Syracuse University

SURFACE

Syracuse University Honors Program Capstone Projects   Syracuse University Honors Program Capstone Projects

Spring 5-4-2015

Expanding Openness: The Effect of Actor Emotional Expression on Audience Openness to Experience

Amalia Golomb-Leavitt

Follow this and additional works at: https://surface.syr.edu/honors_capstone

Part of the Experimental Analysis of Behavior Commons

Expanding Openness: The Effect of Actor Emotional Expression on Audience Openness to Experience

A Capstone Project Submitted in Partial Fulfillment of the
Requirements of the Renée Crown University Honors Program at
Syracuse University

Amalia Golomb-Leavitt
Candidate for Bachelor of Arts Degree
and Renée Crown University Honors
May 2015

Honors Capstone Project in Psychology

Capstone Project Advisor: _____
Laura VanderDrift, Assistant Professor of Psychology

Capstone Project Reader: _____
Lawrence Lewandowski, Professor of Psychology

Capstone Project Reader: _____
Yvonne Smith, Assistant Professor of Social Work

Honors Director: _____
Stephen Kuusisto, Director

Date: April 22, 2015

Abstract

Commonly regarded as one of the Big Five domains of personality, openness to experience has the social potential to deepen group connection, increase team growth and performance, and strengthen diverse relationships. In the current study I hypothesize that emotional expression on the part of an actor has the potential to increase the levels of openness to experience of the audience. To test this hypothesis, I administered the Big Five Inventory (BFI-44) to assess baseline levels of openness to experience, randomly assigned participants to view either three videos high in levels of emotional expressivity or three videos low in emotional expressivity, and administered the same self-report measures of openness after these experiences. I then compared the levels of openness to experience endorsed by participants after experiencing the videos. My results support my hypothesis: participants who watched videos exhibiting high emotional expression showed significantly higher levels of openness than did participants who watched videos exhibiting low emotional expression. Ancillary analyses revealed that the impact of the videos on openness was significantly mediated by how much emotional expression the participant perceived the speaker to be displaying, rather than any other element of the videos (e.g., emotionality of the topic, warmth of the speaker). These findings have many practical implications for social and group situations, given the range of potential benefits that the literature suggests openness to experience has for individuals.

Keywords: Openness to Experience, Emotional Expression

Executive Summary

My capstone began with a set of experiences I had in a handful of classroom and other group settings. I noticed a phenomenon that was consistently taking place in classrooms and organizations in which we participants transcended our typical roles in the group (slightly passive, likely concerned with various technology or other tasks on our mind) to become actively engaged and connected with one another - even riveted, transformed, or recharged. In a sentence, what would happen is that one or more members of the group would be unusually emotionally honest - would shield nothing about their current state of emotion, despite the social taboo this move transgressed - and the atmosphere and attitudes in the room would change. Rather than feeling disconnected and irrelevant to each other, often strangers in a classroom setting, people in these settings began to feel connected to and receptive of one another; importantly, the myriad boundaries between us (cultural, societal, social, even just the fact that we did not know one another) seemed to dissolve in the presence of this emotional connection. This experience tended to happen when individuals in that group setting reached out to the rest of the group in specific ways - was openly genuine, honest, and deep in what they were saying. I wanted to understand this phenomenon because I was experiencing, firsthand, the positive and lasting benefits of being in its presence.

Thus began my search into the factors involved in these experiences. I started by looking at interpersonal connection, fueled by the belief that in interpersonal closeness we find our most fulfilling experiences and transformational moments, and that those lasting impacts may in fact play a significant role in our lives beyond the expected interpersonal affection. I wondered, for instance, whether closeness in group settings such as classrooms could catalyze educational benefits, or even improve individual mental health. I eventually realized, however, that closeness

was not the variable I had in mind; the factor present in all of the experiences I was examining was individual vulnerability in group settings.

Vulnerability is not discussed at length in the literature; in fact, the only person to write about it extensively is social worker and qualitative researcher, Brené Brown. Brown defines vulnerability as "uncertainty, risk, and emotional exposure," and describes it further as "the core of shame and fear and our struggle for worthiness, but ...also the birthplace of love, belonging, joy, courage, and creativity... the source of hope, empathy, accountability and authenticity" (2010; 2012). Vulnerability, as Brown depicts it, characterizes the qualities embodied by the individuals of whom I was in the presence when I felt profoundly connected and engaged to both that individual and our fellow group or class members. In my study, I referred to this notion of vulnerability as emotional expression, because in my opinion, the most significant aspect of vulnerability as Brown describes it is that concept of "emotional exposure". While measuring vulnerability as a predicting variable would be too large of a task to tackle in one study, emotional expression was a specific variable I could measure to then examine the corresponding outcomes thereof.

The outcome variable that I looked at in my study is "Openness to Experience", which lies at the foot of motivation. I came to realize in my research and reflection that the indescribable feeling I had experienced in classes or settings like those I have described, the feeling of connection, transformation, inquisitiveness, was really a motivation to learn, connect, and grow. In psychology, personality is discussed in terms of "The Big Five" umbrella personality characteristics, and one of these factors is Openness to Experience (John, Donahue, & Kentle, 1991). Openness to Experience (or openness) concerns aspects of intellect, curiosity, creativity, innovation, imagination, and independence; it can be described as a inquisition for "variety to experience and a permeability in consciousness" (McCrae & Costa, 1983; Connelly,

Ones, & Chernyshenko, 2014). Because openness is discussed mainly in personality psychology literature, it has only been previously discussed as a stable personality trait, not a state or condition which can change in response to certain things. In my work, I wanted to see whether openness could be more than just a personality trait and in fact a state of mind which I could actually cause by changing other factors. This seemed a lucrative endeavor considering the many positive experiences I have described associated with openness; in other words, if one can determine what predicts openness, one can accordingly learn how to shape group settings and dynamics to generate openness on a regular basis. As a byproduct, one can then create spaces in which people feel comfortable transgressing social and cultural boundaries to achieve inclusivity and openness to diverse opinions: attitudes directly associated with openness. Therefore, my hypothesis was that individuals that witnessed another individual's emotional expression would experience an increase in their own openness to experience from their original level of openness.

