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Exploring Meditation and Biased Emotional Responses to

Counter-Attitudinal Persuasive Messages

by

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THESIS APPROVAL PAGE

This is to certify that the thesis prepared by [INSERT Student's Name] Antonia N. Santoro _____ entitled [INSERT Title of Thesis] Exploring Meditation and Biased Emotional Responses to Counter-Attitudinal Persuasive Messages

has been approved by the thesis committee as satisfactorily completing the thesis requirements for the degree _ [INSERT Type of Degree] Master of Arts

(for example, Master of Science)

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Dean of Graduate Studies	Type Name	Date

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Jeffrey Kukucka, for their guidance during the process.

Abstract

Exploring Meditation and Biased Emotional Responses to

Counter-Attitudinal Persuasive Messages

Antonia N. Santoro

Mindfulness meditation (MM) has been shown to improve emotional regulation (Teper, Segal, & Inzlicht, 2013) and therefore may reduce negative emotional states experienced in response to a counter-attitudinal persuasive message. Loving-kindness meditation (LKM) has been shown to increase positive emotions (Stell & Farside, 2015) and therefore may counteract negative emotions produced by these messages. Research has shown a link between types of meditation and a reduction in other types of bias (Hafrenbrack, Kinians, & Barsade, 2014; Stell & Farside, 2015). The goal of the present study was to explore the emotional mechanism underlying biased reactions to counter-attitudinal information and the ability of MM to regulate this emotional reaction and LKM to counteract this emotional reaction and therefore decrease bias. Results are discussed in terms of effectiveness of the meditation and persuasion manipulations and possibilities for further research.

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Introduction

Attitude-contradicting persuasive messages can be threatening to people causing them to be more likely to discount those messages (Munro & Ditto, 1997). When people read counter-attitudinal messages, they experience a negative emotional state, causing them to view the messages unfavorably (Munro, Stansbury, & Tsai, 2012). Research has investigated ways to decrease bias (Cohen, Aronson, & Steele, 2000), and meditation has been shown to decrease a variety of types of biases (Hafrenbrack, Kinias, & Barsade, 2014; Kiken & Shook, 2011; Lueke & Gibson, 2015; Stell & Farside, 2015). Two types of meditation that are of interest to decreasing bias are mindfulness meditation (MM) and loving-kindness meditation (LKM). MM has been hypothesized to enhance emotional regulation through improvements in executive functioning by in improving responsiveness to affective cues (Teper, Segal, & Inzlicht, 2013). LKM has been shown to increase compassion and positive emotions and therefore counteract the outcomes of negative emotions (Stell & Farside, 2015). The present study explored the emotional mechanism underlying biased reactions to counter-attitudinal information and the ability of MM to regulate this emotional reaction and LKM to counteract this emotional reaction and therefore decrease bias.

Biases to Persuasive Messages

Research has highlighted the effect of receiving persuasive messages that are contrary to a person's attitude. Studies indicate that after receiving persuasive messages, individuals are more likely to evaluate the information and its source more negatively

when it is inconsistent with their opinions than when it is consistent (Lord, Ross, & Lepper, 1979).

Munro et al. (2002) demonstrated this negative evaluation of attitude-contradicting information in a naturalistic setting. Students viewed and evaluated the 1996 presidential debate between Bill Clinton and Bob Dole. Participants considered the candidate with opinions consistent with their own more positively than the candidate with opposing opinions. Also, Munro, Weih, and Tsai (2010) identified that people tend to discount messages from politicians whose political party is different from their own. In this study, participants read a newspaper article describing a Democratic or Republican candidate's support for a legislative bill; half of the articles mentioned the politician may have had ulterior motives for supporting the bill. Participants readily attributed the out-group politician's behavior to the ulterior motive, but did not cite the ulterior motive when the politician shared their political affiliation. This study illustrates how messages that oppose a person's opinion are more frequently discounted than those that support a person's opinion.

Santoro and Munro (2015) further explored peoples' evaluations of the source of a persuasive message. College students indicated their initial attitudes regarding controversial topics and read an article with either pro- or anti-gun control arguments. Results indicated that participants who read essays inconsistent with their opinions rated the author as having less wisdom and less credibility than those who read essays consistent with their opinions.

Emotional Mechanism of Bias to Persuasive Messages

Past research has shown that there is an emotional mechanism contributing to biased interpretations of threatening messages (Zuwerink & Devine, 1996; Munro & Ditto, 1997; Munro, Stansbury, and Tsai, 2010). That is, if individuals read a message contrary to their attitudes, they experience a negative mood state, causing them to evaluate the message in a more biased way than if they had not experienced this negative emotional reaction.

Correlational research has established a relationship between negative affect and biased evaluations of information. Munro and Ditto (1997) demonstrated that emotional reactions mediated the relationship between prior attitudes and biased information evaluation (see also Zuwerink & Devine, 1996). Results showed the more negative a participant's reaction, the more negative their evaluation of the attitude-inconsistent information.

Munro, Stansbury, and Tsai (2010, Study 1) established the role of negative affect as a causal mechanism for prior attitudes resulting in biased evaluations of persuasive information. Half of the participants in this study experienced a misattribution manipulation in which the researcher indicated to the participants that the room they were in was undergoing renovations and were asked to provide information about their comfort level in the room. This manipulation provided participants with justification for the negative affect they may feel when reading a counter-attitudinal message regarding homosexuality. Participants in the misattribution condition evaluated the information more positively than those in the control condition. If participants had the ability to

attribute their negative mood state to the less than ideal conditions of the room, they experienced less bias.

Bias in response to counter-attitudinal messages can be detrimental to objective processing of information (Kunda, 1990). A well-crafted persuasive message with important content can be discounted because of the tendency for individuals to be defensive to information that is contrary to their attitudes. Therefore, ways to decrease the amount of bias a person experiences when exposed to persuasive messages are important to explore.

Mindfulness Meditation

The current literature on MM addresses the ability of mindfulness to decrease various types of biases in practitioners. Mindfulness is the process of focusing on the present moment, which can be induced through a meditation experience (Hafenbrack et al., 2013). There are two components of mindfulness: a cognitive component which emphasizes focusing on the present moment and letting go of interfering thoughts about the past and future (Hafenbrack, Kinias & Barsade, 2013) and an emotional component that emphasizes the process of non-judgmental acceptance of emotions and thoughts (Teper, Segal, & Inzlicht, 2013; Goldin & Gross, 2010). Mindfulness can be conceptualized as either a state (i.e., induced through a mindfulness meditation intervention) or a trait (i.e., a stable characteristic; measured through self-report).

