UNIVERSITY OF CALIFORNIA

Santa Barbara

With Us or Against Us: Regulating Others' Group-Based Emotions

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Psychological and Brain sciences

by

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June 2024

The dissertation of Vinnie C. Wu is approved.

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June 2024

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Throughout my time at UCSB, the Close Relationships Lab and the Intergroup Relations Lab have given me invaluable feedback. Both lab groups have brilliant members with amazing insights, and I am thankful for their time, comments, and support.

None of this research would have been possible without my research assistants. These superstars have all been so hard-working and thoughtful, and they have provided invaluable contributions instrumental to the completion of this dissertation. I am confident that they will accomplish all that they set out to do because they have shown me that they are more than capable. I am honored to have been part of their academic journeys.

I also would like to acknowledge the financial support from the National Science Foundation Graduate Research Fellowship Program and the UCSB Graduate Division Doctoral Scholars Fellowship, allowing me to have academic freedom and additional time to dedicate to this research.

Next, I am so grateful to all my fellow graduate students, current and graduated, who have mentored me, helped me study for qualification exams, collaborated with me while learning R, and so much more. In particular, I would like to thank Dr. Anudhi P. Munasinghe for her instrumental and emotional support throughout graduate school and beyond. I am extremely appreciative of our work parties, in awe of how awesome an auntie she is to my kids, and so glad to have her in my life.

I would also like to thank my parents for having provided me with opportunities that have allowed me to pursue this degree. I appreciate their sacrifices that have allowed me to become the person that I am. This has been a long journey, and I would not be here without them. In this way, I am so grateful to have a role model in my big brother, Dr. Weber C. Wu, who is the useful kind of doctor.

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sure that we are well-fed, that there are clean clothes for the week, that we feel loved, and the list goes on and on. He does the little things and the big things. My heart is so full of gratitude and love for his unwavering support and everything he does for the family. Thank you for always believing in me and celebrating me.

Finally, I would like to dedicate this manuscript to my children, Cassie and Emmett (currently ages 6.5 and 2 years old, respectively). To Cassie and Emmett, you two are my inspirations to succeed, and I hope you both can pursue your educational and career dreams as I have been able to. Cassie, you have the most curious and imaginative mind. Already, you ask the most thoughtful questions, and you have the kindest heart to create some good in this world. Emmett, you are delightful with a strong will, and I know you will persevere at anything you set your mind to while keeping a positive attitude. The best part of my day is always when I get to see you two smile and simply enjoy life. Your love has been the best encouragement.

VITA OF VINNIE C. WU
2024

EDUCATION

University of California – Santa Barbara (UCSB) 2019-2024
Ph.D., Psychological & Brain Sciences: Social Psychology
Emphasis in Quantitative Methods for Social Sciences
Co-advisors: Shelly Gable, Diane Mackie
Dissertation: With us or against us? Regulating others' group emotions

University of California – Santa Barbara 2017-2019
M.A., Psychological & Brain Sciences: Social Psychology
Co-advisors: Shelly Gable, Diane Mackie
Master's Thesis: Success or failure? How feedback influences intergroup interaction quality through motivational goal orientations and emotional reactions

University of California – Irvine (UCI) 2011-2013
B.A., Psychology & Social Behavior, magna sum laude
Advisor: Jutta Heckhausen
Honors Thesis: Shared agency in academic motivation and achievement

HONORS AND AWARDS

Abdullah (Al) and Marjorie R. Nasser Graduate Student Memorial Scholarship	2022
Society for Affective Science Trainee Diversity Award	2022
National Science Foundation Graduate Research Fellowship, $34,000/year, 3 years	2019-2022
UCSB Grad Slam Finalist, $800, UCSB	2019
Methods University Statistical Workshop Scholarship, $200/year, 2 years, UCSB	2018, 2019
Doctoral Scholars Fellowship, $24,000/year, 3 years, UCSB	2017-2022
"Best Student" Excellence in Research Award in the School of Social Ecology, $200, UCI	2013
Undergraduate Research Opportunities Program Grant/Fellowship, $1,000, UCI	2012-2013
Social Ecology Honors Program with Excellence in Research, UCI	2012-2013
Undergraduate Research Opportunities Program Grant/Fellowship, $1,000, UCI	2011-2012
Regents' Scholarship, $2,000 for 2 years, UCI	2011-2012
Amy and Dan Stump Memorial Scholarship for Distinguished Achievement in the Social Sciences, $300, Fullerton College	2011

RESEARCH EXPERIENCE

Research Analyst 2022-Present
San Bernardino Valley College (SBVC)
Analyze collegewide surveys to propose actionable changes to college administrators; present results and conclusions to non-scientific audiences orally and in written reports; collaborate with administrators, faculty, and classified professionals to gather data for research requests

Graduate Student Researcher 2017-2024
Emotion, Motivation, Behavior, and Relationships (EMBeR) Lab, UCSB
Social Evaluations and Emotions Lab, UCSB
Advisors: Shelly Gable, Ph.D., Diane Mackie, Ph.D.
Propose and implement multiple projects on the role of motivational orientations and emotions in intergroup interactions; supervise undergraduate researchers

Undergraduate Student Researcher 2012-2013
Life-Span Development and Motivation Lab, UCI
Advisors: Jutta Heckhausen, Ph.D., Brandilynn Villarreal, Ph.D.
Designed a research study exploring shared agency with parents on academic motivation and achievement; collected, organized, and scored data of over 400 participants using Microsoft Excel; analyzed results to draw conclusions from data using SPSS; presented research at undergraduate and national conferences

Research Assistant 2011-2012
Goldberg Family Lab, UCI
Advisors: Wendy A. Goldberg, Ph.D., Agnes R. Ly, Ph.D.
Worked on various lab projects, including participant recruitment, home visits, data scoring, data entry, and data analysis on children with autism spectrum disorders and neurotypical children; presented research at undergraduate conference

RESEARCH PUBLICATIONS

Kriegbaum, K., Villarreal, B., **Wu, V. C.,** & Heckhausen, J. (2016). Parents still matter: Patterns of shared agency with parents predict college students' academic motivation and achievement. *Motivation Science, 2,* 97-115. doi: 10.1037/mot0000033

RESEARCH PRESENTATIONS

Symposia

Wu, V. C. (2023, April). *Deciphering specific emotions in texts.* Public presentation at the UCSB Quantitative Methods in the Social Sciences Colloquium, Santa Barbara, CA.

Wu, V. C., Gable, S. L., & Mackie, D. M. (2022, March). *Emotions in the COVID-19 Pandemic: How the Media Regulated Americans.* Public presentation at the Society for Affective Science Symposium, virtual conference.

Wu, V. C. (2020, September). *Intergroup interactions: Approaching success or avoiding failure?* Public presentation at the University of California, Santa Barbara Graduate Lunch and Learn Talk Series, Santa Barbara, CA.

Wu, V. C. (2019, May). *Let's get together (or not): Motivations for intergroup interactions*. Paper presented at the University of California, Santa Barbara Graduate Student Mini Convention, Santa Barbara, CA.

Wu, V. C. (2019, May). *Motivation matters: Are positive intergroup interactions really positive?* Public presentation at the University of California, Santa Barbara Grad Slam Competition, Santa Barbara, CA.