The study methodology was as follows: I began by narrowing down three clips of videos with speakers rated high in emotional expression and three videos with speakers rated low in emotional expression. Participants were randomly assigned to one of these two conditions (high or low emotional expression) before they began the study.

On beginning the study, participants completed questionnaires composed from the original Big Five Inventory, referenced earlier, and additionally from an expanded questionnaire containing more specific aspects of openness, called the NEO-PI-R (John, Donahue, & Kentle, 1991; Costa & McCrae, 1992). These questionnaires were administered to collect baseline data of the participants' levels of openness before watching their assigned videos so that I could compare it to their levels of openness after watching the videos. The participants then watched each of the three videos assigned to their condition. After completing the third video, they

answered the same questions as they did before the manipulation, from both the Big Five Inventory and the NEO-PI-R. Participants additionally completed 8 "reflection questions" pertaining to their impressions of the speaker's emotional expression; I asked these finals questions to gain insight into the participants' interpretations of how much each speaker expressed emotion, and additionally to compare participants' impressions between conditions of low or high emotional expression.

The results supported my initial hypothesis: participants in the high emotional expression condition reported higher openness to experience than those in the low emotional expression condition. I ran additional tests using the reflection questions to determine whether emotional expression itself was responsible for the increased openness to experience in participants in the high emotional expression condition, or whether something else in the video-watching experiencing experience could have predicted participants' higher openness levels. These tests confirmed that it was the emotional expression in that condition that predicted participants' higher openness levels.

I designed my project in this way because I wanted to tap into the experience members of a group go through when in the presence of someone being emotionally vulnerable with the group. I wanted to see whether that feeling of openness and connection I experienced in these moments was a generalizable occurrence - and if so, if I could learn how to replicate it so that people might learn how to better create spaces that invite such inclusivity, curiosity, and connection in their group dynamics. Because openness has only been studied as a stable trait of personality, this project was unique in testing whether openness could be predicted as the outcome of certain circumstances. Because my hypothesis was supported, it can potentially cause a reevaluation of openness to experience, one which could possibly consider openness as a state of mind that can be predicted as opposed to an inherent and stable personality trait. As such, this

reevaluation could lead the way for forthcoming research to examine many other aspects and potential predictors of openness to experience. More practically, these results can be hopefully utilized in tandem with previous research on benefits of openness to experience by group leaders and educators to inform additional research on state openness and encourage emotional expression in their teams, groups, classrooms so that the benefits of openness can be capitalized and expanded.

Table of Contents

Acknowledgments

I want to thank Laura VanderDrift for her support, encouragement, and guidance over the past two years. You have taught me a tremendous amount throughout this entire experience, always with a smile.

I also want to thank Professor Amardo Rodriguez for teaching such a spectacular class that three years later I decided to dedicate my capstone to figuring out what made that group experience so transformative.

Finally, I want to thank my incredible grandmother, Claire Golomb, for supporting me more than I could possibly imagine throughout not only the Capstone process but my entire educational career. I would never have come this far without you as an inspiration, Yaya.

Introduction

Consider classrooms, support groups, political think tanks, offices, or friend groups: these social settings are intricately laced with complex chains of actions and reaction, set in motion when individual members contribute or refrain from participation. These social settings do not only affect our relationships but also our intrapsychic states. In other words, our interactions affect more than our interpersonal relationships; they have the potential to shape our own states of mind.

In the present study, I examined such interactions, hypothesizing that one particular chain of behavior may have the profound ability to increase individuals' openness to experience, a factor of John, Donahue, & Kentle's (1991) Big Five Inventory (BFI-44) of personality traits, which is associated with intellectual curiosity, having an easily inspired spirit, and being open to diversity. For the purpose of clarity, I discriminate the order of behaviors referenced in group or dyad interactions by calling initial, individual actions, "actor" actions, and the subsequent interpersonal reactions to these behaviors, "audience" actions. As such, the current study tested whether emotional expression on the part of an actor has the potential to increase the levels of openness to experience of the audience, as the literature suggests that openness to experience has myriad benefits for individuals. I focused on actor emotional expression as a potential predictor of openness to experience because of its central role in interpersonal communication and connection, and its likelihood, based on the literature, of impacting audience attitudes, impressions, and experiences.

Emotional Expressivity

Emotional expression, or emotional expressivity, is defined by Gross and John (1995) to concern observable "behavioral (e.g., facial, vocal, postural) changes associated with the

experience of emotion, such as smiling laughing, frowning, storming out of a room, or crying."

The range of emotional expressivity is wide and indicates a corresponding range of intra- and

interpersonal processes (Friedman, Riggio, & Casella, 1988). Although, as stated, my goal was

to explore the interpersonal reactions to actor emotional expressivity, in order to examine

audience effects of emotional expressivity, it is prudent to first address factors that regulate actor

emotional expressivity.

To this end, Gross and John (1995; 1998b; 2002) have adapted a model developed by

others (Gross & Munoz, 1995; Ekman, 1972; Levenson, 1994; Plutchik, 1990) to illustrate the

intrapersonal processes involved in emotional expressivity. In this model, emotionally expressive

behavior follows internal or external input (e.g., actions, thoughts, memories, experiences) that

trigger an "emotion program" such as anger, amusement, or sadness. This emotion program in

turn activates "response tendencies," experienced as subjective feelings or physiological

changes, which may or may not be expressed as visible emotions. Gross and John (1995)

highlight "display rules" as a primary factor in predicting the vast diversity in levels of emotional

expressivity. They divide display rules into two subcategories, as the main mediating factors of

individual differences in emotional expressivity: (a) the socialization history of an individual's

group membership and of their relationship to their environmental and cultural background, and

(b) stable individual differences in subjective appraisals of the environment, i.e., general

individual inclinations towards experiencing certain feelings.

Relevant to the current study, Gross and John (1995) also report findings that directly

link actor emotional expression and the personality trait of actor openness: individuals who self-

reported as highly open were more likely to show positive emotional expressivity than to show

negative emotional expressivity, according to their Berkeley Expressivity Questionnaire (Gross,

John, & Richards, 2000). This reported relationship between openness and emotional expression

suggest the potential use of considering whether actor emotional expression predicts audience openness. In other words, what intrapersonal experience occurs for the audience *after* the actor undergoes the emotional expression process Gross and John describe?