Mindfulness and Bias. Lueke and Gibson (2015) investigated MM's ability to reduce implicit age and race biases. Participants listened to either a mindfulness recording or a control recording about natural history and then completed Implicit Association Tests (IAT) that measure subconscious biases based on race and age.

Participants who experienced a brief meditation showed less racial and age bias than the control group.

Additionally, mindfulness has been shown to reduce negativity bias (i.e., the tendency to weight negative information more heavily than positive information). Kiken and Shook (2011) assigned students to undergo either a mindfulness or an unfocused attention induction. Afterwards, participants completed the BeanFast task, a computer task measuring negativity bias. The BeanFast task is a game in which participants must associate novel stimuli with positive and negative outcomes to win. The number of positive and negative outcomes a participant can classify in this task is used to identify if there is a negativity bias in responses. Participants who experienced a mindfulness induction demonstrated less negativity bias.

Research has also indicated that mindfulness decreases the sunk-cost bias (i.e., the tendency to follow through with an endeavor once you have invested money, time, or effort into it). First, Hafenbrack, Kinias, and Barsade (2013) collected self-report data to investigate the relationship between trait mindfulness and the sunk-cost bias. Participants completed the Mindfulness Attention and Awareness Scale (MAAS) and the Resisting Sunk Costs section of the Adult Decision Making Inventory through an online survey. Results indicated that mindfulness was positively correlated with resisting the sunk-cost bias. In a follow-up study, Hafenbrack et al. sought to establish a causal link between mindfulness and the resistance of the sunk-cost bias. Participants who listened to a mindfulness recording were more likely to resist the sunk-cost bias than those in a control condition.

Mindfulness and Emotion. Although MM has been shown to reduce these biases, it is unknown whether mindfulness likewise reduces bias against counter-attitudinal persuasive messages. However, research suggests that MM may influence the emotional mechanism that causes this type of bias. This research indicates that MM can orient a person to his or her own thoughts and feelings as stimuli that are an external event, rather than part of the self (Lueke & Gibson, 2015). Mindfulness may have the ability to increase emotional regulation and therefore decrease the negative emotional reaction that individuals experience when receiving counter-attitudinal messages.

Goldin and Gross (2010) suggest that mindfulness promotes early awareness and nonjudgmental acceptance of emotional stimuli. Teper, Segal, and Inzlicht (2013) developed a theoretical model for the ability of mindfulness to enhance emotional regulation through improvements in executive control. The authors emphasize the relationship between mindfulness and the process of nonjudgmental acceptance of thoughts and emotions and propose that mindfulness allows people to engage in regulation of emotions before intense emotional reactions have time to occur.

Loving-Kindness Meditation

A second form of meditation that may reduce bias is LKM, which develops compassion and unconditional kindness towards the self and others. Techniques include repeating phrases such as "May you be happy" while visualizing a person (e.g., the self, a specific other, a group of others, etc.) experiencing the outcomes of the phrase. Engaging in this type of meditation can result in increased positive affect (Salzberg, 1995). Fredrickson, Cohn, Caffey, Pek, and Finkel (2008) had half of their participants engage in LKM interventions. Results of their study indicated that LKM significantly increased

experiences of positive emotion including love, gratitude, hope, contentment, and pride when compared to the control.

Engaging in LKM can also lead to an increase in compassionate behaviors toward others (Bankard, 2015). Condon and DeSteno (2013) had participants engage in LKM for eight weeks and then invited them into the lab. Participants' compassionate behaviors were measured by whether they offered their seat in the waiting room to a confederate who appeared to be in pain. Participants who had engaged in LKM were more likely to offer their seat to the confederate. LKM's ability to increase positive emotions and specifically, other-oriented emotions, such as compassion, makes it an important type of meditation to explore in relationship to bias.

Loving-Kindness Meditation and Bias. To date, only one study has examined the effectiveness of LKM in reducing bias. Stell and Farsides (2015) examined the ability of a brief LKM to reduce racial bias on the IAT by increasing positive emotions. Participants engaged in a LKM or visual imagery program and then completed the IAT on race. Results of this study indicated that participants in the LKM condition reported more positive emotions and demonstrated less bias on the IAT. While LKM has been found to be associated with a decrease in racial bias, LKM and bias to persuasive messages has not yet been explored.

Loving-Kindness Meditation and Emotion. LKM has the potential to reduce biases to counter-attitudinal persuasive messages through acting on a person's social identity to their in-group and adjusting their reaction to an out-group by increasing positive emotions. Social identity is a person's sense of who they are based on group membership (Tajfel & Turner, 1979). When reading an attitude-threatening article, the

reader identifies with his or her group membership and sees those who support attitude-threatening information as the out-group. Social Identity Theory states that in-group members will discriminate against out-group members to enhance their self-image (Tajfel & Turner, 1979). Through LKM, the amount of compassion a person feels for a member of an out-group will increase, as well as the overall amount of positive feelings about the out-group. This change in perception of the out-group may help to decrease the amount of negative emotions experienced by the reader, as well as diminish the biased reaction to the information.

The Present Study

The present study investigated whether a short-term (12-minute) MM or LKM induction impacts emotional reactions to attitude-disconfirming information. Participants underwent either a MM, LKM, or neither, after which they read a persuasive essay on the Black Lives Matter (BLM) movement in the United States, which was either consistent or inconsistent with their pre-existing attitudes toward the movement. After reading the message, participants reported their emotional state, rated the quality of the essay and reported any change in attitude toward the BLM movement.

Hypothesis 1. MM will decrease negative emotions experienced by participants receiving attitude-threatening information.

Hypothesis 2. LKM will increase the amount of positive emotions experienced by participants receiving attitude-threatening information.

Hypothesis 3. Participants who experience either type of meditation will rate the essay of higher quality and experience greater attitude change in the direction of the persuasive message.