Villarreal, B., Kriegbaum, K., Heckhausen, J., & **Wu, V. C.** (2015, April). *The role of shared/non- shared agency in college motivation and achievement.* Paper presented at the Annual Meeting of the Western Psychological Association, Las Vegas, NV.

Wu, V. C., Villarreal, B., & Heckhausen, J. (2013, May). *Shared agency in academic motivation and achievement.* Paper presented at the 20th Annual University of California, Irvine Undergraduate Research Symposium, Irvine, CA.

Wu, V. C., Chanes-Mets, C., Ly, A. R., & Goldberg, W. A. (2012, May). *Interparental agreement on reports of adaptive and maladaptive behaviors in children with autism spectrum disorders and neurotypical children.* Paper presented at the 19th Annual University of California, Irvine Undergraduate Research Symposium, Irvine, CA.

Poster Presentations **(*indicates undergraduate student)**

Wu, V. C., Mackie, D. M. & Gable, S. L. (2023, February). *For pleasure or purpose: Emotion regulation goals for ingroup and outgroup members.* Poster presented at the Society for Personality and Social Psychology Symposium, Atlanta, GA.

Wu, V. C., Gable, S. L., & Mackie, D. M. (2022, February). *Regulating others' emotions: How media sources influenced Americans' emotions during the COVID-19 pandemic.* Poster presented at the Society for Personality and Social Psychology Symposium, San Francisco, CA.

Ostrander, K.*, **Wu, V. C.,** & Gable, S. L. (2022, February). *The effects of motivational orientations on regulating others' emotions in close relationships.* Poster presented at the Society for Personality and Social Psychology Symposium, San Francisco, CA.

Delzio, M. D.*, **Wu, V. C.,** & Gable, S. L. (2021, May). *The effect of adverse childhood experiences on social goals.* Poster presented at the Association for Psychological Sciences Symposium, Washington D.C.

Delzio, M. D.*, **Wu, V. C.,** & Gable, S. L. (2021, April). *The effects of adverse childhood experiences on relationship social motives.* Poster presented at the Society for Affective Science Symposium, Madison, WI.

Veloz, V.*, **Wu, V. C.**, Mackie, D. M. (2020, September). *Feedback and emotions: Ethnicity as a moderator.* Poster accepted at the Western Psychological Association Symposium, San Jose, CA.

Wu, V. C., Mackie, D. M., & Gable, S. L. (2020, May). *Emotions in intergroup interactions: The role of feedback and motivational orientations.* Poster presented at the Society for Affective Science Symposium, San Francisco, CA.

Wu, V. C., Mackie, D. M., & Gable, S. L. (2020, February). *Approaching success or avoiding failure in intergroup interactions.* Poster presented at the Society for Personality and Social Psychology Symposium, New Orleans, LA.

Duarte, K.*, **Wu, V. C.**, Gable, S. L., & Mackie, D. M. (2020, February). *Personality moderates feedback and emotions in intergroup interactions.* Poster presented at the Society for Personality and Social Psychology Symposium, New Orleans, LA.

Wu, V. C., Gable, S. L., & Mackie, D. M. (2019, February). *The role of motivational orientations and emotions in intergroup interactions.* Poster presented at the Society for Personality and Social Psychology Symposium, Portland, OR.

Villarreal, B., Kriegbaum, K., **Wu, V. C.,** & Heckhausen, J. (2015, March). *Shared and non-shared agency as predictors for academic achievement and motivation.* Poster presented at the International Convention of Psychological Science Symposium, Amsterdam, The Netherlands.

Wu, V. C., Villarreal, B., Heckhausen, J., & Kriegbaum, K. (2015, February). *Shared and non- shared agency in academic motivation and achievement.* Poster presented at the Society for Personality and Social Psychology Symposium, Long Beach, CA.

Wu, V. C., Villarreal, B., & Heckhausen, J. (2013, May). *Effects of shared agency with parents on students' academic motivation and achievement.* Poster presented at the Society for the Study of Motivation Symposium, Washington, D.C.

TEACHING EXPERIENCE

Teaching Associate 2020-2021
Department of Psychological and Brain Sciences at UCSB, Santa Barbara, CA

Research Methods (lower-div, lab sections) Summer 2021
Introductory Statistics (lower-div, lab sections) Summer 2021
Social Influence (upper-div) Fall 2020
Instructed an asynchronous online course for 124 undergraduate students, covering the theories and research of why, how, and when people are influenced by others, and why, how, and when people may be able to resist such influence
Emotions (upper-div) Summer 2020
Created an accelerated hybrid synchronous and asynchronous online course for 44 undergraduate students, covering the functions of human emotions, the roles of brains, bodies, individual differences, group memberships, and cultures in emotion, and how people can control or change emotions

Learning Glass Graduate Student Assistant for Statistics 2019
Department of Psychological and Brain Sciences at UCSB, Santa Barbara, CA
Advisor: Nicole A. Albada, Ph.D.
Wrote video scripts for instructional videos explaining how to hand calculate core statistical concepts for undergraduates; planned and created instructional media to be used by all students taking undergraduate statistics in psychology

Teaching Assistant 2018-2020
Department of Psychological and Brain Sciences at UCSB, Santa Barbara, CA
Led weekly discussion sections and exam review sessions; managed attendance and gradebook; graded assignments, papers, and examples; held weekly office hours
With lab sections: Research Methods (3x), Statistics
Without lab sections: Social Influence, Language and Thought, Psychology of Choice

Discussion Leader 2012
Freshman Summer Start Program at UCI, Irvine, CA
Led a class of 19 students; created lesson plans for hour long discussion sections designed to motivate incoming freshmen students; constructed guides and worksheets to help students find their routes to success in college

GUEST LECTURES

Wu, V.C. (2023, September). *Using Qualtrics as a Research Tool.* Guest lecturer in a Research Methods class at San Bernardino Valley College, San Bernardino, CA.

Wu, V.C. (2023, March). *Using Qualtrics as a Research Tool.* Guest lecturer in a Research Methods class at San Bernardino Valley College, San Bernardino, CA.

Wu, V. C. (2019, November). *Motivation.* Guest lecturer in an Introduction to Psychology class at Westmont College, Santa Barbara, CA.

Wu, V. C. (2019, November). *Emotion: Classic and contemporary theories.* Guest lecturer in an Introduction to Psychology class at Westmont College, Santa Barbara, CA.

Wu, V. C. (2019, April). *Emotion: The what, how, and why.* Guest lecturer in an Introduction to Psychology class at Westmont College, Santa Barbara, CA.

Wu, V. C. (2019, May). *Flow and intrinsic motivation*. Guest lecturer in a Positive Psychology class at Westmont College, Santa Barbara, CA.

TEACHING PRESENTATIONS

Wu, V. C. & Papadakis, V. (2021, October). *Harnessing field-specific knowledge: Transforming graduate students into peer writing tutors.* International Writing Centers Association Annual Conference, online.

Wu, V. C. & Alea, N. (2020, October). *LearningGlass: Using video lectures to teach undergraduate statistics.* UCSB Engaging Teaching Symposium, Santa Barbara, CA.

Wu, V. C. (2020, September). *Breaking the monotony: Incorporating questions to increase video engagement in asynchronous online lectures.* UC Psychology Teaching & Learning Conference, Santa Barbara, CA.

