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**ACCEPTANCE VERSUS DISTRACTON FOR UNWANTED
SEXUAL THOUGHTS**

by

Joseph A. Sherwood

**Thesis submitted in partial fulfillment
of the requirements for the degree**

of

DEPARTMENTAL HONORS

in

**Psychology
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Abstract

This on-line study examined 67 participants who rated their sexual thought distress level as moderately distressing or greater, on the successfulness of an acceptance-based strategy and a distraction-based strategy for dealing with unwanted sexual thoughts. The study began with the completion of an assessment battery, which measured attitudes about sexual thoughts. During a pre-intervention three minute time period, participants were asked to record/report occurrences a previously identified unwanted sexual thought, if or when, it occurred. They were then randomly placed into one of three experimental conditions (e.g., acceptance-based, distraction-based, and a control group) in which they viewed a video presentation that taught strategies for dealing with unwanted sexual thoughts. After watching the presentation, participants again recorded occurrences of sexual thoughts during a three minute period. Participants also completed the questions again to assess attitudes about sexual thoughts post intervention. Thought frequencies decreased for all groups post intervention, while levels of acceptance increased for the acceptance-based group, and decreased for the control-based group. Participants in the distraction based group also rated their sexual thoughts as being more similar to acting on the thought post intervention.

Keywords: acceptance, distraction, sexual, thoughts, ACT, online, commitment

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Acceptance versus Distraction for Unwanted Sexual Thoughts

Mahatma Gandhi once said that “a man is but the product of his thoughts; what he thinks, he becomes” (Ghandi, Tutu, 2007). This age old mentality has driven, in great part, the traditional perspectives on the way human cognition is managed. As children, many are taught that when unwanted or- intrusive thoughts enter the consciousness, they are to be controlled, and that by so doing such thoughts are purged.

Thought suppression, a variant of thought control, has traditionally been a popular technique to regulate or eliminate unwanted thoughts. However, a preponderance of evidence has shown that an attempt to suppress thoughts is counterproductive, actually maintaining the very thoughts one intended to avoid (Wenzlaff & Wegner, 2000). The phenomenon of the ironic processes associated with thought control began when a study showed that attempts to suppress thoughts about a white bear actually increased occurrences of the thought (Wegner, Schneider, Carter, & White, 1987). Since then, several studies have shown that attempts to suppress thoughts lead to greater arousal (discomfort levels) (Salkovskis & Campbell, 1994; Trinder & Salkovskis, 1994; Wegner, Shortt, Blake, & Page, 1990) and increased frequency of the unwanted thought (Muris, Merckelbach, & Clavan, 1997; Trinder & Salkovskis, 1994; Wegner et al., 1987).

A clinical population may react differently to naturally intrusive thoughts than they would to a random and non-intrusive thought (such as a white bear). To overcome some of these limitations a number of studies have demonstrated similar effects with naturally occurring intrusive thoughts (Becker, Rinck, Roth, & Margraf, 1998; Muris, Merckelbach, & Clavan, 1997; Salkovskis & Campbell, 1994). In one study, seventy-five participants were selected on the basis that they had experienced at least three personally intrusive negative thoughts in the

past months and that these thoughts were caused at least a specific level of distress (Salkovskis & Campbell, 1994). Participants were asked to identify a particular intrusive negative thought that they had experienced recently. They were placed into one of four suppression/distraction based groups (e.g., they were asked to distract themselves when the intrusive thought came to mind), or a “mention only” group (i.e., they were told to simply mention the occurrence of the thought without being given any instruction to avoid thinking of the thought). Of the four suppression/distraction based groups, three had significantly higher frequencies of the thought. Participants also experienced feeling less discomfort when they were able to think freely and were not engaged in suppression. This suggests that not only may the activity of thought suppression increase occurrences of unwanted thoughts, it also increases levels of discomfort that a person experiences while engaged in suppression.

Further studies have indicated similar findings with the intrusive thoughts of clinical populations such as obsessive compulsive disorder (OCD; Muris, Merckelbach, & Clavan, 1997; Rassin, Merckelbach, Muris, & Stapert, 1999; Rutledge, 1998), generalized anxiety disorder (GAD; Becker, Rinck, Roth, & Margraf, 1998), and depression (Kuyken & Brewin, 1994). Another pool of research has shown these same findings with addiction and impulse control related disorders; for example, smoking (Haaga & Allison, 1994; Salkovskis & Reynolds, 1994), drinking (Palfai, Monti, Colby, & Rohsenow, 1997), and compulsive eating (Harnden, McNally, & Jimerson, 1997).

A few studies have demonstrated that the same ironic processes are also relevant with sexual thoughts. Some studies have shown that the desire to escape from thoughts about HIV infection lead to an increase in risky sexual behavior among gay men (Hoyt, Nemeroff, & Huebner, 2006; Nemeroff, Hoyt, Huebner, & Proescholdbell, 2008). In one examining gay men,

706 participants completed a questionnaire assessing suppression/distraction levels associated with desire to escape from thoughts related to HIV/AIDS, and also answered questions measuring levels of risky sexual behavior study (Hoyt, Nemeroff, & Huebner). Both measures were also completed by 399 of those participants at a 6-month follow-up. Results from the study showed a positive correlation between suppression, the level to which participants desired to escape thoughts about HIV infection, and risky sexual behavior. Aside from the studies mentioned previously relating to HIV infection, a review of the literature found no studies examining the paradoxical nature of common sexual thoughts as they might occur in the general population.