Chapter 2:

Method

Participants

The sample included 213 undergraduate students recruited via Towson University's ResearchPool, a participant recruitment website. Participants received credit in psychology courses for participating and were recruited regardless of prior attitudes on the topic of interest, the Black Lives Matter movement. The sample included 177 females and 35 males, aged 18 – 31 ($M = 18.96$, $SD = 1.77$). 97.2% of participants reported less than 1 year of consistent experience with meditation.

Procedure

Participants were escorted in groups of up to 6 into a laboratory and sat down at a conference-style table. First, participants completed a paper copy of an informed consent form. After completing the consent form (See Appendix B), participants were escorted to individual laboratory rooms and used a computer running a Qualtrics survey to complete the following inductions and questionnaires.

Materials

Demographic Questionnaire. Participants completed a demographic questionnaire to collect information such as gender, age, and previous meditation experience (see Appendix C).

Initial Attitudes Survey (IAS). Next, participants completed an IAS which included 11 items pertaining to controversial topics such as gun control, abortion, and drug policy (see Appendix D). Each item contained a statement to which the participants rated their level of agreement on a 7-point scale (1 = *agree* and 7 = *disagree*). The key

item on the survey was "Black Lives Matter addresses important racial injustices in our society" and was used to classify participants as pro- or anti-BLM via a mid-point cutoff score.

Meditation manipulation. Participants were randomly assigned to listen to one of three audio recordings via headphones: a MM intervention, a LKM intervention, or a control lecture on basic chemistry. All three recordings were 12 minutes long and are available on YouTube.

Mindfulness Attention Awareness Scale (MAAS). Participants then completed a state version of the MAAS (Brown & Ryan, 2003) as a manipulation check to confirm that the MM condition induced a significant level of mindfulness (see Appendix E). This questionnaire contained 5-items that presented statements such as "I was finding it difficult to stay focused on what was happening" and "I was preoccupied with the future or the past." Participants rated the applicability of each statement on a 7-point scale (0 = *not at all*, 6 = *very much*).

Self-Compassion Scale (SCS). Then participants completed the SCS (Neff, 2003) as a manipulation check to confirm that the LKM condition induced a significant level of self-compassion (see Appendix F). This questionnaire contained 12-items that presented statements such as "If I failed at something important to me, I would be consumed by feelings of inadequacy" and "I am understanding and patient towards those aspects of my personality I don't like". Participants rated the level they agree or disagree that the statement applies to them on a 5-point scale (1 = *agree*, 5 = *disagree*).

Persuasive Message. Next, participants were randomly assigned to read an essay that presented arguments either in favor of or against the BLM movement. Each one-page

essay was a persuasive message by an author that proposed information about recent incidences of police brutality against people of color in the United States, but differed in their pro- or anti-BLM conclusions (see Appendix G, Appendix H). All opinions presented in the essay were compiled from online sources. Pro-BLM arguments were adapted from BlackLivesMatter.com, while anti-BLM arguments were adapted from online message boards.

Emotion Measure. After reading the essay, participants completed an emotion questionnaire which consisted of 20 different emotions (see Appendix I). Participants rated the degree to which they were currently experiencing that emotion on a 7-point scale (1 = *does not apply at all* and 7 = *applies very much*). This questionnaire included three subscales: negative emotion toward-others (e.g., threatened, bothered), negative emotion toward self (e.g., angry at myself, shameful) and positive emotions (e.g., content, happy).

Other dependent measures. Participants evaluated the quality of the essay with four items (e.g., "How strong are the arguments used by the author") measured using 9-point scales. Finally, participants answered one question measuring the degree to which their opinions about BLM changed because of reading the essay. The items employed 9-point scales where the midpoint of the scale (0) represented no change, negative numbers represented changing toward greater opposition against the BLM movement, and positive numbers represented changing toward greater support (see Appendix J).

Chapter Three:

Results

Participants were split into three groups based on their response on the key item on the IAS measuring opinions on the BLM movement: pro- ($n = 166$), anti- ($n = 21$) and neutral-BLM ($n = 26$). Participants with responses less than the midpoint of the scale (4) were placed in the anti-BLM group, those with responses greater than 4 were placed in the pro-BLM group, and those with scores of 4 were placed into the neutral group. Participants in the anti- and pro-BLM groups were put into one of two groups contingent on which essay manipulation they received; those who read an essay supporting their initial position (e.g. anti-BLM participants reading an anti-BLM essay) were placed into a "match" group ($n = 82$) and those who read an essay opposing their initial position (e.g. anti-BLM participants reading a pro-BLM essay) were placed into a "mismatch" group ($n = 105$). Neutral participants are excluded from the following analyses as they do not allow for matching and did not impact the results.

3 (Meditation: MM vs. LKM vs. Control) x 2 (Match: Match vs. Mismatch) between-subject's factorial ANOVAs were computed on the following dependent measures. In some cases, the assumption of homogeneity was violated. However, parametric and non-parametric analyses indicated the same results and therefore parametric tests are reported.

MAAS

The five items measuring mindfulness were correlated ($\alpha = .78$), therefore a mindfulness index was created by averaging the five items. Results indicated a significant main effect of meditation type on MAAS score, $F(2, 187) = 10.37$, $p < .001$, $\eta^2_p = .10$,

[90% CI: .04, .17], Power = 0.99. Tukey post hoc analyses indicated that participants

who experienced the MM (*M* = 3.49, *SD* = 1.27) and the LKM (*M* = 3.70, *SD* = 1.25)

reported greater levels of mindfulness (indicated by a lower number on the scale) than

those who experienced the control condition (*M* = 4.48, *SD* = 1.37). A visual display of