MENTORING EXPERIENCE

Graduate Scholars Program Mentor 2020-2023
UCSB Graduate Division, Santa Barbara, CA
Mentor nine underrepresented and first-generation students transitioning to their first and second year of the doctoral program; meet with mentees to discuss their transition into graduate school, including connecting with advisors, beginning a research plan, and campus resources

Graduate Research Fellowship Program Writing Peer Consultant 2020-2022
UCSB Graduate Division, Santa Barbara, CA
Consult with undergraduate and graduate students to improve their personal and research statements for the NSF Graduate Research Fellowships Program

Peer Mentor for Graduate Students 2019-2022
Graduate Student Peer Mentorship Program at UCSB, Santa Barbara, CA
Mentor 9 first-year graduate students in the Psychological and Brain Sciences; meet one-on-one with mentees to discuss their transition into graduate school, including connecting with advisors, beginning a research plan, and campus resources

Graduate Mentor for Undergraduate Students 2017-2022
Access Grads at UCSB, Santa Barbara, CA

Guide psychology undergraduate students who interested in graduate school on potential career paths post-graduation; meet one-on-one and in groups with mentees; discuss different degrees, application processes, and graduate student experiences

Research Mentor for Undergraduate Students 2017-2024
Undergraduate Research Creative Activities Program at UCSB, Santa Barbara, CA
Supervise independent year-long research projects from high-achieving undergraduates; work one-on-one with students to write a grant and prepare them to present at their first research conference
Students: Kennedy Abramson (PhD student, Clinical Psychology, Palo Alto University), Vanessa Veloz, Natalie Beylin (PhD student, Health Psychology, UC Merced), Molly Delzio, Katrina Ostrander

Research Mentor for Undergraduate Students 2017-2018
Society for Personality and Social Psychology Summer Program for Undergraduate Research, Santa Barbara, CA
Mentor first-generation and underrepresented minority students interested in graduate school in social psychology in an eight-week intensive research program
Students: Thao Pham (MA, Social Ecology, UC Irvine), Krystal Duarte (PhD student, Experimental Psychology, Oklahoma State University)

Peer Educator 2012-2013
Transfer Student Center at UCI, Irvine, CA
Mentored transfer students in their transition to a new university; facilitated respectful discussions amongst diverse groups of students; led workshops to help transfer students succeed academically and socially; created media, including flyers and pins, to assist with student outreach

UNIVERSITY/COLLEGE/COMMUNITY SERVICE

Meetings Co-Coordinator 2023-Present
CAMP Regional Research Group, RP Group

Classified Senate Representative 2023-Present
Curriculum Committee, SBVC

Graduate Student Representative 2021-2022
Diversity, Equity, Inclusion Committee, Department of Psychological and Brain Sciences, UCSB
Assess departmental climate with a survey sent to faculty, staff, and graduate and undergraduate students; develop a strategy to diversify the departmental speaker series; propose and clarify mentoring guidelines for the retention of graduate students

PROFESSIONAL DEVELOPMENT

Institutional Research

RP Group Qualitative Research Techniques for the Equity-Minded Change Agent: 6-series workshop, SBVC	2024
RP Group Leading from the Middle Program, SBVC	2023-2024
California Community Colleges Strategic Enrollment Management Program, SBVC	2023-2024

Teaching Pedagogy

College and University Teaching: 10-week course, UCSB	2021
Summer Teaching Institute for Associates, UCSB	2020
Psychological and Brain Sciences Summer Teaching Workshop, UCSB	2020, 2021
Pillars of Teaching Assistantship: 6-series workshop, UCSB	2019-2020
UC Psychology Teaching and Learning Conference, UCSB	2019, 2020
Graduate Teaching Symposium, UCSB	2019
Teaching Assistant Training Program: a year-long training program for new teaching assistants, UCSB	2017-2018

Research Methodology

Workshop on Psycho-Physiology, UCSB	2020
Hierarchal Linear Modeling, UCSB	2019
BIOPAC Systems Inc.: Good, Better, Best: Options for Subject Prep	2019
Agent-Based Modeling, a seven-series workshop in R, UCSB	2019
Methods University: An Introduction to Latent Class Analysis, a two-day statistical methods workshop, UCSB	2019
UCSB Library Software Carpentry Workshop in Python, UCSB	2019
BIOPAC training, two-series workshop on physiological measures, UCSB	2018
Methods University: Causal Inference with Bigger and Richer Data, a two-day statistical methods workshop, UCSB	2018
Quantitative Methods in the Social Sciences colloquium series, UCSB	2018
Workshops on R, quarterly workshop, UCSB	2017-2018
Workshop on Psych-Physiology, a three-day workshop on physiological measures, UCSB	2017

PROFESSIONAL AFFILIATIONS

Asian Pacific Americans in Higher Education	2024-Present
Research and Planning Group for California Community Colleges	2023-Present
International Writing Center Association	2021-2022
Society of Affective Science	2019-2022
Society of Personality and Social Psychology	2018-2023
Society for the Study of Motivation	2013

ABSTRACT

With Us or Against Us: Regulating Others' Group-Based Emotions

by

Vinnie C. Wu

People often modify their emotional responses through the process of emotion regulation (Gross, 1998) for hedonic or instrumental goals (Tamir, 2016). However, these emotion regulation processes can differ based on: (1) whether the emotions are based on one's group membership (i.e., group-based) or not (i.e., individual-based), and (2) whether another person is involved in this emotion regulation process (i.e., interpersonal) or not (i.e., intrapersonal). Less research has examined how group-based emotions are regulated with others, particularly how group members influence others' emotions. Over three studies, this dissertation tested a model in which group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals (Hypothesis 1). In this model, emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member (Hypothesis 2). Group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Hypothesis 3). These regulation attempts then result in greater upregulated emotions in ingroup rather than outgroup members

(Hypothesis 4). Study 1 experimentally manipulated the group membership of the target to examine whether group members regulate the emotions of ingroup and outgroup members that are instrumental in achieving ingroup goals. The results showed that regardless of the valence of the emotion (i.e., the emotions of happiness and anger), group members attempted to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members. Study 2 used archival data to test whether more liberal or more conservative media sources try to influence the emotions of their readers (i.e., ingroup members) about politically group-relevant (i.e., COVID-19 and Ebola) but not politically group-irrelevant events (i.e., celebrity deaths). Results showed that the political identity of media sources influenced how they tried to regulate the instrumental emotions of their readers. More liberal media sources were more likely than more conservative media sources to try to upregulate anxiety (but not other emotions) due to its instrumentality for the politically group-relevant event of COVID-19. Study 3 extended Study 2 to determine whether the regulator's emotion regulation attempts resulted in the experience of greater upregulated anxiety in ingroup rather than outgroup members (that is, whether ingroup members were more affected by ingroup regulators' attempts to change their emotions than were outgroup members). However, results indicated that the emotions that the regulators were trying to influence were experienced by both ingroup and outgroup members. Together, these studies suggest that group members attempt to regulate the emotions of ingroup and outgroup members based on the instrumentality of the emotion to group goals, influencing the target's emotions.