The evidence of the ironic processes (i.e., increased discomfort levels, increased frequency of unwanted thoughts) functioning with thought control techniques lend support for the use of mindfulness, acceptance, or cognitive defusion based therapies. Mindfulness, acceptance, and cognitive defusion based treatments teach patients to accept their unwanted thoughts and to separate their character from their intrusive thoughts. A few studies are outlined which have demonstrated that these attitudes reduce anxiety traditionally linked with the intrusive thoughts and in turn decrease accompanying problematic behavior.

A recent study demonstrated the effective use of Acceptance and Commitment Therapy (ACT) in treating persons with problematic internet pornography viewing behavior (Twohig & Crosby, 2010). ACT teaches a willingness to experience inner experiences (e.g., thoughts, feelings, and physical sensations) and fosters psychological flexibility (i.e., the ability to move in a meaningful direction without particular regard for any inner experience). ACT achieves this end by focusing on six core processes that reduce the negative effects of certain inner experiences on overt behavior while teaching a skill set to increase the positive effects of other

inner experience on one's actions. Specifically, these private events are targeted by addressing, *acceptance*, (the embrace of private events without attempts to regulate or control their occurrence), *defusion* (separates inner experience from negative behavioral outcomes that may have historically accompanied them), *being present* (ability to describe private and overt experience in the moment, nonjudgmentally), *self as context* (understanding the self as a context for inner experience, without being defined by inner experience), *values* (defining for the individual his/her moral ideals and life goals), and *committed action* (moving toward defined values) (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

A great deal of research has shown that an adoption of these core processes has been shown to reduce problematic behavior associated with negative inner experience (Hesser, Westin, Hayes, & Andersson, 2009) whereas experiential avoidance has been shown to have reverse effects (Twohig, Crosby, & Cox, 2009). Experiential avoidance has been defined as “the occurrence of deliberate efforts to avoid and/or escape from private events such as affects, thoughts, memories and bodily sensations which are experienced as aversive” (Ruiz, 2010, p. 127). One study examined the effects of internet pornography viewing behavior on a sample of 84 college-age males (Twohig, Crosby, & Cox, 2009). In this study, participants filled out online surveys assessing time-spent viewing pornography, negative outcomes related to sexual practices, and items related to sexual compulsivity. Results from the study demonstrated that those who viewed pornography experienced more negative outcomes resulting from their viewing behavior than participants who reported no pornography viewing. Also, the negative effects of viewing were dependent on how much participants attempt to control their sexually related thoughts and urges more so than the rate of viewing. Supplementary work with similar disorders such as OCD (Abramowitz, Lackey, & Wheaton, 2009), trichotillomania (Norberg,

Wetterneck, Woods, & Conelea, 2007), and substance abuse/dependence (Forsyth, Parker, & Finlay, 2003) find similar outcomes.

Despite the substantial amount of literature to support the negative effects of thought suppression related techniques in dealing with intrusive thoughts, and the growing body of literature to support the use of ACT processes in treating persons suffering from intrusive thoughts, no studies to date have explored the nature of a distraction based intervention versus an ACT based intervention in dealing with unwanted or intrusive sexual thoughts. This exploratory study aimed to compare a brief ACT based strategy with that of a distraction based strategy in dealing with unwanted sexual thoughts. Some behavioral and process questions, as well as thought frequencies were taken pre-intervention and post-intervention. Data was taken from sixty-seven participants who rated their sexual thoughts as being moderately distressing or above. It is hypothesized that participants in the acceptance based group will experience relatively equal amounts of thought frequency pre-intervention to post-intervention, whereas the distraction based group will experience an increase in thought frequency over time. It is also expected that participants in the acceptance group will show increased competency in the core ACT processes (i.e., they will experience decreased attempts to suppress unwanted sexual thoughts, find their thoughts more acceptable, have more disassociation between negative inner experience and behavior, will find their sexual thoughts less bothersome and less problematic, will be more comfortable experiencing them, and will fight with their unwanted sexual thoughts less) pre-intervention to post-intervention, despite the brief and superficial nature of the interventions. Conversely, it is believed that the distraction group will show changes opposing those found in the acceptance based strategies condition (i.e., participants will experience an increase in attempts to suppress unwanted sexual thoughts, find their unwanted sexual thoughts

as being less acceptable, have increased association between unwanted sexual thoughts and behavior, will find their unwanted sexual thoughts as being more bothersome and problematic, will be less comfortable experiencing them, and will fight with their unwanted sexual thoughts more).

Methods

Participants

Participants were 67 undergraduate students recruited through flyers hung in buildings around campus and announcements made in a range of larger psychology classes. As incentive, class credit was awarded in some of the classes to participating students. Two-hundred and twenty-three students logged into the website. Among those, 200 agreed to the informed consent. Participants who did not fill out all aspects of the study were removed from analysis, leaving a total of 181 participants. A screening measure asked participants to rate the level of distress caused by their sexual thoughts on a scale of one to five (1 = Not at all distressing, 5 = extremely). Data was taken from a sample of 67 participants who rated their sexual thought distress level as three (moderately distressing) or above (Figure 1).

Among the participants chosen 48% were male and 52% were female. Ninety-four percent were Caucasian, 4.5% were Hispanic, and 1.5% were Asian-American. The mean age of participants was 21 years. With regards to religion, 88% were Latter-day Saint (LDS), 3% were Catholic, and 9% marked as having no religious affiliation. Eighty-seven percent of participants marked their relationship status as single, while 13% were married. The mean years of post-high school education was 1.56 years (Table 1).