these results can be found in *Figure 1* below.
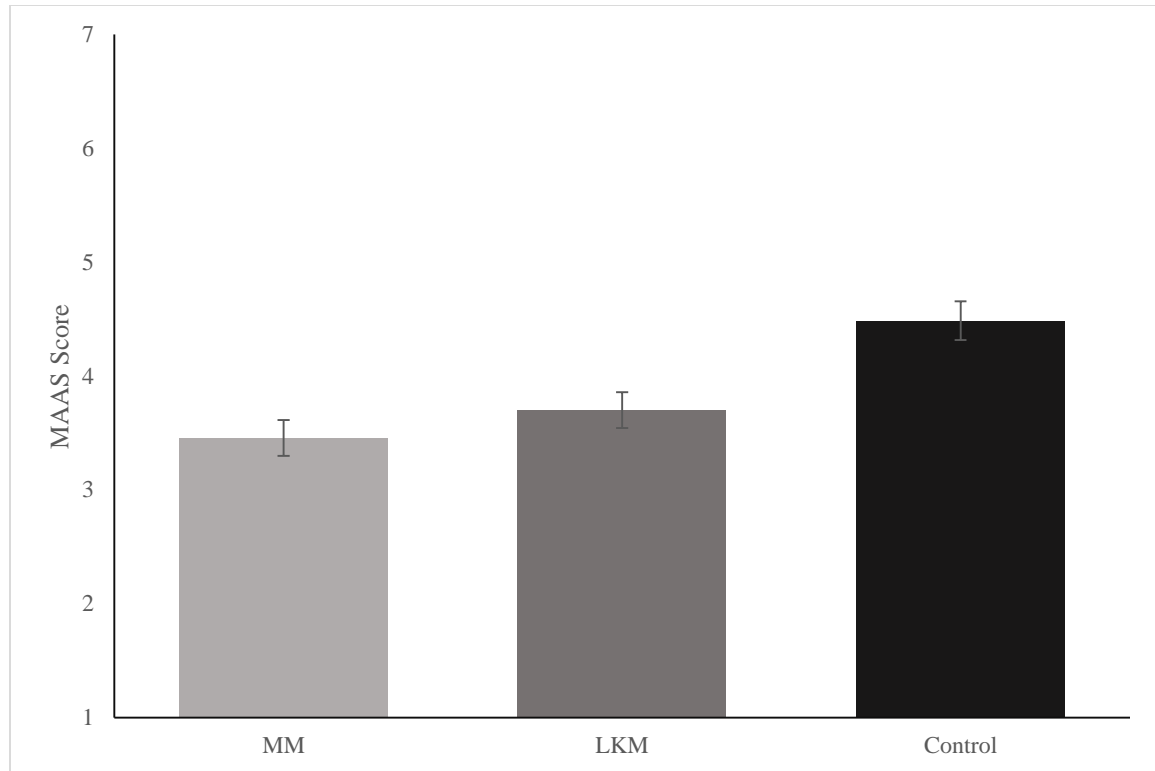
Figure 1. Main effect of meditation induction on MAAS score.

Self-Compassion

After reverse scoring the necessary items, the 12 items measuring self-

compassion were correlated (α = .83) and a self-compassion index was created by

averaging the items. Results indicated there was no significant impact of type of

mediation, impact of essay, or interaction on amount of self-compassion experienced, all

*p*s > .18.

Essay Quality

The four items measuring essay quality were highly correlated ($\alpha = .95$) and an essay quality index was created by averaging the items. Results indicated a significant main effect of match on ratings of essay quality, $F(1, 177) = 38.72$, $p < .001$, $\eta^2_p = .18$ [95% CI: .10, .26], Power = 1.00. Participants who read an essay that matched their initial opinions rated the essay of higher quality ($M = 6.19$, $SD = 1.82$) than those who read an essay that mismatched their initial opinion ($M = 4.28$, $SD = 2.22$). A visual display of these results can be seen in *Figure* 2 below.
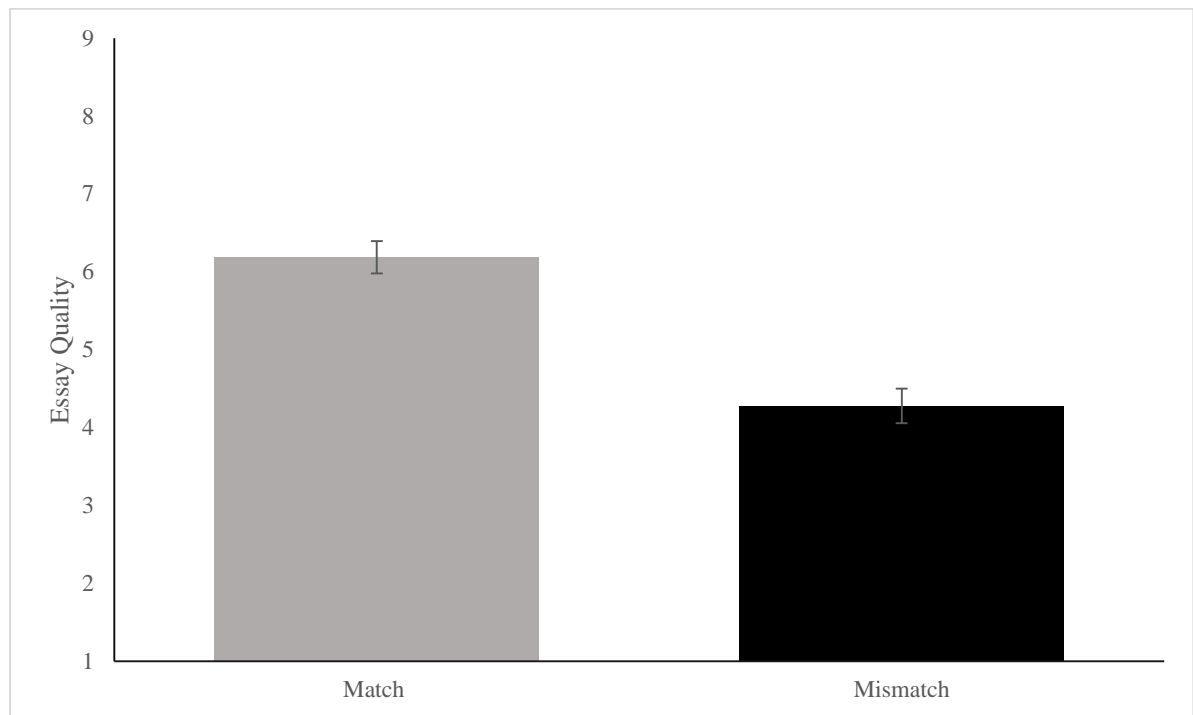
Figure 2. Main effect of match on ratings of essay quality.

Inconsistent with hypothesis 3, neither type of meditation impacted the ratings of essay quality by participants ($p = .54$), nor was an interaction between type of meditation and match present ($p = .86$).

Emotion

The 20-item emotion measure was analyzed based on the three subscales: negative emotion toward others, negative emotion toward self, and positive emotion.