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Introduction

Emotions are pervasive in every aspect of people's lives, from interactions with the surrounding environment to interactions with other individuals or groups. People often try to influence these emotions based on the type of emotions experienced, when these emotions are experienced, and how these emotions are expressed and experienced, through a goal-directed process called emotion regulation (Gross, 1998). Through emotion regulation, these positive or negative emotional experiences are upregulated or downregulated, either automatically or purposefully, transforming the emotion generative process (Gross et al., 2011; Ochsner & Gross, 2005; Parrott, 1993). During this process, emotion trajectories may change in latency, rise time, magnitude, duration, or offset (Gross, 2014).

Emotion regulation is usually considered as an individual process reliant on individuals' emotions being influenced through the activation of their personal goals, emotions termed individual-based emotions (Gross, 2002; Moors et al., 2013; Tamir, 2016). However, people also regulate group-based emotions, which are emotions that arise from one's group membership (Goldenberg et al., 2016; Smith et al., 2007). For instance, the feeling of individual-based anxiety may arise from an individual's lack of preparation for a psychology exam, whereas the feeling of group-based anxiety may arise from a group member's lack of preparation for a sports game against an opposing team. Although individual- and group-based emotions share similar properties, the emotions themselves are distinguishable (Mackie & Smith, 2018; Smith et al., 2007). This suggests that because the context of personal and group goals is different, the emotions and their consequences are different as well.

These individual- and group-based emotions can be regulated within oneself (i.e., intrapersonally) or with others (i.e., interpersonally). Many advances have been made that examine how individuals regulate their own emotions in various psychological subareas, including cognitive psychology, which considers the use of cognitive control in influencing emotions; developmental psychology, which investigates how parents regulate their own emotions and people regulate their own emotions across the lifespan; social psychology, which considers individual differences in emotion regulation and how emotion regulation may affect our social lives; industrial/organizational psychology, which examines how people regulate their emotions in the workplace, and clinical psychology, which focuses on both normal and pathological variations of emotion regulation (Gross, 2015b).

Although individuals often regulate their own emotions without a partner, it is also very common for emotions to be regulated with others, termed interpersonal emotion regulation (Zaki & Williams, 2013). Within interpersonal emotion regulation, individuals can regulate their own emotions (i.e., intrinsic emotion regulation), or individuals can regulate others' emotions (i.e., extrinsic emotion regulation; Zaki & Williams, 2013). For instance, when someone feels sad, they may want to call a friend in order to feel less sad, which would be an example of intrinsic emotion regulation. However, if someone sees a sad friend and wants to help them feel less sad, this would be an example of extrinsic emotion regulation. Most of the focus of the interpersonal emotion regulation literature has focused on intrinsic rather extrinsic emotion regulation processes (Nozaki & Mikolajczak, 2020) and individual-based rather than group-based emotions.

In this dissertation, I investigated how group members regulate others' emotions that arise based on their group membership (i.e., extrinsic group-based emotion regulation) since

little is known about the social context of how group-based emotions are regulated. The intergroup emotion regulation literature tends to evaluate group-based emotions in an intrapersonal perspective, focusing on how individuals regulate their own group emotions. However, due to people's strong desire to share emotions (Rimé, 2007), the regulation of these group emotions may also have a social, interpersonal component. Conversely, the interpersonal emotion regulation literature has only (implicitly) looked at the regulation of individual-based rather than group-based emotions. Although group-based interpersonal emotion regulation has been theorized in the intergroup emotion regulation literature (e.g., Goldenberg et al., 2016, Mackie & Smith, 2018), this discussion is more commonly framed intrinsically rather than extrinsically. Thus, this dissertation aims to fill the gap in the literature on how individuals may regulate others' group-based emotions because emotions, group-based or not, often occur in a social, interpersonal context.

In Section 1, I first review the literature on how group emotions are regulated at the intrapersonal level to understand the differences between individual versus group emotions, as well as how the regulation of them differs. In Section 2, I explore how individual emotions are regulated at the interpersonal rather than intrapersonal level, adding complexity to the emotion regulation processes through social interactions. In Section 3, I merge these separate literatures by suggesting a new framework for understanding how group emotions are regulated at the interpersonal level. Within this framework of group-based interpersonal emotion regulation, I discuss the present research, proposing a series of three studies investigating how group members engage in interpersonal emotion regulation, specifically extrinsic emotion regulation, and their goals for doing so.

Section 1: Group-Based Emotion Regulation

Emergence of Group Emotions

According to the modal model of emotion by Gross and Thompson (2007) and the modal model of group-based emotion by Goldenberg et al. (2016), for both individual- and group-based emotions to arise, a psychologically relevant situation needs to take place. These situations can be external (i.e., due to environmental factors) or internal (i.e., due to personal factors), and relevant either to the personal or group self. Once attention is then given to a situation, individuals can appraise it before forming an emotional response (Gross & Thompson, 2007; Goldenberg et al., 2016).

During the appraisal process, the path of individual- and group-based emotion generation may diverge when the process of self-categorization occurs (Goldenberg et al., 2016), in which people ascribe themselves to belonging to either their personal self or group self (Turner, 1985). For individual-based emotions, people self-categorize themselves as unique individuals, appraising the situation's significance and relevance to the individual before forming their individual-based responses. Conversely, for group-based emotions, people self-categorize themselves as group members, appraising the situation as relevant to the group before forming group-based emotions.

As proposed by intergroup emotions theory, these group-based emotions are experienced based on people's group identification and categorization with regard to their consequences for the ingroup (Smith, 1993; Mackie et al., 2000; Mackie & Smith, 2017). This emphasis on group membership is rooted in social identity theory, in which individuals place significance on their group membership, striving for a positive social identity to maintain positive self-evaluations by comparing their own group to relevant outgroups

(Tajfel & Turner, 1979). In doing so, individuals have an idea of their status in the social world and the norms of group membership (Tajfel, 1978).

Self-categorization theory further elaborates on this, suggesting that group members perceive themselves to be representative of the group rather than as unique individuals (Turner, 1985). Thus, when individuals self-categorize as their group self rather than their personal self, their subsequent emotions are group-based and distinct from individual-based emotions (Mackie & Smith, 2018; Smith et al., 2007). Levels of group identification indicate the significance and extent of this self-categorization, affecting members' group-based emotional response (Mackie & Smith, 2018).

These stages of situation, attention, appraisal, and response described in the modal model of emotion are dynamic and cyclical (Gross & Thompson, 2007), so self-categorization and group identification can be reassessed and changed throughout these stages (Goldenberg et al., 2016) according to changes in one's goals (Čehajić-Clancy et al., 2016). This suggests that people can fluidly switch between their personal and group selves, and between their different group selves as situations (and the attention to them) change. Additionally, within these group selves, people may be able to change their group identity. As individuals' group membership changes, their emotional reactions (and the regulation of them) may be altered as well (Yzerbyt et al., 2002).

Thus, whether these emotions are individual- or group-based depends on how the person self-categorizes themselves and not whether the person is physically by themselves or with a group. Rather, a person can experience individual-based emotions either by themselves (e.g., tripping on a rock while walking alone and feeling sad) or with other people (e.g., tripping on a rock while walking with a friend and feeling sad). Similarly, a person can

experience group-based emotions either by themselves (e.g., hearing the national anthem when alone and experiencing group pride) or with other people (e.g., hearing the national anthem at a sports game and experiencing group pride), as long as they have self-categorized as a group member (e.g., an American). Ultimately, what differentiates individual- and group-based emotions is whether the situation is relevant to the personal self (i.e., individual-based emotion) or the group self (i.e., group-based emotion), and not the number of people present.