Materials

LimeSurvey Version 1.90+ Build 9642.

LimeSurvey is an open-source web application used to develop, publish and collect responses to online and offline surveys. All of the following measures were adapted for online delivery and response through the use of the LimeSurvey software (The LimeSurvey Project Team, 2010).

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

The AAQ-II is a 10-item questionnaire which assesses acceptance, experiential avoidance, and psychological flexibility. Questions are rated in a 7-point Likert-style scale. Lower scores indicate higher acceptance and psychological flexibility for intrusive thoughts. A total score is given by summing the scores for each item. The AAQ-II has been found to have satisfactory internal consistency ($\alpha = .78 - .88$) and a 3- and 12-month test-retest reliability of $r = .81$ and $.79$, respectively (Bond et al., 2007).

Quality of Life Scale (QOLS).

The QOLS is a 16-item scale that assesses life satisfaction in a variety of domains (e.g., physical and material well-being, relationships with others, personal development and fulfillment, etc.). Participants rate their satisfaction on a scale ranging from 1 (least satisfied) to 7 (most satisfied). The measure is scored by summing the scores of all 16 items. The QOLS was shown to be internally consistent ($\alpha = .82$ to $.92$) and had high test-retest reliability over 3-weeks ($r = 0.78$ to $r = 0.84$) (QOLS; Burckhardt, Woods, Schultz, & Ziebarth, 1989).

Behavioral and Processes Questions.

The ACT processes measure was adapted specifically for this study following a similar construct used in other ACT research (Twohig, Hayes, & Masuda, 2006; Twohig & Crosby;

2010). Participants were asked questions about their attitudes in relation to their sexual thoughts (e.g., “How often do you try to control or suppress your sexual thoughts?” “Is it acceptable for you to have these thoughts?” “How similar is having a sexual thought to acting on it?” “How problematic are your unwanted sexual thoughts?” “How much do unwanted sexual thoughts bother you?” “How comfortable are you with experiencing unwanted sexual thoughts?” “How often do you find yourself fighting with unwanted sexual thoughts?”). Participants were asked to rate on a 0-to-100 scale (0=not at all and 100=very much). As this measure was created for this study, psychometric properties are not available. However, due to the behavioral nature of some questions, face validity is implicit.

Procedures

The recruitment materials provided a link to an internet address where the entire study was completed. Participants were made aware that their participation was completely anonymous and that the entire study was to be completed online from a computer at a location and time of their choosing to ensure personal comfort and confidentiality. By clicking in the box indicating consent, the webpage enabled them to continue by clicking a button labeled “next.” Without giving consent, participants did not have the ability to continue on to the rest of the study.

After consenting to participate, demographic information was taken. Participants were asked questions relating to age, sex, marital status, religious affiliation, ethnicity, and years post high school education. The next page included a screening measure used to assess distress levels associated with sexual thoughts and the daily frequency of those thoughts. Next, the participants completed the ACT processes questions, the AAQ-II, and the QOLS.

Participants were then asked to think of a particular intrusive, unwanted sexual thought that they had experienced in the past or on a regular basis, and were told that it may be any sexual thought that is unwanted or causes distress. As soon as the thought was in mind, they were instructed to indicate so by clicking “yes” and then “next” to continue (those persons who did not feel that the instruction was applicable were instructed to click “no”). On the following page, participants were told that for a three minute period they were to think about whatever they would like. However, when they clicked “next” a timer would begin counting down from three minutes. During the three minute period, participants were instructed to record each occurrence of the sexual thought previously identified as, or if, it occurred. To record occurrences of the sexual thought, participants were instructed to press the number "1" key for each occurrence of the sexual thought. Each “1” press was recorded into a box provided and saved.

After the thought recording timer ended, participants were randomly placed into one of three experimental conditions: 1) an acceptance-based strategies condition, 2) a distraction-based strategies condition, and 3) a no instruction control condition. The acceptance-based and distraction-based strategy conditions were automatically directed to a page that provided information on how to respond to unwanted sexual thoughts. The information was presented through text/audio in a power point presentation, formatted as a video clip which changed slides automatically as the text from each slide was read aloud. Each video presentation was roughly 4-5 minutes in length. The acceptance-based condition included insight about the futility of attempts to control thoughts, the paradox of control causing the thought to occur more often, and the idea of acceptance as an alternative to control. Acceptance, in this case, referred to acknowledging the automatic occurrence of the thought, but recognizing the opportunity to choose how to respond to the thought. The distraction based condition included suggestions to

avoid thinking the thought at all costs and to think of something else any time the thought occurred. The control condition watched a similarly formatted video presentation which provided information about the history of the university at which the study was conducted.

After completing the intervention portion of the study, participants were again asked to wait for three minutes and record the occurrence of unwanted sexual thoughts just as previously described. This time, however, they were asked to use the strategies or information they learned from the experimental phase.

Participants were then asked to complete the behavioral and process questions again. After completing the process questions, a validity measure was used to assess what participants actually did. Participants were asked, "When you were asked to practice the new strategy for responding to unwanted sexual thoughts for three minutes (the second time), what did you do?" Response options included the following, "some acceptance," "a lot of acceptance," "some distraction," "a lot of distraction," "nothing," or "other." After the validity question participants interested in receiving class credit were directed to an external link where they could fill out identifying information. They were made aware that the information provided in the external link was in no way associated with information provided during the study.