Negative Emotion toward Others. The ten items assessing negative emotion toward others were correlated (α = .85) and were therefore averaged to create a negative emotion toward others index. Results indicated a match main effect on negative emotion toward others, $F(1, 173) = 4.55$, $p = .03$, $\eta^2_p = .02$ [90% CI: .00, .08], Power = 0.56. Participants who read an essay that mismatched with their initial opinions on the topic of BLM experienced more negative emotion toward others ($M = 3.72$, $SD = 1.51$) than those who read an essay that matched with their initial opinion, ($M = 3.24$, $SD = 1.25$). A visual display of these results can be found in *Figure* 3 below.
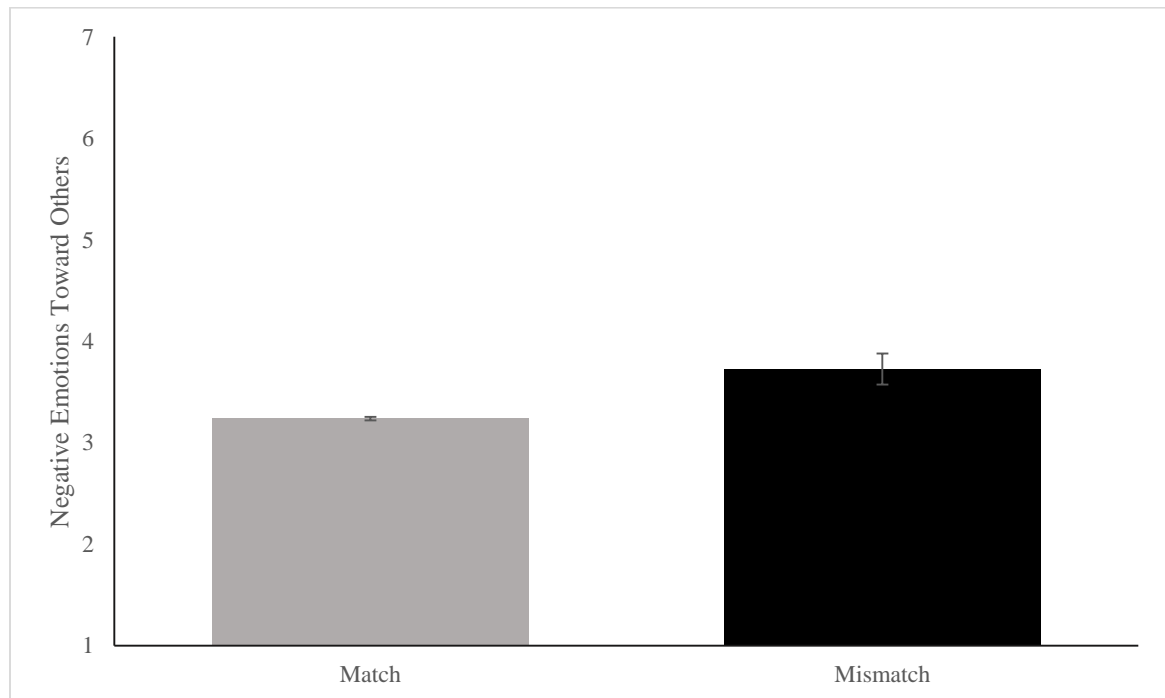

Figure 3. Main effect of match on negative emotions toward others.

Inconsistent with hypothesis 1, type of meditation did not have a main effect on negative emotion toward others ($p = .48$). Additionally, an interaction between meditation type and match was not found ($p = .06$).

Negative Emotion toward Self. The seven items assessing negative emotion toward self were correlated ($\alpha = .91$); a negative emotion toward self index was created by averaging the seven items. Results indicated no significant effects of meditation (inconsistent with hypothesis 1) or match on negative emotion experienced toward the self, all ps > .05. Also, an interaction between meditation type and match was not found ($p = .60$).

Positive Emotion. The three items assessing positive emotion were correlated ($\alpha = .83$), therefore a positive emotion index was created by averaging the three items. Results indicated no significant effects of meditation (inconsistent with hypothesis 2), match, or interaction between meditation and match on positive emotion, all ps > .41.

Attitude Change. Results indicated no significant effect of meditation (inconsistent with hypothesis 3) or match and no significant interaction on attitude change, all ps > .60.

Chapter Four:

Discussion

The present study investigated the effect of MM and LKM on biased emotional responses to counter-attitudinal persuasive messages. It was hypothesized that participants receiving a MM induction would experience fewer negative emotions in response to a persuasive message and that participants receiving a LKM induction would experience greater positive emotions and therefore both would report higher essay quality ratings and experience greater attitude change. This study did not reveal evidence to support these hypotheses.

Results of this study replicated two important findings regarding how people respond to counter-attitudinal persuasive information. First, mirroring previous research (Lord, Ross, & Lepper, 1979; Santoro & Munro, 2015), this study found that participants who read an article that matched their initial attitude rated the essay of higher quality than those who read an article that did not match their opinions. Further, results replicated the finding that those who disagree with a persuasive message are more critical of that message and therefore show a greater amount of bias. Secondly, participants in this study experienced the intended emotional impact after reading the persuasive essay. Participants who read an essay that mismatched their initial attitude experienced a greater amount of negative emotion towards others than those who read essays that matched their attitudes (Zuwerink & Devine, 1996; Munro & Ditto, 1997; Munro, Stansbury, & Tsai, 2010).

This study did not reveal a significant impact of type of meditation on bias to persuasive messages. The MM and LKM inductions used in this study did not elicit the

emotional impacts that were hypothesized. This could have occurred because the effect of the meditation wore off before people read and evaluated the message due to the design of the study (i.e.,. participants engaged in the audio condition, then read the persuasive article, then reported emotion). Future studies could utilize a design where the individual reads the persuasive message first and then engages in the meditation induction to further explore this possibility. Additionally, participants in this study could have been distracted (e.g., by the stress of being in a lab environment, by their cell phones when left alone in the laboratory room), preventing them from fully engaging in the meditation. Future studies could provide a quiz on the content of the meditation exercise to ensure the participants are listening to the audio induction.

