washington University

Kain and McKay Scholarship, 2016, University of Montana

Heisey Foundation Scholarship, 2015-2016, University of Montana

Montana Achievement Award, 2014-2015, University of Montana

University of Montana Scholars Award, 2013-2014, University of Montana

Montana Bright Futures Award, 2013-2014, University of Montana

Professional Experience:

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Internship, Center for Mental Health, Great Falls, MT, 2015
Publications and Presentations:

Pauley (Baum), J., Yorgason, L., & Muir, L. (2016, April). *Using global maternal sensitivity score to predict infant attachment*. Poster session presented at the meeting of the University of Montana Conference for Undergraduate Research, Missoula, MT.


Baum, J., Davis, S., & Wilson, A. (2019, April). *Project ELLO (Everyday Language and Literacy Opportunities)*. Poster presented at the meeting of Rocky Mountain Psychological Association, Denver, CO.

Rogozynski, M., Baum, J., Ross, J., & Islam-Zwart, K. (2019, April). *Eastern Washington University’s Faculty and Staff’s Perception and Knowledge of Title IX*. Poster presented at the meeting of Rocky Mountain Psychological Association, Denver, CO.

Baum, J., & Seiver, J. G. (2019, April). Success in an online class as a function of sex and level of distraction. In J. G. Seiver (Chair), *Sex differences in cognition and work satisfaction*. Symposium presented at the meeting of Rocky Mountain Psychological Association, Denver, CO.

Baum, J., Whitley, T., Davis, S. & Wilson, A. (2019, May). *Talking is Teaching*. Poster presented at the meeting of Eastern Washington University’s Symposium of Research, Cheney, WA.