Results

Preliminary Analyses

To determine whether random assignment was effective at creating similar characteristics among the three groups (acceptance, distraction, and the no-instruction control group) analysis of variance (ANOVA) and a χ^2 test was conducted to detect any differences in age, race, marital status, years post high school education, and religion, as well as AAQ-II total scores, and QOLS

total scores. No group differences were found for any of the variables. This indicates that random assignment was successful at equating groups (Table 2 & Table 3).

Primary Analysis

To determine changes from pre to post measures, and ascertain differences between the acceptance, distraction, and control groups, 3(group) x 2 (time) mixed ANOVA were performed. For all comparisons $p < .05$ was adopted as the criterion for establishing statistical significance. Means and standard deviations for all outcome measures are included in Table 4.

Thought Frequency.

Analysis of the thought frequency showed no main effect of group, $F(2, 64) = .56, p = .58$, partial $\eta^2 = .02$. Results showed a significant main effect in time, $F(1, 64) = 32.94, p < .01$, partial $\eta^2 = .34$, and no significant interaction between group and time, $F(2, 64) = 1.25, p = .29$, partial $\eta^2 = .04$. This means that thought frequency was significantly reduced for all three groups, including the accept group. Mean and standard deviation scores for the thought frequency measure are included in Table 4.

Process Questions.

Pre and post measures were taken for each of the ACT core process questions. Participants rated their relative agreeability to each statement on a 0-100 scale. Means and standard deviations of pre-to-post responses for each question are presented in Table 4. A 3(group) x 2(time) mixed ANOVA was used to assess the change in process question scores from pre-intervention to post-intervention across groups. Statistical significances for each of the following process questions are presented:

Question 1: How often do you try to control or suppress your sexual thoughts?

No significant main effect for group was found for question 1, Group: $F(2, 64) = 1.94, p = .15$, partial $\eta^2 = .06$, and no significant main effect for time: $F(1, 64) = 2.46, p = .12$, partial $\eta^2 = .04$, or the group time interaction: $F(2, 64) = 2.76, p = .07$, partial $\eta^2 = .08$

Question 2: Is it acceptable for you to have these thoughts?

Results for question 2 showed no significant effect of group, $F(2, 64) = 1.98, p = .15$, partial $\eta^2 = .06$, or time, $F(1, 64) = .35, p = .56$, partial $\eta^2 = .01$, but a significant group by time interaction, $F(2, 64) = 6.82, p < .05$, partial $\eta^2 = .18$. The acceptance group was significantly different from the control group in promoting acceptability of unwanted sexual thoughts over time. The control group had a significant decrease in acceptance of unwanted thoughts.

Question 3: How similar is having a sexual thought to acting on it?

Results showed no significant main effect of group for question 3, $F(2, 64) = .14, p = .87$, partial $\eta^2 = .004$, but a significant main effect of time, $F(1, 64) = 6.62, p < .05$, partial $\eta^2 = .09$. However, the group time interaction was not significant, $F(2, 64) = 1.70, p = .19$, partial $\eta^2 = .05$. A review of the pre-intervention to post-intervention means reveals significant increases in distraction and control groups but not in the acceptance group. Distraction and control groups found their sexual thought more similar to acting on the thought post intervention.

Question 4: How problematic are your unwanted sexual thoughts?

Results for question 4 showed no significant main effect for group, $F(2, 64) = .75, p = .48$, partial $\eta^2 = .02$, time, $F(1, 64) = .03, p = .87$, partial $\eta^2 = .000$, or group time interaction, $F(2, 64) = .178, p = .18$, partial $\eta^2 = .05$.

Question 5: How much do unwanted sexual thoughts bother you?

Results for question 5 revealed no significant main effect for group, $F(2, 64) = 2.94, p = .06$, partial $\eta^2 = .08$, or time, $F(1, 64) = 6.52, p < .05$, partial $\eta^2 = .09$. In addition, no significant group time interaction was revealed, $F(2, 64) = .12, p = .89$, partial $\eta^2 = .004$.

Question 6: How comfortable are you with experiencing unwanted sexual thoughts?

No significant main effect for group, $F(2, 64) = .51, p = .61$, partial $\eta^2 = .02$, time, $F(1, 64) = .06, p = .80$, partial $\eta^2 = .001$, or group time interaction, $F(2, 64) = .25, p = .78$, partial $\eta^2 = .01$ was found for question 6.

Question 7: How often do you find yourself fighting with unwanted sexual thoughts?

Results showed no significant main effect of group, $F(2, 64) = .70, p = .50$, partial $\eta^2 = .02$ or time, $F(1, 64) = 1.06, p = .31$, partial $\eta^2 = .02$ for question 7. The group time interaction also did not yield significant results, $F(2, 64) = .48, p = .62$, partial $\eta^2 = .02$.

Validity Measures: Percentages of Intervention Adherence

When participants were asked to communicate the techniques that they actually used, as opposed to the strategies they were instructed to use (i.e., acceptance group instruction versus distraction group instruction), 38.5% of the participants in the acceptance group reported using some acceptance, 23.1% used a lot of acceptance. In the acceptance group 15.4% reported using some distraction, and 11.5% claimed to have used a lot of distraction. Also, 11.5% reported using no strategies to deal with their sexual thoughts. Of the distraction group 42.9% reported using some distraction whereas the other 57.1% used a lot of distraction. In the control group,

5% reported using a lot of acceptance, 30% used some distraction, 30% used a lot of distraction, 25% noted using nothing, and the remaining 10% marked “other” (Table 5).