Differentiating between the regulation of emotions based on the personal or group self is essential to understand the effect that group membership may have on emotions. In the group context, these emotional responses may be amplified by individuals' levels of group identification, particularly for positive emotions (Mackie & Smith, 2018) or also as others experience the same emotion (Smith et al., 2007). The consequences of group-based and individual-based emotions differ. Whereas individual-based emotions influence personal outcomes, such as our interpersonal relationships, group-based emotions may influence group outcomes, including intragroup and intergroup attitudes and behaviors (Smith et al., 2007), such as group cooperation (e.g., Barsade & Knight, 2015) and intergroup prejudice (e.g., Miller, Smith, & Mackie, 2004). In this way, the results of group-based emotions and their regulation may also be magnified. For instance, individual-based anger may lead to taking action against something or someone, but group-based anger may lead to collective action (Mackie et al., 2000; Mackie & Smith, 2018).

In contrast to individual-based emotion regulation, group-based emotion regulation investigates how emotions are influenced as a result of people's self-categorization with their group self so that emotions are being regulated for group goals (Goldenberg et al., 2016).

Differentiating between individual- and group-based emotion regulation is essential to understand the effect that group membership may have on influencing emotions and subsequently, intragroup and intergroup attitudes and behaviors (Smith et al., 2007).

Group-Based Emotion Regulation Goals

Emotion regulation occurs through the activation of a goal to reach a desired emotional state or to avoid an undesired emotional state (Gross et al., 2011; Tamir, 2016). When current and desired emotional states are incongruent, a goal is activated to reduce this discrepancy (e.g., Tamir et al., 2008). Compared to when individuals are regulating individual-based emotions, group members in the same situation may have different goals for regulating group-based emotions. This is because, as Goldenberg et al. (2016) suggest, when individuals self-categorize as group members the activated group-based goals are presumed to be collective rather than personal, with consideration of the consequences of these goals to the group or its members.

Whether the emotions being regulated are individual- or group-based, emotion regulation goals can be hedonic (to increase pleasure and decrease pain) or instrumental (to achieve a non-emotional outcome; Tamir, 2016). When individuals pursue hedonic goals, the short-term goal is to feel pleasant emotions and avoid unpleasant emotions, but when individuals pursue instrumental goals, the benefits of the long-term goal (and delayed pleasure) outweigh the benefits of the short-term hedonic goals (Tamir, 2009). As such, whether group members have hedonic or instrumental goals to regulate their emotions may depend on group and situational factors.

The goals motivating group-based emotions can be hedonic, such as the goal of maintaining a positive social identity through positive ingroup emotions (Goldenberg et al.,

2016). Group-based hedonic goals can be to feel the pleasant emotions of a group member's achievements or to avoid feeling the unpleasant emotions of a group member's wrongdoings (Goldenberg et al., 2016), such as in minimizing the vicarious shame and guilt due to a shared social identity with the offender (Lickel et al., 2005). However, emotions that have a hedonic component to them also often have an instrumental motive as well. For instance, positive emotions toward the ingroup are hedonic, but they can also be instrumental, such as by increasing loyalty to the group (Goldenberg et al., 2016). Matching other ingroup members' emotions, which is hedonic, can lead to bonding and loyalty, which is instrumental (Mackie & Smith, 2018).

At other times, the value of longer-term instrumental goals supersedes the value of short-term hedonic goals (Goldenberg et al., 2016). For instance, the negative emotions of anger, fear, and guilt can be instrumental. Group-based anger can inspire collective action (Halperin, 2011; van Zomeren et al., 2004). Group-based fear can increase risk estimates and motivate people to take precautionary measures (Halperin, 2011; Lerner et al., 2003) or to avoid the outgroup (Mackie et al., 2000). Group-based guilt, an emotion that is often avoided (Wohl et al., 2006), can be regulated in ways that lead to political action (Leach, Iyer, & Pedersen, 2006), such as reconciliation (Wohl & Tabri, 2016), and more group-based guilt is felt by individuals when they perceive that their ingroup is not responding sufficiently to their group's wrongdoings (Goldenberg et al., 2014). In this way, group members have an instrumental desire to respond with appropriate emotions and may burden themselves with stronger group-based emotions when perceiving that their ingroup is not expressing the appropriate emotions, a process of emotional nonconformity (Goldenberg et al, 2014). Conversely, this instrumental desire to respond appropriately may also emerge in response to

the emotions of the outgroup, such as mirroring or complementing the emotions of the outgroup (Mackie & Smith, 2018). However, these instrumental desires to respond appropriately may differ by culture (Tsai, 2007), shaping the ideal affect that group members should experience.

In this discussion of the distinctions between hedonic and instrumental motives, the scenarios are often much more complex. For instance, pride, which is a positive emotion of one's ingroup, and shame, which is a negative emotion of one's ingroup, are intertwined and can be experienced simultaneously (Salice & Montes Sánchez, 2016). Additionally, for individuals who glorify their group, invoking pride in the ingroup can promote group-based guilt (Schori-Eyal et al., 2015). In this multifaceted example, despite the unpleasantness of group-based guilt, the instrumental goals that guilt can motivate are being valued above the hedonic goal of not feeling guilty, while the hedonic emotion of pride is also being experienced.

This distinction between individual- and group-based emotion regulation sets the framework for the discussion for other types of emotion regulation. As these examples have made clear, as group-based emotions are generated, individuals regulate these transpiring emotions either intra- or interpersonally.

Section 2: Interpersonal Emotion Regulation

Intra- versus Interpersonal Emotion Regulation

Intrapersonal emotion regulation considers the individual aspects of influencing our own emotions, in which individuals take steps to regulate themselves (Barthel et al., 2018). It overlooks these outside processes in favor of focusing on the emotion regulation processes within oneself (Hofmann, 2014). The emotions being regulated can be experienced as an

individual or group member (Goldenberg et al., 2016). For instance, in the process model of emotion regulation by Gross and Thompson (2007), the emotion regulation strategies tend to focus on how individuals regulate their own individual-based emotions rather than introducing these strategies in a social or environmental context. Similarly, although the process model of emotion regulation by Goldenberg et al. (2016) considers the regulation of group-based rather than individual-based emotions, it does so in an intrapersonal perspective. However, with the prevalence of social networks in our lives, emotion regulation (whether individual- or group-based) often occurs in interpersonal relationships rather than within an individual only (Coan & Maresh, 2014; Hofmann, 2014).

Interpersonal emotion regulation has been conceptualized as the management of emotions in the self and others with regard to social and environmental context (Barthel et al., 2018). Specifically, this means that interpersonal emotion regulation involves another person, whereas intrapersonal emotion regulation does not. There have been many conceptualizations of interpersonal emotion regulation, such as in the close relationships literature, which examines how emotions are regulated in friendships or romantic relationships (e.g., Levy-Gigi & Shamay-Tsoory, 2017); the developmental literature, which considers how children's emotions are regulated by peers or parents (e.g., López-Pérez et al., 2016); the clinical literature, which considers emotion regulation and dysregulation, such as with mood or anxiety disorders (e.g., Hofmann, 2014); and the organizational behavior literature, which investigates how emotions are regulated in workplaces (e.g., Niven, Totterdell, & Holman, 2009). However, the core distinction of interpersonal emotion regulation is in its social framework where an individual's emotions are regulated in a social environment, consciously or not (Barthel et al., 2018).