The literature on audience effects of emotional expression centers largely on relational audience effects, that is, the effect an individual's emotional expression exerts on some aspect of the relationship, whether close or distant, between audience and that individual. One of these relational audience effects has been addressed by Heise (1989), who discusses the effects of emotion displays in terms of "character assessments," defined as the ways in which people interpret each other's behaviors, personalities, and actions. Heise's study of these character assessments indicates that the ways in which an individual emotionally reacts to events directly influence the judgments others make about that individual. These results are supported by Affect Control Theory, which posits that for any given situation, one already has an idea of what the appropriate emotional response is supposed to be; whether the actor in that situation responds in the way one deems appropriate determines whether one's character assessment of that actor will be positive or negative (Heise, 1989). Character assessments are an important variable when considering audience openness to experience as a potential outcome of actor emotional expressivity, because these character assessments may be related to how open a person becomes when witnessing an individual's emotional expression, how the emotion is expressed, or what type of emotion is being expressed.

Social rapport is another relational effect of actor emotional expressivity. Evidence has shown that certain types of emotional expression are most effective for developing social rapport; specifically, positive emotion expression has been shown to increase interpersonal connection, attraction, and intimacy (Bernieri, Gillis, Davis, & Grahe, 1996; Harker & Keltner,

2001; Tickle-Degnan & Rosenthal, 1990). Even physiologically, emotional expressivity has been shown to decrease cardiovascular stress-responding in response to supportive social behavior (Christenfield et al., 1997; Glynn, Christenfeld, & Gerin, 1999; Lepore, 1995; Lepore, Allen, & Evans, 1993).

These findings are in line with Laurenceau, Barrett, and Pietromonaco (1998), who hold that social (partner) supportive behavior, predicted by actor self-disclosure, leads to greater relational intimacy. Importantly, however, in their work, self-disclosure is discussed as the verbal disclosure of personal information, as opposed to disclosure of current state of emotion. Nevertheless, as Laurenceau, Barrett, and Pietromonaco (1998) demonstrate, a catalyst in the process of actor self-disclosure resulting in relational intimacy is the actor placement of trust in the partner, and it is not a far leap to consider emotional disclosure a similar placement of trust from actor to partner – or audience, in the context of the current study.

Emotional Suppression

Emotional suppression, or "expressive suppression," is also discussed in the literature in a context of audience effects of emotional expressivity (Butler et al., 2003). Defined as "the process of consciously inhibiting emotional expressions while emotionally aroused," Butler et al. (2003) discuss expressive suppression as a form of emotion regulation (J. J. Gross & Muñoz, 1995). Likewise to emotional expression, expressive suppression is mediated by "display rules" informed by cultural differences which may encourage or discourage displaying emotion to others (Gross & John, 1995). Expressive suppression as a form of emotion regulation is effectively the opposite of emotional expression, and thus it is logical that the myriad audience effects of expressive suppression are converse to those of emotional expression. I examined expressive suppression because, just as I believed audience reactions and openness levels could

be positively affected by actor emotional expressivity, I likewise believed audience openness could be negatively altered by the extent to which the actor is suppressing emotion.

Using Gross's (1995; 1998b; 2002) process model of emotion regulation as a guide, one can conceptualize expressive suppression as intercepting the "emotion program" after the program is triggered, but before the behavioral component of the emotional response is enacted, thus preventing external expression of the emotion, though not its subjective experience (Butler et al., 2003). People might suppress their emotional expression for a variety of reasons, among them impression management (Leary, 1995), personal judgment of the emotion (e.g., shame or embarrassment) (Brown, 2012), or as a defense mechanism when the emotion is too painful to deal with (Fraley, Davis, & Shaver, 1998). Various studies support that in social interaction, expressive suppression happens quite frequently (Gross & John, 2002).

Richards and Gross (1999; 2000) have found that expressive suppression increases cognitive load and hence decreases memory for social information that is accessible at the time of regulation. Accordingly, expressive suppression comes at the cost of attentive social interaction, due to cognitive distraction with the regulatory effort. Butler et al. (2003) discuss the social consequences of emotional suppression at length; first, social responsiveness decreases because of decreased attention, thus interpersonal coordination decreases and "the interaction breaks down." Additionally, uncomfortable interpersonal distance may result from lack of intimacy or social rapport, which stunts the development of social exchange.

Crucial is the fact that included in these findings concerning interpersonal communication are nonverbal communication, facial expression, voice intonation, and gesture; thus, whereas the present study did not concern verbal interpersonal interaction, the negative relational effects of expressive suppression were still relevant.

Openness to Experience

Having sufficiently explored emotional expressivity, emotional suppression, and its various interpersonal audience effects, I also investigated Openness to Experience, my outcome variable of interest. Openness to Experience is a factor of John, Donahue, and Kentle's (1991) Big Five Inventory (BFI-44) of personality traits, the most widely used scale in the analysis of personality. The BFI-44 scale was originally derived from factor definitions that John (1990) tested for common correlations; the factors tested consistently into five broad personality domains: Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Openness to Experience (hereon referred to as openness) concerns aspects of intellect, curiosity, creativity, innovation, imagination, and independence (Connelly, Ones, & Chernyshenko, 2014). In 1992, McCrae and Costa expanded the understanding of openness to emphasize, as well as other aspects of openness, "variety to experience and a permeability in consciousness."

There are many benefits of openness to experience that involve creativity, flexibility, inclusivity, and learning outcomes (Barrick, Mount, & Judge, 2001; McCrae, 1987; Poropat, 2009). Historically, openness has been considered an instrumental personality trait in influencing political attitudes (Jost, Glaser, Kruglanski, & Sulloway, 2003; McCrae, 1996; van Hiel & Mervielde, 2004), determining prejudice vs. openness to diversity (Homan et al., 2008; Sibley & Duckitt, 2009), and predicting success in academic and workplace education beyond general intelligence level (Barrick, Mount & Judge, 2001; Poropat, 2009). Connelly, Ones, and Chernyshenko (2014) suggest that the factors of openness that make it such an asset in educational settings are intellectual curiosity, need for cognition, and high levels of learning, goal orientation and study attitudes.