Discussion

Thus far, the phenomenon of the ironic processes involved in thought suppression has largely been untouched in the realm of unwanted sexual thoughts. Although ACT has recently shown effective at treating patients with problematic internet pornography viewing (Twohig & Crosby 2010), and attempts to control urges to view have been shown to facilitate how problematic the viewing becomes (Twohig, Crosby, & Cox, 2009), research to investigate the processes behind sexual thinking (i.e., problematic internet pornography viewing) remain necessitating further support. In this exploratory study, these ACT core processes were examined at a fairly superficial level. Even with a very brief intervention (4 minute video presentation), it was expected that acceptance based groups would show increased competencies related to ACT core processes, and would experience a decrease in thought frequency post intervention. It was also hypothesized that the distraction group would show increases in thought frequencies post intervention and decreased competencies in the ACT processes.

As predicted, decreases in thought frequency were observed in the acceptance condition. However, decreases occurred in both the distraction and control groups as well. The fact that all three groups had a reduction in thought frequency shows that there was something inherent in the study that reduced thought frequency regardless of group assignment. Unexpectedly the distraction group showed significant decreases in sexual thoughts post intervention, although there were no differences between groups. This may be due to the relatively new idea of acceptance to participants. As people inherently become better at anything with practice, it may

be that the participants in this study were accustomed to using distraction as a technique to eliminate unwanted sexual thoughts, and therefore were more competent in its use.

Other significant findings showed that in process question 2, “Is it acceptable for you to have these thoughts?” expected outcomes for both acceptance group was observed. However, acceptance was not significantly different from the distraction group, but rather the control group (i.e., the acceptance group showed greater acceptance of their unwanted sexual thoughts whereas the control group showed less acceptance from pre-intervention to post-intervention). In addition, hypotheses were confirmed for question 3, “How similar is having a sexual thought to acting on it?” The distraction group found their sexual thoughts more similar to acting on the thought post intervention, while the acceptance group showed no significant change.

Although the study yielded no other significant results, a review of the means and standard deviations in Table 4 shows trends that some expected differences did occur in the ACT processes. For example, outcome measures for question 1, “How often do you try to control or suppress your sexual thoughts?” demonstrated a decrease in suppression level from an initial rating (pre-intervention) of 70 to 62 in the acceptance group, whereas the distraction group experienced an increase (80 to 85). In question 4, “How problematic are your unwanted sexual thoughts?” participants in the acceptance group showed a decrease (51 to 46) while the distraction group experienced a slight increase (58 to 59). Due to the very brief nature of the acceptance-based and distraction-based interventions, these changes may still say something in terms of the overall effect of each condition.

Another interesting thing to note were the results from the validity question asked at the end of the study (Table 5). When participants were asked to communicate the techniques that they actually used, as opposed to the strategies they were instructed to use (i.e., acceptance group

instruction versus distraction group instruction), 38% of the participants in the acceptance group admitted to using distraction strategies as opposed to acceptance strategies, whereas 100% of participants in the distraction condition used distraction techniques (i.e., perfect adherence to condition). This finding signifies two things, 1) that distraction is a more common technique for ridding unwanted sexual thoughts amongst this sample, and therefore participants are inherently more comfortable with its use, and 2) even a mere exposure to a brief acceptance intervention may enhance competency in at least some ACT processes. The fact that 60% of the control group used distraction based techniques to deal with unwanted sexual thoughts may explain some changes over time (e.g., the reduction in acceptance of sexual thoughts post intervention).

As mentioned previously, one limitation of this study was the brief approach to each intervention. As participants had likely already been exposed to distraction techniques when dealing with unwanted sexual thoughts, and have rehearsed their use throughout a lifetime, a 4 minute video teaching acceptance may do little to sway them. This limitation could be addressed by implementing a longer, more detailed intervention, possibly over multiple time periods. In this scenario, participants could report over time how they have progressed in proficiency with regards to the new strategy learned. A similar approach was employed by Trinder and Salkovskis (1994), where after being separated into either a suppression group (participants were instructed to suppress intrusive thoughts), expression group (participants were instructed to dwell on and express thoughts), and a “simply record” group, participants were asked to identify a negative intrusive thought and record occurrences of the thought over a four-day period.

Another limitation of this study was the small and homogenous sample. The majority of participants were first or second year, LDS, Caucasian college students. It would be interesting to see how the findings would be different with a more diverse sample.

Another limitation inherent to online research is the difficulty in ensuring adherence. Participants taking the study from a home computer, for example, may have a multitude of distractions in their circumference (e.g., background music, TV, whining children, roommates, a tempting refrigerator, etc.). There is no way of knowing just how attentive participants were to the study. For example, during the second thought recording timer phase, one participant admitted to leaving the computer to “get a bite to eat” while the timer counted down. A final weakness related to the above limitation may have been due to the class credit incentive given to participants. Psychology students at the university are required to participate in various campus research and other academic activities, and the majority of participants in this study came as a result of this requirement. It is very likely that at least some of these participants paid little attention to detail in the study in an attempt to finish quickly and fulfill the class requirement. Conducting a similar research design in a laboratory may overcome these limitations.