The idea of interpersonal emotion regulation, or relying on others to regulate emotions, has been prevalent in the literature, such as in the sharing of positive or negative emotional experiences (Rimé, 2007). The sharing of positive emotional episodes, or capitalization, has both intrapersonal and interpersonal benefits, increasing individuals' positive affect and well-being, as well as enhancing intimacy and social bonds (Gable et al., 2004). Although the sharing of positive emotions is generally a more pleasant experience, the sharing of negative emotions is not always aversive (Rimé, 2007), especially for bonding and social support purposes (Delelis & Christophe, 2016). Interpersonal emotion regulation involves the social context of emotions, emphasizing the engagement and social effects of emotional sharing in transforming an emotional memory and reducing its emotional load (Rimé, 2007). However, distinct from social support and coping processes, which are more long-term processes, interpersonal emotion regulation is a more short-term process (Dixon-Gordon et al., 2015).

It is essential to recognize how having a social context influences the emotion regulation process since another individual's presence or engagement can impact social functioning (English & Eldesouky, 2020). However, despite the differences between intra- and interpersonal emotion regulation, it is important to consider that during interpersonal regulatory processes, intra- and interpersonal emotion regulation may be occurring simultaneously (Zaki & Williams, 2013).

Intrinsic vs. Extrinsic Emotion Regulation

Since interpersonal emotion regulation involves another individual, there are two sets of emotions and thus, there are two ways that these emotions can be regulated. In the model proposed by Zaki and Williams (2013), interpersonal emotion regulation consists of both

intrinsic and extrinsic processes. First, there is intrinsic emotion regulation, in which a person is trying to regulate their *own* emotions in a social interaction (Zaki & Williams, 2013). For instance, if Person A is excited about finishing a major milestone in their graduate education, they may want to upregulate their own emotion of excitement with a close other called Person B (i.e., capitalization; Gable & Reis, 2010). This is an example of intrinsic emotion regulation since Person A is trying to influence their own (and not anyone else's) emotions with Person B. Second, there is extrinsic emotion regulation, in which a person is trying to regulate *another person's* emotions in a social interaction (Zaki & Williams, 2013). In the previous example, if Person B does indeed want to celebrate Person A's accomplishments and upregulate Person A's emotion of excitement, then this is an example of extrinsic emotion regulation, where Person B is trying to influence another person's emotions, specifically the emotions of Person A. Individuals who regulate their own emotions in a social context are engaging in intrinsic emotion regulation, but individuals who regulate their own emotions without a social context are simply engaging in intrapersonal emotion regulation. These intrinsic and extrinsic emotion regulatory processes are specific to interpersonal emotion regulation.

The extended process model of emotion regulation proposes that that emotions and emotion regulatory processes are four-step cyclical valuation systems of (1) the state of the internal or external world (W), (2) the perception of this state (P), (3) the valuation of these perceptions (V), and (4) the actions taken based on these valuations (A; Gross, 2015a). Nozaki and Mikolajczak (2020) applied the extended process model to extrinsic emotion regulation to describe the processes through which the regulator has the goal of influencing the emotions of their target. Specifically, during the identification state, they suggest that (1)

the state of the world is the target's emotion generation system (W), (2) the regulator perceives the target's emotion (P), (3) the regulator evaluates whether target's emotions need to be regulated (V), and (4) if the regulator makes the valuation that the target's emotions need to be regulated, the regulator takes action by setting an extrinsic emotion regulation goal (A). Conversely, if the regulator makes the valuation that the target's emotions do not need to be regulated, then the cycle ends, and extrinsic emotion regulation does not occur.

As an example, suppose that Person B, the target, is upset (W). Person A, the regulator, first needs to perceive (P) that Person B is upset before making the valuation that Person B's emotions should be regulated (V) and setting the goal of making Person A feel better and downregulating their negative emotion (A). At this point, an extrinsic emotion regulation goal has been activated during the identification stage. This W-PVA cycle then may continue into the selection and implementation stages, in which the regulator may select a strategy during the selection stage (e.g., distract the target) and then decide a tactic to implement this strategy during the implementation stage (e.g., how to distract the target; Nozaki & Mikolajczak, 2020).

Interpersonal Emotion Regulation Goals

Intrinsic Emotion Regulation Goals

Much of the emphasis on interpersonal emotion regulation has focused on intrinsic emotion regulation (i.e., how individuals use others to regulate their own emotions; Nozaki & Mikolajczak, 2020). Additionally, within intrinsic emotion regulation, much of the literature emphasizes the upregulation of positive emotions and the downregulation of negative emotions, or for the hedonic goals of increasing pleasure and decreasing pain. For example, individuals often participate in the social sharing of emotional events (Gable & Reis, 2010).

When individuals share their good events, their positive emotions are often improved through this process called capitalization (Gable & Reis, 2010). However, when individuals share more stressful events and receive responsive caregiving from their partner, this social support can enhance their mood (Collins & Feeney, 2000). Although social sharing does not always activate an interpersonal regulatory goal, it is often the case, and this activation of a regulatory goal in the social presence of others is what differentiates interpersonal emotion regulation from interpersonal emotion modulation, in which no goal is activated (Zaki & Williams, 2013).

Specific emotions are also regulated with others for instrumental goals. For instance, when anger, rather than happiness or no emotion, is expressed during a negotiation, more concessions are made to that individual (Sinaceur et al., 2011), but only if the regulated anger is real rather than fake (Côté et al., 2013). This supports that individuals may regulate their anger for instrumental goals, such as getting others to cooperate so they can get what they want. Additionally, individuals may upregulate the emotions of crying in the presence of others due to its communicative functions, suggesting that individuals may cry for both hedonic and instrumental motives (Simons et al., 2013).

However, who the partner is also bears importance. When certain goals are activated, individuals perceive instrumental others more positively and are more likely to approach them, in comparison to non-instrumental others (Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008). Additionally, individuals often seek others out for their instrumental goals, such that even the presence of another person may prime these goals (Shah, 2003). Cheung, Gardner, and Anderson (2015) investigate emotionships, finding that individuals have specialized relationships with others for distinct emotion regulatory needs, for either hedonic

(e.g., calming down anxiety) or instrumental (e.g., enhancing anger) goals. In this way, not all interpersonal regulatory experiences are the same, as different individuals are viewed as useful for regulating different emotions. The environmental and social contexts are important in understanding who someone seeks to regulate their emotions and for what emotion regulatory goal, particularly when it comes to group-based emotions. Thus, understanding the relation of the partner to the individual allows for insight into the hedonic and instrumental goals of the emotion regulation processes.

Extrinsic Emotion Regulation Goals

As with intrinsic emotion regulation, regulators can try to influence others' emotions for both hedonic and instrumental goals. For instance, when partners capitalize on a good event (Gable & Reis, 2010) or try to support the other person after a bad event (Dixon-Gordon et al., 2015), regulators have hedonic goals of increasing pleasure or decreasing pain, in which influencing their partner's emotions allows them to feel better or less bad about themselves (e.g., "I am happy that you are happy"). However, individuals can also regulate others' behaviors for instrumental goals.