Originally investigated by Fiske (1949) and then significantly expanded by Goldberg (1990, 1992), openness is now sometimes conceptualized in terms of two subcomponents of corresponding traits: *experiencing* and *intellect*, the former referring to the artistic and imaginative aspects of openness and the latter to the creative, thoughtful, and inquisitive aspects of openness (Connelly, Ones, & Chernyshenko, 2014). McCrae and Costa (1992) deeply enhanced the understanding of openness to experience with their NEO Personality Inventory (NEO-PI-R), which expanded John, Donahue, and Kentle's (1991) BFI-44 measure of the openness factor into six facets of the factor. These facets, as summarized by Connely, Ones, and Cheryshenko (2014) are: (a) *intellectual efficiency*, which concerns the ability to process complex information, (b) *nontraditionalism*, which concerns the inclination towards liberal politics and unconventional moral values, (c) *curiosity*, which concerns an interest in exploring and understanding new information and experiences, (d) *introspection/depth*, which concerns personal reflection on philosophy, causes of behavior, and opportunities for personal growth, (e) *aesthetics*, which concerns an interest in, and responsiveness to, art and beauty, and finally, (f) *openness to sensations*, which concerns the desire to "savor a variety of sensory experiences."

The Current Study

Given the established personal and interpersonal benefits of openness to experience (i.e., increased inclusive mindset, higher learning outcomes, and more openness to new ideas and opinions), I believed it was a lucrative endeavor to identify experiences or situations that could predict openness as an outcome. However, openness has historically only been discussed as Fiske (1949) originally introduced it, as a personality trait; in the present paper, as well, all discussion of openness has been of its research as a trait. Although there was no precedent for considering openness a possible outcome variable - i.e., a state or condition rather than a stable

and inherent personality trait - I was interested in exploring whether openness to experience could also be predicted as a temporary state of mind that could change over time. To differentiate between these two considerations, I referred to openness as a stable personality trait as "trait openness" and openness as a predictable outcome "state openness."

The current study was based on findings that suggest a positive association exists between emotional expressiveness and openness to experience in interpersonal settings. In line with this association was the belief that openness can be influenced by human interactions, suggesting that it is not necessarily trait, but rather a state of mind. Together with the summarized literature, which suggests that emotional expression has positive intrapersonal effects on the actor, positive effects on the actor's social/partner relationships, and, most relevantly, a positive correlation with actor openness to experience (Gross & John, 1995), my study aimed to connect these findings to determine whether actor emotional expression predicts audience openness to experience. The current study investigated the following hypothesis:

> *Individuals who witness another individual's emotional expression will experience greater state openness to experience than will individuals in a control condition who are exposed to low levels of actor emotional expression.*

The study had one experimental factor with two levels (high emotional expression vs low). College students first completed a scale (a modified version of the Big Five Inventory (BFI-44); John, Donahue, & Kentle, 1991) measuring state level of openness to experience, and then were randomly assigned to watch videos either high in emotional expression or low in emotional expression (control condition). Finally, all students completed a subset of the same adaptation of the BFI-44. The hypothesis predicted that the levels of openness to experience endorsed by participants after the highly emotionally expressive experience would be higher than that endorsed by participants exposed to a control condition.

Method

Design and Participants. All participants ($N = 101$; 71% female and 29% male) received partial fulfillment of an introductory psychology course requirement in exchange for their participation. Participants ranged in age from 18-24 years old ($M = 19.08$, $SD = 1.24$), and the majority identified as heterosexual (94%, with 2% homosexual, 3% bisexual, and 1% other) and Caucasian/White (57%, with 27% Asian, 11% Black, 4% Hispanic, and 1% other). This study featured one between-participants experimental factor with two levels (emotion expression condition: videos with high emotional expression vs. videos with low emotional expression).

Pre-Testing. To create the experimental manipulation, I selected 24 video clips from talks exhibited on TEDtalks.com. TEDtalks.com is a website which hosts many talks about a vast variety of different topics given by researchers, authors, and other professionals from all over the world (Tedtalks.com). This pool of videos was selected to include talks that ranged in how much the speaker expressed their current emotional state, verbally or nonverbally. Then, this pool of videos was pilot tested on a small sample of four individuals for the levels of emotion expressed by the speaker, the levels of emotional content for each video, and how much each speaker appeared to have something to gain from their emotional expression. I removed all videos from the pool in cases where the pilot testers reported the speaker had something to gain from their emotional expression. The remaining pool of videos was narrowed down to only those that were rated for low level of emotional content to ensure it was emotional expression, not emotional content that accounted for subsequent effects. From this final pool, I selected the three videos that were rated highest in emotional expression for the high emotion expression condition

(*M*s range from *1.67-2.0*; Scale: 1-5) and the three videos that rated lowest in emotional

expression for the low emotion expression condition (*M*s range from *4.0-4.83*; Scale: 1-5).

Procedure. For the duration of the study, participants were seated in a private cubicle

equipped with a computer. Participants began by completing the measures described below (see

Pre-Manipulation Measures). Next, participants watched three short videos (ranging from 3-6

minutes) depending on their randomly assigned condition. In the high expression condition,

participants watched the three high emotion expression videos selected in the pilot test, whereas

in the low expression condition, participants watched the three low emotion expression clips

selected in the pilot test. To ensure the order of the videos was not a confounding variable, I

counterbalanced the presentation, such that equal number of participants saw each possible

ordering of the videos. After watching the third video, participants completed a selection of

questionnaires (see Post-Manipulation Measures) and a number of demographic items.

Pre-Manipulation Measures. Participants began by completing a modified version of

the Big Five Inventory (BFI-44) measure (John, Donahue, & Kentle, 1991). The measure

contains 44 items, denoting characteristics, in random order, of each of the five components of

personality types: extraversion, agreeableness, conscientiousness, neuroticism, and openness.