In summary, this pilot study has shown some of the positive effects that even a brief exposure to an ACT based intervention, and the possible deleterious effects of distraction as a means of dealing with unwanted sexual thoughts. Thought frequency decreased for all groups post intervention. Levels of acceptance increased for the acceptance based group while they decreased for the control group. Participants in the distraction based group also rated their thoughts as being more related to behavior post intervention. The aforementioned study limitations and their implications for future research show that further investigation is warranted. As this study explored new concepts in the realm of psychopathology, namely, the core processes involved in sexual thinking and their accompanying negative behavioral outcomes, additional work is clearly required.

References

- Abramowitz, J. S., Lackey, G., & Wheaton, M. G. (2009). Obsessive-compulsive symptoms: The contribution of obsessive beliefs and experiential avoidance. *Journal of Anxiety Disorders, 23*, 160–166.
- Becker, E. S., Rinck, M., Roth, W. T., & Margraf, J. (1998). Don't worry and beware of white bears: Thought suppression in anxiety patients. *Journal of Anxiety Disorders, 12*, 39–55.
- Bond, F.W., Hayes, S.C., Baer, R.A., Carpenter, K.M., Orcutt, H.K., & Waltz, T. (2008). Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological flexibility. Manuscript submitted for publication.
- Burckhardt, C. S, Woods, S. L., Schultz, A. A., & Ziebarth, D.M. (1989). Quality of life of adults with chronic illness: A psychometric study. *Research in Nursing and Health, 12*, 347–354.
- Forsyth, J. P., Parker, J. D., & Finlay, C. G. (2003). Anxiety sensitivity, controllability and experiential avoidance and their relation to drug of choice and addiction severity in a residential sample of substance-abusing veterans. *Addictive Behaviors, 28*, 851–870.
- Ghandi, M., Tutu, D. (2007). *Peace: The words and inspiration of Mahatma Gandhi*. Blue Mountain Arts, New York.
- Haaga, D. A. F., & Allison, M. L. (1994). Thought suppression and smoking relapse: A secondary analysis of Haaga (1989). *British Journal of Clinical Psychology, 33*, 327–331.
- Harnden, J.L., McNally, R.J., & Jimerson, D.C. (1997). Effects of suppressing thoughts about body weight: A comparison of dieters and nondieters. *International Journal of Eating Disorders, 22*, 285–90.

- Hayes, S.C., Luoma, J.B., Bond, F., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*, 1-25.
- Hesser, H., Westin, V., Hayes, S.C., & Andersson, G. (2009). Clients' in-session acceptance and cognitive defusion behaviors in acceptance-based treatment of tinnitus distress. *Behaviour Research and Therapy, 47*, 523-528.
- Hoyt, M.A., Nemeroff, C.J., Huebner, D.M. (2006). The effects of HIV-related thought suppression on risk behavior: Cognitive escape in men who have sex with men. *Health Psychology, 25*(4), 455-461.
- Kuyken, W., & Brewin, C. R. (1994). Intrusive memories of childhood abuse during depressive episodes. *Behaviour Research and Therapy, 32*, 525-528.
- Muris, P., Merckelbach, H., & Clavan, M. (1997). Abnormal and normal compulsions. *Behaviour Research and Therapy, 35*, 249-252.
- Nemeroff, C.J., Hoyt, M.A., Huebner, D.M., Proescholdbell, R.J. (2008). The cognitive escape scale: Measuring HIV-related thought avoidance. *AIDS Behavior, 12*, 305-320.
- Norberg, M. M., Wetterneck, C. T., Woods, D. W., & Conelea, C. A. (2007). Experiential avoidance as a mediator of relationships between cognitions and hair-pulling severity. *Behavior Modification, 31*, 367-381.
- Palfai, T. P., Monti, P. M., Colby, S. M., & Rohsenow, D. J. (1997). Effects of suppressing the urge to drink on the accessibility of alcohol outcome expectancies. *Behaviour Research and Therapy, 35*, 59-65.
- Rassin, E., Merckelbach, H., Muris, P., & Stapert, S. (1999). Suppression and ritualistic behaviour in normal participants. *British Journal of Clinical Psychology, 38*, 195-201.

- Rassin, E., Merckelbach, H., Muris, P., & Stapert, S. (1999). Suppression and ritualistic behaviour in normal participants. *British Journal of Clinical Psychology, 38*, 195–201.
- Ruiz, F.J. (2010). A review of acceptance and commitment therapy (ACT) empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy, 10*, 1, 125-162.
- Rutledge, P.C. (1998). Obsessionality and the attempted suppression and unpleasant personal intrusive thoughts. *Behavior Research and Therapy, 36*, 403-416.
- Salkovskis, P. M., & Reynolds, M. (1994). Thought suppression and smoking cessation. *Behaviour Research and Therapy, 32*, 193–201.
- Salkovskis, P. M., Campbell, P. (1994). Thought suppression induces intrusion in naturally occurring negative intrusive thoughts. *Behavior Research & Therapy, 32*(1), 1-8.
- The LimeSurvey Project Team. (2010). <http://www.limesurvey.org>.
- Trinder, H., Salkovskis, P. M. (1994). Personally relevant intrusions outside the laboratory: Long-term suppression increases intrusion. *Behavior Research & Therapy, 32*(8), 833-842.
- Twohig, M.P., Crosby, J.M. (2010). Acceptance and commitment therapy as a treatment for problematic internet pornography viewing. *Behavior Therapy, 41*, 285–295.
- Twohig, M. P., Crosby, J. M., & Cox, J. M. (2009). Viewing internet pornography: For whom is it problematic, how, and why? *Sexual Addiction and Compulsivity, 16*, 253-266.
- Twohig, M. P., Hayes, S. C., & Masuda, A. (2006). Increasing willingness to experience obsessions: Acceptance and commitment therapy as a treatment for obsessive compulsive disorder. *Behavior Therapy, 37*, 3–13.