Netzer and colleagues (2015) found that individuals have instrumental goals to increase both positive and negative emotions in others during cooperative or competitive situations when it is advantageous to their personal goals. To do this, they had participants play either a shooting game where the instrumental emotion was anger and a dancing game where the instrumental emotion was happiness, either in cooperation with or competition with another participant, and asked participants to what extent they wanted their partners to experience anger-, fear-, or happiness-inducing stimuli before playing the game. The results support that when anger was instrumental in the shooting game, participants wanted their

partner to feel more anger, less fear, and less happiness when cooperating rather than competing with the partner, and that when happiness was instrumental in the dancing game, participants wanted their partner to feel less anger, less fear, and more happiness when cooperating rather than competing with the partner.

The Netzer et al. (2015) study suggests that individuals can upregulate or downregulate others' positive or negative emotions, depending on the instrumentality of the emotion, and that whether the other person is cooperating or competing against the regulator determines the emotion regulation goal of the regulator. Although the emotions examined in the study were not based on participants' group membership, the study provides preliminary evidence that the role of the partner in relation to the regulator affects the regulator's goals for influencing the target's emotions. This supports the idea that individuals can have instrumental goals for interpersonal emotion regulation processes.

Section 3: Group-Based Interpersonal Emotion Regulation

Emotion Regulation Framework

Most of the focus in the emotion regulation literature is on individual-based rather than group-based emotion regulation. The intergroup emotion regulation literature, as discussed in Section 1, tends to evaluate group-based emotions in the intrapersonal perspective, such as in the theory by Goldenberg et al. (2016) for group-based emotion regulation. However, people have strong desires to share their emotions (Rimé, 2007) and often find themselves experiencing group-based emotions in social situations. The interpersonal emotion regulation literature, as discussed in Section 2, tends to be integrated with the intrapersonal emotion regulation literature such as in the model for interpersonal

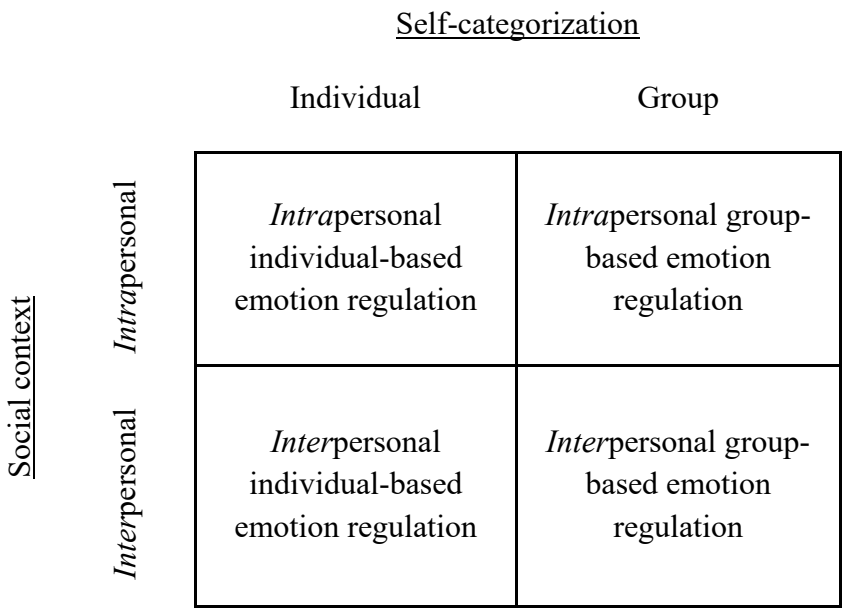
emotion regulation by Zaki and Williams (2013), which focuses on individual-based emotions.

Thus, I distinguish between two orthogonal types of emotion regulation processes: 1) individual- vs. group-based and 2) intra- vs. interpersonal (see Figures 1 and 2), arguing that the emotions experienced and regulated can based on self-categorization with an individual or group identity within both intrapersonal and interpersonal social contexts. Then within interpersonal emotion regulation, individuals may either regulate their own emotions (i.e., intrinsically) or they may regulate others' emotions (i.e., extrinsically).

With this framework in mind, there are four integral emotion regulation processes. First, most of the current literature on emotion regulation is about individual-based *intra*personal emotion regulation (e.g., Gross, 1998, 2002, 2015), where individuals regulate their own emotions that result from their individual identity. Second, group-based *intra*personal emotion regulation occurs when people regulate their own emotions that result from group membership (Goldenberg et al., 2016), involving processes similar to individual-based intrapersonal emotion regulation. Third, if a person engages with another individual about their own or others' emotions based on their individual identity, then individual-based *inter*personal emotion regulation is involved (e.g., Zaki & Williams, 2013; Barthel et al., 2018). Last, group-based *inter*personal emotion regulation takes place when a person engages with another person to regulate their own or others' emotions that arise from their own group membership. Within both individual- and group-based interpersonal emotion regulation, we can further differentiate between intrinsic and extrinsic interpersonal emotion regulation processes.

Figure 1

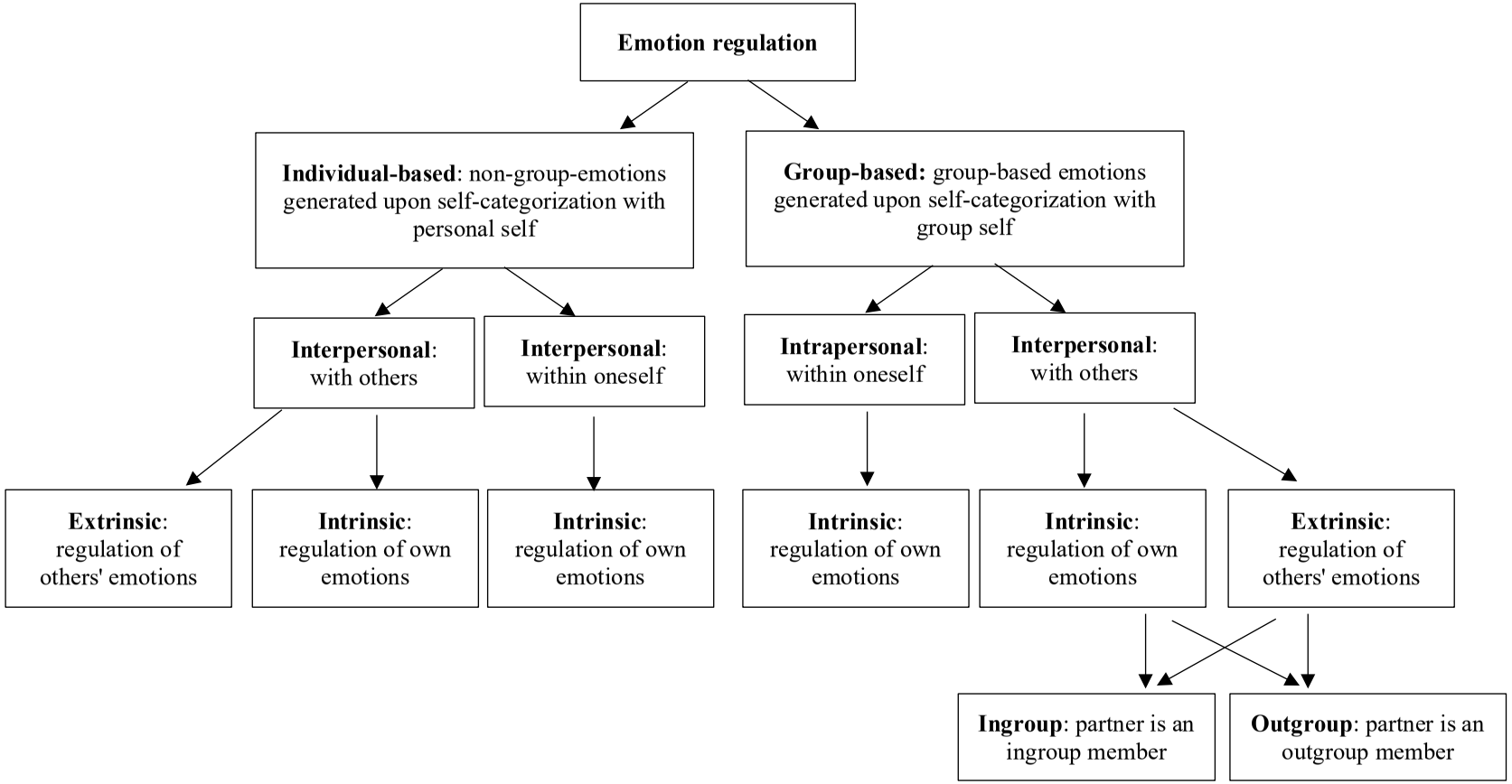
Framework for Categorizing the Four Processes of Emotion Regulation