The original BFI-44 measures trait level openness, but because the study hypothesis examined

change in the state level of openness, I modified the instructions to assess state levels of the five

traits. Specifically, whereas the original BFI-44 instructions asked participants to indicate how

much they agree with a statement that begins "I am…", I asked participants to indicate how

much they agree with a statement that begins "Right now, I…". For example, "I am talkative"

became "Right now, I am talkative." State openness to experience is the key dependent variable

of interest in the current study, but I collected all five of the domains to assess the specificity of

the effect (i.e., the use of the BFI-44 allowed us to determine whether the manipulation of emotional expression uniquely impacts Openness to Experience, or whether the other dimensions were also impacted). All items were rated on a scale from 1 ("strongly disagree") to 5 ("agree completely") and evidenced acceptable reliability (openness $\alpha = .74$; extraversion $\alpha = .84$; neuroticism $\alpha = .78$; conscientiousness $\alpha = .69$; agreeableness $\alpha = .65$).

Next, participants completed a modified version of part of the Revised Neuroticism Extraversion Openness Personality Inventory (NEO-PI-R) measure (Costa & MacCrae, 1992). This measure contains 240 items in full, dividing into approximately 48 questions pertaining to each of the five original components of personality types (neuroticism, extraversion, etc.). For each personality component, the questions reference six different facets of that personality component. The participants completed only the section of the NEO-PI-R measure pertaining to openness to experience, so that I could better understand if certain facets of openness to experience might be predicted to a greater degree by watching videos in the high expression condition. As with the BFI-44, we modified this questionnaire to measure state openness, rather than trait openness. All items were rated on a scale from 1 ("strongly disagree") to 5 ("agree completely") and evidenced acceptable reliability (fantasy $\alpha = .74$; aesthetics $\alpha = .84$; feelings $\alpha = .78$; actions $\alpha = .69$; ideas $\alpha = .65$; ideas $\alpha = .65$).

Post-Manipulation Measures. After watching the three videos, participants completed shortened versions of the BFI-44 and the openness section of the NEO-PI-R. Specifically, they answered three questions assessing each dimension of the BFI-44 and three questions tapping each of the openness facets of the NEO-PI-R. After completing these questionnaires, participants additionally answered the following "reflection questions" for each of the three videos they

watched, rated on a scale ranging from 0 ("not at all"/"not much") to 5 ("very"/"a lot"): "How emotionally laden is the topic itself?", "How much emotion was the speaker expressing?", "How vulnerable did the speaker feel?", "How much was the speaker risking?", "How authentic/genuine did the speaker feel?", and "How warm was the speaker?" These questions were added to gain insight into the participants' interpretation of the speaker's level of emotional expression, as well as whether the participants' reactions to the speakers varied based on condition.

Results

Preliminary Analyses. Prior to conducting hypothesis tests, I first examined whether the BFI-44 dimensions differed at baseline as a function of the condition (i.e., whether random assignment had succeeded). I found that there were no differences of condition on baseline levels of agreeableness ($t(99) = 0.13$, $p > .80$), conscientiousness ($t(99) = -0.20$, $p > .80$), extraversion ($t(99) = 0.69$, $p > .40$), or neuroticism ($t(99) = 0.56$, $p > .50$). However, openness was nearly significantly higher in the high emotional expression condition than in the low emotional expression condition ($t(99) = -1.69$, $p = .09$). This was unexpected, as nothing had happened differently for participants in the two conditions by the time the baseline measure was collected. To account for this, all subsequent analyses were conducted controlling for baseline levels of the relevant BFI-44 dimension (e.g., analyses in which openness after watching videos was the dependent measure were conducted controlling for baseline openness). The pattern of results was unchanged when this covariate was removed.

Hypothesis Testing. To test my hypothesis (i.e., individuals who witness another individual's emotional expression will experience an increase in mindset of state openness to experience relative to individuals in a control condition who were exposed to low levels of actor emotional expression), I examined whether the post-manipulation measure of openness differed as a function of condition (high emotional expression vs low). To do so, I constructed a general linear model in SAS 9.4 PROC GLM, in which post-manipulation openness was predicted by baseline state openness and the expression condition. As hypothesized, post-manipulation openness was significantly higher in the high emotional expression condition ($M = 3.18$, $SD = 0.62$) than in the low emotional expression condition ($M = 2.83$, $SD = 0.55$; $F(1, 97) = 5.40$, $p = $

.02, $R^2 = .08$). Three of the remaining four BFI-44 dimensions did not differ significantly as a function of condition (agreeableness: $F(1, 97) = 0.33$, $p > .50$; extraversion: $F(1, 97) = 0.32$, $p > .50$; neuroticism: $F(1, 97) = 0.60$, $p > .40$). Conscientiousness, however, did ($F(1, 97) = 4.37$, $p = .04$, $R^2 = .02$).

Finally, I examined why the association between the high emotional expression condition and openness emerged. To do so, I tested a multiple mediation model in which the association between high emotional expression condition and openness was explained by perceptions of the speaker (i.e., the "reflection questions" summarized in the Methods). The model constructed simultaneously tests multiple mediated paths and employs bootstrap resampling to create confidence intervals around the estimated indirect effects (Preacher & Hayes, 2008). I constructed a model to examine the path from high emotional expression condition to openness, in which the association was potentially mediated by: 1) how emotionally laden the topic was, 2) how much the emotion the speaker expressed, 3) how vulnerable the speaker felt, 4) how much the speaker was risking, 5) how authentic/genuine the speaker felt, 6) how warm the speaker was. See the Figure for the visual depiction of the tested model. Looking at the indirect effects, results from bias corrected and accelerated 95% confidence intervals suggest that the indirect effect between the high emotional expression condition and openness through the perception that the speaker was expressing emotion was significantly different from zero [-0.4199, -0.0193]. None of the other indirect effects were significantly different from zero.