Wegner, D.M., Schneider, D.J., Carter, S.R., White, T.L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53(1), 5-13.

Wegner, D.M., Shortt, J. W., Blake, A.W., Page M.S. (1990). The suppression of exciting thoughts. *Journal of Personality and Social Psychology*. 58(3), 409-418.

Wenzlaff, R.M., Wegner, D.M. (2000). Thought suppression. *Annual Review of Psychology*, 51, 59-91.

Appendix

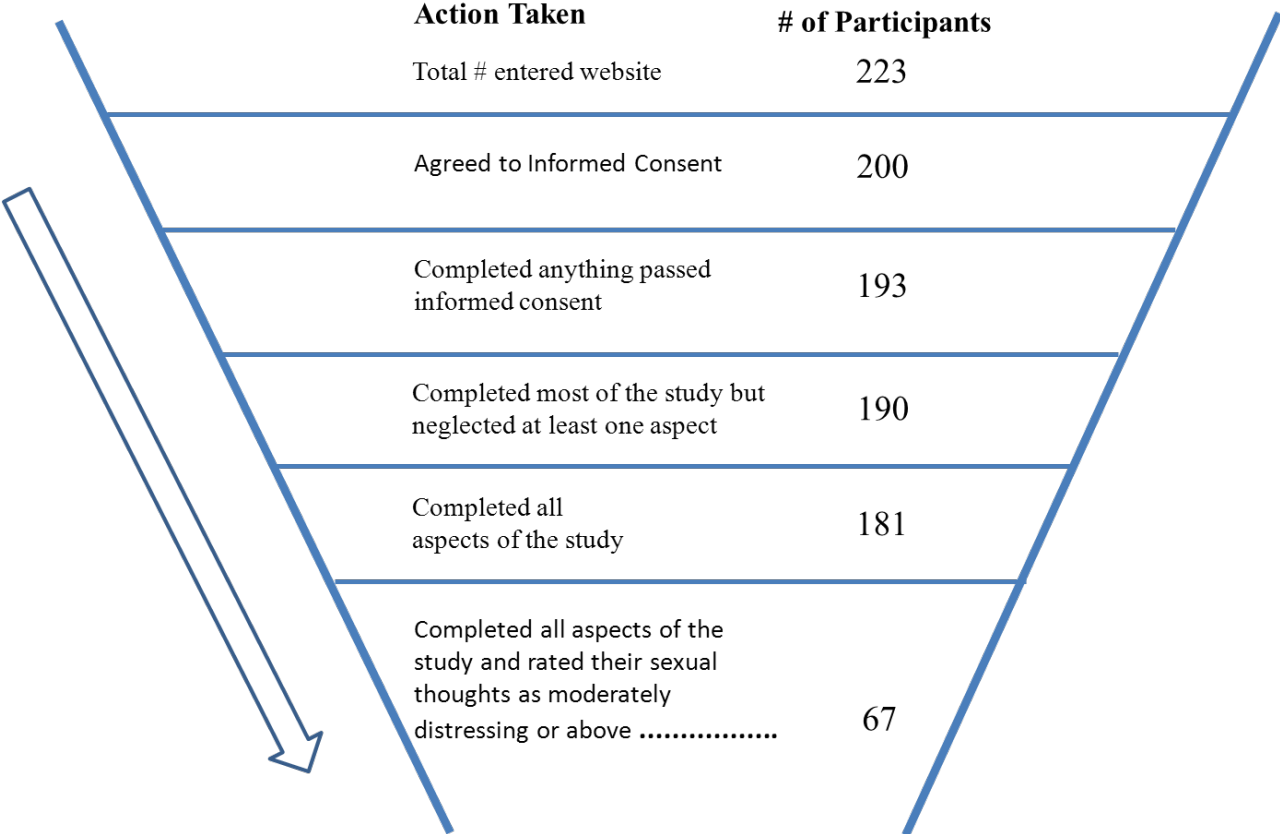


Figure 1: Flow of Participation. This figure details the selection process of participation. Participants with any incomplete data were not included in the study. Final participants were chosen based on a screening measure assessing levels of distress associated with sexual thought

Table 1

Percentages, Means, and Standard Deviations (SD) for Demographic Variables

Sex	Percentages	Mean(SD)
Male	47.80	
Female	52.20	
Age		20.84(4.351)
Race		
Caucasian	94.0	
Hispanic	4.50	
Asian American	1.50	
Marital Status		
Single	86.60	
Married	13.40	
Education (Years Post High School)		1.560 (1.6411)
Religion		
Catholic	3.0	
LDS	88.10	
No Affiliation	9.0	

Table 2

Percentages, Means, and Standard Deviations (SD) Between Groups (N=67)