Although the present study did not reveal a significant impact of type of meditation, it includes limitations that should be addressed in future research. It is important to standardize the inductions used in research to ensure they are having the intended effects. Contrary to my prediction, short-term MM and LKM inductions were not effective in reducing bias to counter-attitudinal persuasive messages. The MM used in the present study was effective at increasing levels of mindfulness; however, participants in the LKM group also experienced a significant increase in mindfulness. This could indicate a lack of effectiveness in the specific LKM induction used and should be taken into consideration for further research utilizing these types of inductions. This specific LKM induction may have been ineffective at increasing compassion in participants because it is a short-term, single administration and longer term inductions may be necessary to for the complicated process of developing compassion for the self and for others. Additionally, participants in the LKM condition could have been

providing socially desirable responses when responding to the MAAS. Students may have believed because they had engaged in a meditation, they must be experiencing a more present-minded state and therefore answered the questions accordingly. Stell and Farsides (2015) utilized an effective 7-minute LKM induction in their study that included looking at a photograph of another person during the meditation and directing feelings of love toward that person. Including a picture of others during the meditation may have increased the effectiveness of the meditation by providing concrete information for the participant to focus on.

Future studies should also consider the impact that a long-term meditation course could offer for this type of bias by using at least an 8-week long intervention as has been used in other studies exploring meditation and bias (Condon & DeSteno, 2013). According to MAAS results in the present study, participants are experiencing cognitive changes resulting in higher self-reported levels of mindfulness, however, these short-term interventions do not appear to be impacting the *emotional* component of mindfulness. This may indicate that emotional impacts of MM (and LKM) may occur after long-term practice. Although short-term interventions appear to be ineffective at reducing this type of bias, according to this study, long-term interventions may have a greater impact.

Finding effective ways to decrease biased emotional reactions to persuasive messages is important because persuasive messages that mismatch a person's attitude may still be logically sound and present valid points that are critical to understand and process. Negative emotional reactions generate bias that prevents a person from

objectively processing important information from opposing arguments. Further

investigation of brief interventions like MM or LKM are still warranted since they could

positively impact society and help avoid biased reactions to important persuasive

messages.

APPENDIX A

IRB Approval Form

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Antonia Santoro <asanto9@students.towson.edu>

IRB Protocol Approval # 1610007510
6 messages

Taylor, Amy L. <altaylor@towson.edu>   Thu, Nov 3, 2016 at 9:17 AM
To: "Santoro, Antonia" <asanto9@students.towson.edu>, "Munro, Geoffrey Douglas" <gmunro@towson.edu>
Cc: IRB <irb@towson.edu>

The IRB has approved your protocol "Exploring Meditation and Biased Emotional Responses to Controversial
Issues " effective 10/28/2016 under Expedited Review, Category 7.

Your IRB protocol can now be viewed by your faculty advisor in MyOSPR. For more information, please visit:
http://www.towson.edu/academics/research/sponsored/myospr.html

If you should encounter any new risks, reactions, or injuries to subjects while conducting your research, please
notify IRB@towson.edu. Should your research extend beyond one year in duration, or should there be
substantive changes in your research protocol, you will need to submit another application.

We are offering training and orientation sessions for faculty in the fall, I encourage you to sign up for one of the
sessions:

http://fusion.towson.edu/www/signupGeneric/index.cfm?type=OSPR

Regards,

Towson IRB

Amy L. Taylor, MBA, CRA · Assistant Vice President for Research

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APPENDIX B

Informed Consent

This study is being conducted by Dr. Geoffrey Munro and Toni Santoro of the Department of Psychology at Towson University. You may not participate in this study if you are under 18 years of age.

The purpose of the study is to investigate the process by which people form impressions of others' opinions. You will be asked to listen to a 12-minute audio clip, then read an article, and provide answers to questions regarding your judgments about the article. The judgments will include a brief questionnaire. You may choose to skip any question you do not wish to answer. Please be aware that the article to be read will contain potentially sensitive subjects including racial injustice and Black Lives Matter. If you are distressed by the material, you are welcome to discontinue participation at any time and I can provide Counseling Center contact information if you are interested. Additionally, you will be asked to provide some background information about yourself. Also, you should know that social science research sometimes involves the researcher(s) concealing some aspects of the study from the participants. It is hoped that the results of this study will further our understanding of how we form impression judgments about other people.

You do not have to participate in this research, and you have the right to withdraw at any time during this research without penalty. Taking part in this study is entirely up to you, and no one will penalize you in any way if you decide not to do so. If you should become distressed in any way, you have the right to terminate your participation immediately. Should you agree to participate in this study, your responses will be filed in a manner that will ensure complete confidentiality. You will be assigned a code number such that the data will be stored with no record of your name kept along with the answers you provide. The study will last approximately 30 minutes and you will receive one credit on Research Pool for your time.

By participating in this study there will be no direct benefit to participants, though you may gain a better understanding of how research is conducted. After completing the study, you will receive more detailed information about the purposes and hypotheses of the study.

If you want to know more about this research project, please contact the principal investigator of this study, Toni Santoro, at asanto9@students.towson.edu or the faculty advisor, Dr. Geoffrey Munro at gmunro@towson.edu or at 410-704-3215. This project has been reviewed and approved by the Institutional Review Board for the Protection of Human Participants at Towson University. If you have questions about Towson University's rules for research, please contact Dr. Elizabeth Katz, Chairperson of the Institutional Review Board for the Protection of Human Participants at Towson University at 410-704-2236.

Geoffrey D. Munro, Ph.D.
Toni Santoro

I agree to take part in this project and that I am at least 18 years of age. I know what I will have to do and that I can stop at any time.

Signature_____Date_____

APPENDIX C

Demographic Questionnaire

Please answer the following questions by clicking or typing in your answer.

1. What is your gender?

   Female
   Male
   Other _____
   Prefer not to answer

2. What is your age?

   Please write a number _____
   Prefer not to answer

3. What is your major?

   Please indicate a major or "undecided" _____

4. What is your class standing?

   Freshman
   Sophomore
   Junior
   Senior+
   Prefer not to answer

5. What is your experience with meditation?

   No experience with meditation
   Some previous experience, but no consistent practice
   Less than one-year consistent practice
   1-2 years of consistent practice
   Over 4 years of consistent practice

APPENDIX D

Initial Attitude Survey

Please complete this survey by circling the appropriate number beside each statement that identifies your level of agreement with the statement.