Supplementary Analyses. Prior to closing, I additionally examined which facets of openness were impacted by the manipulation. To do so, I conducted independent samples t-tests for each of the six facets of openness, assessing whether each differed as a function of the high emotional expression condition. Fantasy ($t(98) = -0.46$, $p > .60$), aesthetics ($t(98) = -1.42$, $p >$

.10), feelings ($t(98) = -0.17$, $p > .80$), actions ($t(98) = -0.02$, $p > .90$), and values ($t(98) = -0.02$, $p > .90$) all failed to differ as a function of the high emotional expression condition. Ideas, however, did, such that it was rated higher in the high emotional expression condition ($M = 3.89$, $SD = 0.58$) than in the low emotional expression condition ($M = 3.59$, $SD = 0.79$, $t(98) = -2.15$, $p = .03$). Additionally, I analyzed whether any of the facets were impacted by the condition after controlling for the baseline measure of that facet. To do so, I constructed a general linear model in SAS 9.4 PROC GLM in which post-manipulation scores for each of the six facets were held to be predicted by the baseline measurement of the same facet and the expression condition. No facets became significant upon addition of the baseline version, but ideas dropped to nonsignificant ($F(1,97) = 1.34$, $p > .20$).

Discussion

My results support my hypothesis in that participants who watched three videos exhibiting high emotional expression showed significantly higher openness than did participants who watched videos exhibiting low emotional expression. Furthermore, results from a multiple mediator model showed that the effect of high emotional expression on openness was significantly mediated by how much emotional the participants perceived the actor to have expressed; none of the five other mediators tested was significantly different from zero. In other words, my results support a model in which high emotional expression in the videos, rather than any other element (e.g., the vulnerability of the speaker, the emotionality of the topic) is the potent factor of the manipulation that predicted participants' subsequent self-reports of openness to experience.

These findings have a few immediate implications. Most central to my goals, my results suggest that, in interpersonal settings, expressing emotion rather than suppressing it may initiate an increase in the openness of surrounding people. These findings additionally call into question the stability of the trait of openness to experience, in that they suggest that openness to experience, previously only considered as a stable individual personality trait, can be manipulated by experiential circumstances. This implication may also foster a search for additional predictors of openness and thus open new avenues of productive research.

I expected that certain facets of participants' openness levels would be more significantly impacted than others as a function of the high emotional expression condition. However, the results of the six facet scales of participants' openness levels failed to distinguish significantly between the two emotional expression conditions. A likely interpretation of this absence of a significant effect might be stated in terms of Saucier and Ostendorf's (1999) observation that the

identification of only six facets cannot plausibly cover all of the possible aspects of a broad personality factor, a concession supported by the authors of the facet scales, who have stated that "the facets proposed are not the only possible ones" (Costa et al., 1991, p. 888). Thus, while participants' overall openness levels were significantly higher in the high emotional expression condition than in the control condition, the absence of such an effect for the specific facets suggests that these facets do not, in full, represent the aspect of openness that was changed as a result of viewing emotionally expressive speakers. Such an interpretation is compatible with Costa and McCrae's (1995) guidelines for the use of their NEO-PI-R scale, which emphasize that "facet scales are best at predicting the specific criteria at which they are aimed, but less than optimal at predicting other, albeit related criteria" (p. 46). Thus, no single facet will reflect an effect as strongly as will its corresponding broad personality domain.

As openness to experience is correlated with flexibility, inclusivity, openness to diversity, and intellectual curiosity (Barrick, Mount, & Judge, 2001; McCrae, 1987; Poropat, 2009; Homan et al., 2008; Sibley & Duckitt, 2009; Flynn, 2005), the increase in audience openness documented as a result of actor emotional expression may have the power to positively change the dynamics in both personal relationships and potentially group settings. Homan et al. (2008) elucidate some of these dynamic possibilities in their findings on openness to diversity in work teams, which report that individuals with high levels of openness to experience help their teams overcome negative effects of subgroup categorization (Hornsey & Hogg, 2000) and increase their team functioning and performance.

In light of the findings of Homan et al., I might postulate that other groups, in addition to work teams, would benefit from increased inclusivity and openness to diversity. Families,

support groups, political teams, and classrooms would likewise do well to value and appreciate diversity (of opinion, as well as background), so that they may bolster conflict resolution skills and create more inclusive, welcoming, and encouraging spaces. Classrooms in particular can benefit from the increased functioning and performance associated with high openness to experience, and do, as reported by Poropat (2009) and Connelly, Ones, and Chernyshenko (2014).

Having addressed some of the positive interpretations of my findings, I also consider limitations of the current study. One reconsideration of my procedure relates to Affect Control Theory's theorization of character assessments (Heise, 1989). As discussed in the Introduction, Affect Control Theory posits that one's character assessments of an individual are based upon how much that actor's emotional expression matches one's standard for the appropriate expression of that emotion. Because the speakers in the three videos in the high emotional expression condition were all conveying emotions considered conventionally "appropriate" for the speaker's topic, one may assume that participants developed positive character assessments of these individuals. Yet, one cannot know how much participants' subsequent openness levels have to do with these presumed positive character assessments. Further research may be advised to control for character assessment by ensuring emotional expression is conveyed to participants that is both "appropriate" for the topic and "inappropriate" to further assess the role of Affect Control Theory in predicting audience openness.

Another limitation of this research is the absence of a follow-up session after the immediate post-manipulation questionnaires to establish the duration of the effect, namely, how long the effect of the increase in participants' openness levels in the high emotional expression condition from those in the control condition was maintained. A fruitful direction for future work

might include this time dimension. Likewise, a behavioral outcome of openness would be an interesting avenue for future research: does my manipulation impact individuals' openness to diversity in a concrete, observable way?

It should be noted that although change from baseline openness to post-manipulation openness is not the change this study investigates, the post-manipulation levels of openness are, for both conditions, lower than the levels of openness collected at baseline (see the Table). The measures used differed (i.e., at baseline it was the full BFI-44 whereas post-manipulation is was a subset of the items), so I do not view these values as necessarily assessing an identical construct. Nevertheless, it is important to reflect upon why this difference may have been found. First, it is possible that the meaning of the scale changed from baseline to post-manipulation, such that participants rated the latter in terms of how they felt, *relative to how they felt before*. Second, it is possible that this decrease in openness is indeed "real". Future research would be needed to determine what elements of the study produced this lowering of openness, but I expect that being in a research lab, provided closed-ended responses to items may be, in and of itself, an openness-lowering experience. In that case, the fact that watching emotional expression can forestall the openness reduction caused by the limitations of the setting is noteworthy, and may be generalizable to other settings with similar limitations (e.g., classrooms, office settings, and other settings involving sitting inside watching someone speak). Regardless, to reiterate, the difference in post-manipulation openness revealed by my results was found controlling for baseline levels of openness - in other words, regardless of where the participants started on the scale, having watched an emotionally expressive speaker resulted in greater openness to experience than did watching a speaker low in emotional expressiveness.