Sex	Acceptance (n=26)	Distraction (n=21)	Control (n=20)
Male	38.5% (n=10)	61.9% (n=13)	45.0% (n=9)
Female	61.5% (n=16)	38.1% (n=8)	55.0% (n=11)
Age	20.00(3.137)	20.90(3.032)	21.85(6.409)
Race			
Caucasian	92.3% (n=24)	100% (n=21)	90.0% (n=18)
Hispanic	3.8% (n=1)	0.0% (n=0)	10.0% (n=2)
Asian American	3.8% (n=1)	0.0% (n=0)	0.0% (n=0)
Marital Status			
Married	7.7% (n=2)	19.0% (n=4)	15.0% (n=3)
Single	92.3% (n=24)	81.0% (n=17)	85.0% (n=17)
Religion			
LDS	88.5% (n=23)	90.5 (n=19)	85.0% (n=17)
Catholic	3.8% (n=1)	0.0% (n=0)	5.0% (n=1)
No Affiliation	7.7% (n=2)	9.5% (n=2)	10.0% (n=2)
AAQ Totals	33.8077(9.0245)	33.619(9.39402)	34.60(10.35883)
QOLS Totals	85.7692(11.84671)	82.0476(13.23811)	81.90(16.52080)

Table 3

ANOVA and Chi-Square (χ^2) Results

<i>Chi-Square Results</i>			
Measure	<i>df</i>	χ^2	<i>p</i>
Sex	2	2.65	.27
Race	4	4.03	.40
Marital Status	2	1.35	.51
Religion	4	1.08	.90
<i>ANOVA Results</i>			
Measure	<i>df</i>	<i>F</i>	<i>p</i>
Age	2	1.03	0.36
Years Post HS Education	2	0.07	0.93
AAQ-II Totals	2	0.06	0.94
QOLS Totals	2	0.60	0.55

Note. AAQ-II Totals = Total scores for the Acceptance and Action Questionnaire II

QOLS Totals = Total scores for the Quality of Life Scale

HS = High School

Table 4

Means and Standard Deviations (SD) for Outcome Measures

Process	Acceptance (N = 26)		Distraction (N = 21)		Control (N = 20)	
	Pre	Post	Pre	Post	Pre	Post
How often do you try to control or suppress your sexual thoughts? (0 = Not At All, 100 = All the Time)	70.23(21.00)	62.00(25.00)	79.57(21.30)	84.62(19.42)	75.30(24.67)	68.55(32.10)
Is it acceptable for you to have these thoughts? (0 = Not At All, 100 = Very Acceptable)	25.19(28.23)	34.00(32.18)	13.57(16.91)	16.71(16.05)	24.80(33.48)	16.30(24.87)
How similar is having a sexual thought to acting on it? (0 = Not At All, 100 = Very Similar)	38.00(31.55)	38.77(33.67)	38.52(29.20)	44.67(29.30)	37.40(34.00)	48.55(35.60)
How problematic are your unwanted sexual thoughts? (0 = Not At All, 100 = Very Problematic)	50.92(28.07)	46.31(26.79)	58.19(24.87)	59.19(27.21)	52.45(38.26)	57.05(32.52)
How much do unwanted sexual thoughts bother you? (0 = Not At All, 100 = Very Much)	70.50(28.94)	62.85(30.83)	84.05(14.91)	79.29(19.96)	67.35(31.89)	60.20(34.39)
How comfortable are you with experiencing unwanted sexual thoughts? (0 = Not At All, 100 = Very Comfortable)	30.19(26.77)	28.96(24.48)	23.52(23.43)	25.14(22.71)	24.00(27.47)	22.00(26.63)
How often do you find yourself fighting with unwanted sexual thoughts? (0 = Not At All, 100 = All The Time)	45.04(27.67)	43.00(27.54)	49.81(23.41)	50.10(25.98)	43.20(33.17)	37.75(27.24)
Thought Frequency	4.50(4.95)	2.08(2.19)	6.48(7.20)	2.14(2.52)	5.70(5.44)	3.10(3.68)

Table 5

Validity Measure: Percentages of Intervention Adherence

Participant Reported Action	Acceptance	Distraction	Control
Some acceptance	38.5%	0.0%	0.0%
A lot of Acceptance	23.1%	0.0%	5.0%
Some Distraction	15.4%	42.9%	30.0%
A lot of Distraction	11.5%	57.1%	30.0%
Nothing	11.5%	0.0%	25.0%
Other	0.0%	0.0%	10.0%

Author Biography

Joseph Sherwood was raised in Portland and Coos Bay, Oregon until the age of 15, when his family relocated to Nephi, Utah. He graduated from Juab High School in 2003, and shortly after served a two-year mission for the LDS church in Spain. Upon his return, he enrolled in Southern Utah University, where he received his associate's degree and met his wife, Brianne.

Joseph and his wife transferred to Utah State University in the fall of 2008. Joseph's interest in psychology was sparked by a psychology 1010 class taken in high school through concurrent enrollment. While attending Utah State, Joseph has explored many avenues in the field of psychology, and ended with a desire to pursue a career in Industrial-Organizational Psychology. While attending the university he has been involved in REACH Peers, the STAR reading program, honors, and undergraduate research. He also is the founder and President of the USU Industrial-Organization Psychology Club. Joseph was named the valedictorian for the department of Psychology for spring commencement 2011.

Joseph's interests include outdoors activities including, mountain biking, rock climbing, hiking, camping, and snowboarding. He also enjoys playing guitar, and creative writing. After graduation, Joseph will work full time for a year while his wife completes her degree. Afterward, he hopes to receive his Ph.D. in Industrial-Organizational Psychology, and work as an organizational consultant.