Abortion is murder.	Agree	1 2 3 4 5 6 7	Disagree
Gun control laws should be stricter.	Agree	1 2 3 4 5 6 7	Disagree
Our government is too big.	Agree	1 2 3 4 5 6 7	Disagree
The legal drinking age should be 18.	Agree	1 2 3 4 5 6 7	Disagree
The Affordable Care Act should be repealed.	Agree	1 2 3 4 5 6 7	Disagree
Black Lives Matter addresses important racial injustices in our society	Agree	1 2 3 4 5 6 7	Disagree
Marijuana should be legal.	Agree	1 2 3 4 5 6 7	Disagree
Health Care should be cheaper for consumers.	Agree	1 2 3 4 5 6 7	Disagree
Taxes should be lowered on cigarettes	Agree	1 2 3 4 5 6 7	Disagree
Semi-automatic "assault" weapons should be banned.	Agree	1 2 3 4 5 6 7	Disagree
NCAA athletes should be paid.	Agree	1 2 3 4 5 6 7	Disagree

APPENDIX E

MAAS

Please complete this survey by circling the number beside each statement that identifies

your level of agreement with the statement regarding the 10-minute audio clip you just

experienced.

I was finding it difficult to stay
focused on what was happening.   Not at all   0 1 2 3 4 5 6 Very Much

I was doing something without
paying attention.   Not at all   0 1 2 3 4 5 6 Very Much

I was preoccupied with the future
or the past.   Not at all   0 1 2 3 4 5 6 Very Much

I was doing something automatically
without being aware of
what I was doing.   Not at all   0 1 2 3 4 5 6 Very Much

I was rushing through something
Without being really attentive to it. Not at all   0 1 2 3 4 5 6 Very Much

APPENDIX F

Self-Compassion Questionnaire

Please complete the following questions by indicating the appropriate number that identifies the level of applicability of each statement to you, on a scale from 1 to 5.

1. If I failed at something important to me, I would be consumed by feelings of inadequacy.

	1	2	3	4	5
	Agree				Disagree

2. I am understanding and patient towards those aspects of my personality I don't like.

	1	2	3	4	5
	Agree				Disagree

3. If something painful happened, I would try to take a balanced view of the situation.

	1	2	3	4	5
	Agree				Disagree

4. If I'm feeling down, I would feel like most other people are probably happier than I am.

	1	2	3	4	5
	Agree				Disagree

5. I try to see my failings as part of the human condition

	1	2	3	4	5
	Agree				Disagree

6. If I was going through a very hard time, I give myself the caring and tenderness I need.

	1	2	3	4	5
	Agree				Disagree

7. If something upset me, I would try to keep my emotions in balance.

	1	2	3	4	5
	Agree				Disagree

8. If I failed at something that was important to me, I would feel alone in my failure.

	1	2	3	4	5
	Agree				Disagree

9. If I was feeling down, I would obsess and fixate on everything that's wrong.

	1	2	3	4	5
	Agree				Disagree

10. If I feel inadequate in some way, I remind myself that feelings of inadequacy are shared by most people.

	1	2	3	4	5
	Agree				Disagree

11. I feel disapproving and judgmental about my own flaws and inadequacies.

	1	2	3	4	5
	Agree				Disagree

12. I'm intolerant and impatient towards those aspects of my personality I don't like.

	1	2	3	4	5
	Agree				Disagree

APPENDIX G

Pro-Black Lives Matter Essay

Which Lives Matter? One Man's Opinion

Black Lives Matter is a social movement that was founded in 2012 after Florida neighborhood-watch coordinator, George Zimmerman, a white man, was found "not guilty" of the murder of Trayvon Martin, after he fatally shot the 17-year old African American student. Black Lives Matter campaigns against police brutality and legal injustice against African Americans in the United States. This movement has grown stronger after an increasing number of incidences of police brutality against people of color have been reported in the media since 2012.

Although there have been great strides to decrease discrimination of minority groups since the Civil Rights Movement during the 1960s, there still exists a strong divide between treatment of races in the United States, specifically in the legal system. The Black Lives Matter movement aims to address this divide by highlighting this inconsistent treatment to the public. Using traditional and social media, Black Lives Matter has drawn attention to the killings of people of color by police in the media, as these killings by police officers occur disproportionately against minorities. In order to shed light on these inconsistencies, Black Lives Matter have organized many peaceful protests and social media movements. On August 1st, 2016, Black Lives Matter protesters rallied against police brutality at City Hall Park in New York City where they released a list of changes they would like to see made by leaders in order to decrease violence against people of color. This list included ending criminalization, incarceration, and killing of people of color. It is my belief that these requests are reasonable within the legal framework through changes in the way we train our government officials, judicial officials, and police officers to treat people of color resulting in equal treatment among races.

In response to this movement, people have been using the phrase "All Lives Matter" on social media platforms. In my opinion, this response fails to recognize the important point that is addressed by Black Lives Matter, negating the movement's strive for equality. Although all lives of US citizens are important, not all lives experience equal treatment under the law. Black Lives Matter draws attention to the group that is receiving the disparate treatment, not negating the importance of fair treatment for all. All Lives Matter negates the fact that all lives are not treated equally and attempts to erase the importance of the struggles that people of color face in comparison to that of white people.

It is my belief that Black Lives Matter addresses important injustices in our society. Government officials and policy makers should confront the concerns of this movement and take into consideration the rights and freedoms of all people, of all races as they make laws that affect all US citizens.

APPENDIX H

Anti-Black Lives Matter Essay

Which Lives Matter? One Man's Opinion

Black Lives Matter is a social movement that was founded in 2012 after Florida neighborhood-watch coordinator, George Zimmerman, a white man, was found "not guilty" of the murder of Trayvon Martin, after he fatally shot the 17-year old African American student. Black Lives Matter campaigns against police brutality and legal injustice against African Americans in the United States. This movement has grown stronger after an increasing number of incidences of police brutality against people of color have been reported in the media since 2012.