Along these lines, I recognize that my experimental design is not an exact replica of real-life scenarios. Because I did not control for speaker gender, attractiveness, racial background, and other potential variables, there is room for unexplained variance that could potentially have influenced my findings. Additionally, although the demographic makeup of my sample reflects the demographic of the university population, it does not reflect the demographic makeup of the population at large; thus, the effects shown in my study are generalizable to the university but not necessarily to a population with more heterogeneous socioeconomic status, cultural background, etc. As such, although my results suggest that actor emotional expression predicts audience openness to experience, I cannot be sure that my findings are generalizable to real group or dyad settings until they are tested in actual group or dyad settings. Future work would be advised to explore this possibility in a focus group setting with confederate actors expressing both high and low levels of emotion, and testing my findings in a real-world setting with a wider array of stimuli material may be helpful, both to explore whether the aforementioned decrease from baseline openness is a product of the lab room setting and to test the generalizability of my results.

One last consideration, not of my study design but of my linguistic choices, draws from an anthropological perspective, which suggests that rather than address the salient aspect of the manipulation as the actor's *emotional expression* predicting audience openness to experience, one should instead conceptualize this aspect as *emotional performance*. This shift from expression to performance suggests a difference in origin of the actor's visual expression. Whereas calling the experience *emotional expression* implies that one can be positive that the actor is expressing genuine emotions, conceptualizing it as *emotional performance* acknowledges that audience, as outsiders, only sees what the actor is performing; it is an assumption (and perhaps a misnomer) to suggest that the emotion audience sees authentically

expresses what the actor is experiencing internally. This consideration should not materially affect the significance of the findings, as the study is interested in the reception of the action on the part of the audience rather than the authenticity on the part of the actor, which is not tested or addressed in this study. However, I find it useful clarify this piece so that my findings' implications are not misattributed to authentic actor expression when I cannot make this claim.

In conclusion, my findings highlight and expand the possibilities for examining and predicting a socially useful and desirable characteristic, openness to experience. This study suggests the potential value of considering openness as a state in addition to a trait, suggesting the possibility for manipulating openness in a variety of contexts. This may be of use to researchers interested in increasing openness levels of members in group settings, environments where openness has been reported in the literature to be advantageous. Although the discussed limitations apply, my research suggests that exposure to high levels of actor emotional expression increases audience openness to experience. Furthermore, the mediation model illustrated in the Results further validates that the participant variance in the post-manipulation was specifically related to the actor emotional expression in the high emotional expression condition, rather than the content, etc. With additional research, the relationships between emotional expression and state openness might be applied to various settings to a number of real world interactional contexts. For example, classrooms, support group settings, workplaces, and teams could all potentially benefit from the impact of openness on inclusivity, openness to diverse opinions, flexibility, and intellectual curiosity.

References

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment, 9*(1-2), 9-30.

Brené brown: The power of vulnerability. Brown, B. (Director). (2010, June).[Video/DVD] Houston:

Brown, B. (2012). *Daring greatly: How the courage to be vulnerable transforms the way we live, love, parent, and lead.* New York: Penguin.

Brown, B. (2012). *The power of vulnerability: Teachings on authenticity, connection, & courage.* Sounds True.

Butler, E. A., Egloff, B., Wlhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion, 3*(1), 48.

Chamorro-Premuzic, T., & Furnham, A. (2009). Mainly openness: The relationship between the big five personality traits and learning approaches. *Learning and Individual Differences, 19*(4), 524-529.

Connelly. (2014). Introducing the special section on openness to experience: Review of openness taxonomies, measurement, and nomological net. *Journal of Personality Assessment, 96*(1), 1; 1-16; 16.

Connelly, B. S., Ones, D. S., & Chernyshenko, O. S. (2014). Introducing the special section on openness to experience: Review of openness taxonomies, measurement, and nomological net. *Journal of Personality Assessment, 96*(1), 1-16.

Costa, P. T., & MacCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO FFI): Professional manual* Psychological Assessment Resources.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*(1), 113.

DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197.

Digman, J. M. (1997). Higher-order factors of the big five. *Journal of Personality and Social Psychology, 73*(6), 1246-1256. doi:10.1037/0022-3514.73.6.1246

Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska symposium on motivaton* (pp. 207-283). Lincoln: University of Nebraska Press. doi:1971

Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. *The Journal of Abnormal and Social Psychology, 44*(3), 329.

Fraley, R. C., Davis, K. E., & Shaver, P. R. (1998). Dismissing-avoidance and the defensive organization of emotion, cognition, and behavior. *Attachment Theory and Close Relationships, ,* 249-279.

Friedman, H. S., Riggio, R. E., & Casella, D. F. (1988). Nonverbal skill, personal charisma, and initial attraction. *Personality and Social Psychology Bulletin, 14*(1), 203-211.

Goldberg, L. R. (1990). An alternative" description of personality": The big-five factor structure. *Journal of Personality and Social Psychology, 59*(6), 1216.

Goldberg, L. R. (1992). The development of markers for the big-five factor structure. *Psychological Assessment, 4*(1), 26.

Gross, J., John, O., & Richards, J. (2000). The berkeley expressivity questionnaire. *Commissioned Reviews on, 300*, 465-467.

Gross, J. J., & John, O. P. (1995). Facets of emotional expressivity: Three self-report factors and their correlates. *Personality and Individual Differences, 19*(4), 555-568.

Gross, J. J., & Muñoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice, 2*(2), 151-164.

Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations.

Gross, J. J., & John, O. P. (2002). Wise emotion regulation. In L. F. Barrett P. Salovey (Ed.), (pp. 297-319). New York, NY, US: Guilford Press.