There have been great strides to decrease discrimination of minority groups since the Civil Rights Movement in the 1960s and, because of this, there is no clear divide between treatment of races in the United States today. The Black Lives Matter movement is increasing the divide between the races by highlighting inappropriate treatment committed against blacks that all races face. Using traditional and social media, Black Lives Matter has drawn attention to the killings of people of color by police in the media, however, killings by police officers occurs across all races. In order to draw attention to their cause, Black Lives Matter has organized many protests and social media movements. On August 1st, 2016, Black Lives Matter protesters rallied against police brutality at City Hall Park in New York City where they released a list of changes they would to see made by leaders in order to decrease violence against people of color. This list included ending criminalization, incarceration, and killing of people of color. It is my belief that these requests are unreasonable within the legal framework as changes in the way we train our government officials, judicial officials, and police officers to treat people of color will result in preferred treatment between races.

In response to this movement, people have been using the phrase "All Lives Matter" on social media platforms. This response addresses an important point that this movement for equality must adapt to include all races in order to truly strive for equality. In order to decrease the divide between the races, we must treat them all equally. All lives of US citizens are important and experience equal treatment under the law. Black Lives Matter draws attention to the group that is already receiving equal treatment, and negating the importance of fair treatment for all. All Lives Matter helps demonstrate that all lives are and should be treated equally and attempts to shed light on the importance of the struggles that people of color and white people all face.

It is my belief that Black Lives Matter fails to address important injustices in our society. Government officials and policy makers should continue to take into consideration the rights and freedoms of all people, of all races as they make laws that affect all US citizens.

APPENDIX I

Emotion Measure

To what degree does each of the following describe your feelings after reading the newspaper article? Please indicate the appropriate number from 1 to 7.

<div align="center">
1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
</div>

Does not apply   Applies
at all   very much

1. Angry at myself _____
2. Angry at others _____
3. Guilty _____
4. Tense _____
5. Content _____
6. Annoyed with myself _____
7. Uneasy _____
8. Regretful _____
9. Anxious _____
10. Threatened _____
11. Irritated with others _____
12. Bothered _____
13. Good _____
14. Disgusted with myself _____
15. Uncomfortable _____
16. Self-critical _____
17. Disgusted with others _____
18. Shameful _____
19. Happy _____
20. Frustrated _____

APPEXDIX J

Essay Quality and Attitude Change

Please indicate the number that best corresponds to your answer to the following questions.

1. How well reasoned was the essay?

 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5 ---------- 6 ---------- 7 ---------- 8 ---------- 9
Very Poorly Done   Very Well Done

2. How strong are the arguments used by the author?

 1 ---------- 2 ---------- 3 ---------- 4 ---------- 5 ---------- 6 ---------- 7 ---------- 8 ---------- 9
  Very Weak   Very Strong

3. How convincing was the essay as evidence?

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5 ---------- 6 ---------- 7 ---------- 8 ---------- 9
Completely   Completely
Unconvincing   Convincing

4. A thoughtful and unbiased consideration of this essay should lead one to treat the essay as:

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5 ---------- 6 ---------- 7 ---------- 8 ---------- 9
Weak Evidence   Strong Evidence

5. .Relative to my opinion when the experiment started and before I had seen any of the experimental materials, my opinion at this point, given everything I have read, is:
-4 ---------- -3 ---------- -2 ---------- -1 ---------- 0 ---------- +1 ---------- +2 ---------- +3 ---------- +4
More Opposed   No Change   More in Favor of
To Black Lives Matter   Black Lives Matter

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CURRICULUM VITA

Antonia N. Santoro

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EDUCATION

M.A., Experimental Psychology
Towson University, Towson, MD
August 2015 – May 2017
B.S., Psychology, Magna Cum Laude
Towson University, Towson, MD
August 2011 - May 2015

HONORS

Certificate of Outstanding Service: Psi Chi Chapter President, May 2016
Psi Chi International Honor Society in Psychology, May 2014 - Present
Towson University Dean's List, May 2013 – May 2015

LEADERSHIP EXPERIENCE

Psi Chi Alumni Relations Officer, May 2016 – May 2017
Psi Chi President, May 2015 – May 2016
Psi Chi Secretary, January 2015 – May 2015

RESEARCH EXPERIENCE

ORISE Fellow, US Army Medical Research Institute of Chemical Defense
October 2016 – Present
Mentor: John McDonough, PhD

Social Psychology Lab, Towson University
January 2014 – May 2015
Supervisor: Geoffrey D. Munro, PhD

Yoga Research Lab, Towson University
May 2014 – May 2015
Supervisors: Alicia F. Bembenek, PhD, Evangeline Wheeler, PhD

CONFERENCE PRESENTATIONS

Clements, Z. A., **Santoro, A. N**., & Munro, G. D. (2017, January). *"The dean has a horrible beard!": The impact of persuasion techniques and logic on our perception of those with the same or differing opinions.* Poster presented at the annual meeting of the Society of Personality and Social Psychology, San Antonio, TX.

Santoro, A. N., Munro, G. D. (2016, April) *Mindfulness Meditation and Biased Emotional Responses to Controversial Issues.* Presented at the annual Towson University Research Expo, Towson, MD.

Santoro, A. N., Cates, K., Clark, S., Blandford, J. M., Hooper, P., & Kukucka, J. (2016, March). *Getting psyched about Psi Chi: Ideas for Invigorating Your Chapter.* Invited symposium presented at the annual meeting of the Association for Psychological Science, New York. NY.

Bembenek, A., **Santoro, A. N.,** Goldstein, S., Smith, C., Wheeler, E., Bennett, A., Dunagan, B., Cates, K., Carlson, F., & Schneider, A. (2015, May). *Investigation of the effects of yoga on heart rate, mood, and cognitive ability.* Poster presented at the annual meeting of the Association for Psychological Science, New York, NY.

Santoro, A. N. & Munro, G. D. (2015, May). *Effects of Opinion Congruence on Judgments of Source Wisdom.* Poster presented at the annual meeting of the Association for Psychological Science, New York, NY.

Santoro, A. N. & Munro, G. D. (2015, March). *Effects of Opinion Congruence on Judgments of Source Credibility.* Poster presented at the annual meeting of the Eastern Psychological Association, Philadelphia, PA.

PUBLICATIONS

Kukucka, J., **Santoro, A.,** Clark, S. Blandford, J, Cates, K., Hooper, P. Skeiky, L, & Milstein, J. L. (2016, Fall) A Year in the Life: A formula for sustaining an active chapter. *Eye on Psi Chi, 21*(1), 16-20.

TEACHING EXPERIENCE

Introduction to Psychology; Educational Psychology
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Graduate Teaching Assistant
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