Heise, D. R. (1989). Effects of emotion displays on social identification. *Social Psychology Quarterly,* , 10-21.

Hiel, A. V., & Mervielde, I. (2004). Openness to experience and boundaries in the mind: Relationships with cultural and economic conservative beliefs. *Journal of Personality, 72*(4), 659-686.

Homan, A. C., Hollenbeck, J. R., Humphrey, S. E., Van Knippenberg, D., Ilgen, D. R., & Van Kleef, G. A. (2008). Facing differences with an open mind: Openness to experience, salience of intragroup differences, and performance of diverse work groups. *Academy of Management Journal, 51*(6), 1204-1222.

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). The big five inventory—versions 4a and 54. *Berkeley: University of California, Berkeley, Institute of Personality and Social Research,*

Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*(3), 339.

Laurenceau, J., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology, 74*(5), 1238.

Leary, M. R. (1995). *Self-presentation: Impression management and interpersonal behavior.* Brown & Benchmark Publishers.

Levenson, R. W. (1994). Human emotion: A functional view. In Ekman, P. & Davidson, R. J. (Ed.), *The nature of emotion: Fundamental questions.* (pp. 123-126). New York: Oxford University Press.

McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology, 52*(6), 1258.

McCrae, R. R. (1996). Social consequences of experiential openness. *Psychological Bulletin, 120*(3), 323.

McCrae, R. R., & Costa Jr, P. T. (1997). Conceptions and correlates of openness to experience.

McCrae, R. R., & Costa, P. T. (1983). Joint factors in self-reports and ratings: Neuroticism, extraversion and openness to experience. *Personality and Individual Differences, 4*(3), 245-255.

Plutchik, R. (1990). Emotions and psychotherapy: A psychoevolutionary perspective. *Emotion, Psychopathology and Psychotherapy, , 3-42.

Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin, 135*(2), 322.

Sibley, C. G., & Duckitt, J. (2009). Big-five personality, social worldviews, and ideological attitudes: Further tests of a dual process cognitive-motivational model. *The Journal of Social Psychology, 149*(5), 545-561.

Appendix

Table: Openness to experience as a function of emotional expression condition

Openness to experience			Baseline			Post-manipulation				
	N	*M*	*SD*	*t*	*p*	*M*	*SD*	*F(1, 97)*	*p*	R^2
Overall group	99			-1.69	.09			5.40	.02	.08
Low Emotional Expression Condition	53	3.29	.5			2.83	.55			
High Emotional Expression Condition	48	3.47	.55			3.18	.62			

Figure: Association between emotional expression condition and levels of openness as mediated by actor emotional expressivity.
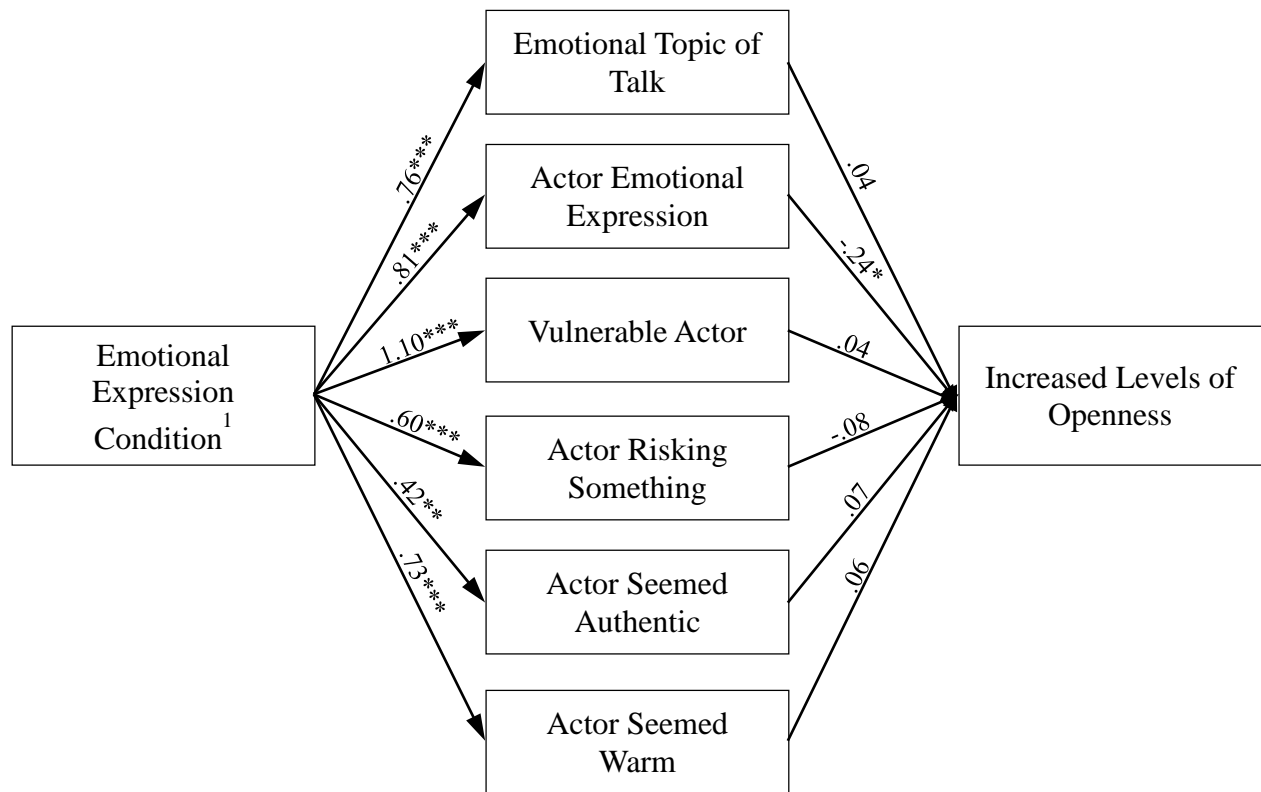
Note. Values represent unstandardized coefficients. *** p < .001, ** p < .01, * p < .05

[1]Condition is coded such that 0 = low emotional expression condition and 1 = high emotional expression condition.