Note. This figure considers the two orthogonal dimensions of: 1) individual- versus group-based emotions generated upon self-categorization, and 2) intrapersonal (without others) versus interpersonal (with others) social context.

Figure 2

A diagram of different categorizations of emotion regulation based theoretical work by Gross (1998), Goldenberg et al. (2016), and Zaki and Williams (2013)



Interpersonal Group-Based Emotion Regulation

Whether individual-based or group-based emotions are being regulated, interpersonal emotion regulation involves the social context of another person. However, the self-categorization of a person as a group member (rather than as an individual) leads to group-based (rather than individual-based) interpersonal emotion regulation. Similar to interpersonal individual-based emotion regulation, since interpersonal group-based emotion regulation also involves another person, these group-based emotions can be regulated through intrinsic and extrinsic processes as well.

Intrinsic group-based emotion regulation is when a group member is trying to regulate their own group-based emotions (i.e., emotions that arise from the regulator's group membership) with another person. For instance, during a sports game between Americans and Canadians, after Person A self-categorizes as an American, Person A may high five another American in order to upregulate their *own* emotions of group pride. The emotions that Person A are experiencing are group-based due to their self-categorization to the group membership of an American, and this is an intrinsic emotion regulation process since Person A is trying to influence their own emotions.

Extrinsic group-based emotion regulation is when a group member is trying to regulate another person's group-based emotions (i.e., perceived emotions that arise from the target's group membership). For example, during a sports game between Americans and Canadians, after Person A, the regulator, self-categorizes as an American, Person A may pat another American, their target, on the back in order to downregulate *another person's* emotions of group sadness. Here, Person A self-categorizes as an American and perceives that Person B, an ingroup member, is experiencing group emotions of sadness, making these

group-based emotions. This is an extrinsic emotion regulation process since Person A, the regulator, is trying to influence someone else's emotions.

The literature has almost exclusively focused on intrinsic rather than extrinsic emotion regulation processes of individual-based emotions (Nozaki & Mikolajczak, 2020), and this is also apparent when considering group-based emotions. Thus, this dissertation will more closely examine extrinsic group-based emotion regulation processes to understand how group members may influence others' group-based emotions.

Extended Process Model of Extrinsic Group-Based Emotion Regulation

The extended process model of extrinsic group-based emotion regulation follows the same four-step cyclical valuation systems as when others' individual-based emotions are being regulated as suggested by Nozaki and Mikolajczak (2020). During the identification state, the state of the world is the target's emotion generation system (W). Next, the regulator perceives the target's emotion (P). Then the regulator evaluates whether the target's emotions need to be regulated (V). Lastly, if the regulator makes the valuation that the target's emotions need to be regulated, the regulator takes action by setting an extrinsic emotion regulation goal (A).

However, I additionally propose that during the valuation stage, in which the regulator evaluates whether the target's emotions need to be regulated, the regulator self-categorizes with either their personal or group self. If the regulator self-categorizes with their personal self and if they make the valuation that the target's emotions need to be regulated, then individual-based (rather than group-based) extrinsic emotion regulation occurs. Conversely, if the regulator self-categorizes with their group self, since they are interpreting the world through the lens of a group member (rather than an individual), the

target is additionally categorized as either an ingroup or outgroup member, called target-categorization. In this way, target-categorization is based on the regulator's perspective of the target as an ingroup or outgroup member rather than the target actually self-categorizing as the regulator's ingroup or outgroup member.

For example, suppose that Person B, the target, is upset during a sports game between two groups, Americans and Canadians (W). Person A, the regulator, first needs to perceive (P) that Person B is upset, then make valuations (V) about the situation. During this valuation step, if Person A self-categorizes as an American, then Person A will target-categorize Person B as either an ingroup (e.g., another American) or outgroup member (e.g., non-American). Thereafter, if Person A sets the goal of influencing Person B's emotions (A), then a group-based emotion regulation goal has been activated.

Nozaki and Mikolajczak (2020) note two failure points at which interpersonal emotion regulation would not occur: (1) if the regulator inaccurately perceives the target's emotions during the perception step, and (2) if the regulator makes the valuation that the target's emotions do not need to be regulated during the valuation step. These two failure steps also apply to interpersonal group-based emotion regulation. However, there may be an additional failure point in extrinsic group-based emotion regulation. During the valuation step, if the regulator self-categorizes with their personal self instead of their group self, then individual-based (rather than group-based) emotion regulation goals may be activated.

Extrinsic Group-Based Emotion Regulation Goals

Studies of both group-based emotion regulation and interpersonal emotion regulation have independently demonstrated that emotion regulation goals can be hedonic or instrumental (or sometimes both; Tamir, 2016). These emotion regulation goals depend on

whether the emotion being regulated is individual- or group-based, and whether the situation is with another person or not. For interpersonal group-based emotion regulatory processes, the goals are based on self-categorization with the group self during a social interaction with another person, and these goals may also be hedonic or instrumental (or sometimes both). For instance, many of the goals of group-based emotion regulation may still be relevant when group-based emotions are being regulated with others, such as the goal of maintaining a positive social identity through positive ingroup emotions (Goldenberg et al., 2016). However, due to the inclusion of another person in regulating these emotions, the context would be different, especially when considering the other person's group membership and their subsequent group emotions and emotion regulation goals.

Although regulators may have either hedonic or instrumental goals when regulating their own or others' emotions, the following sections will discuss these goals in the context of regulating others' group-based emotions (i.e., extrinsic group-based emotion regulation) since that is the focus of this paper.

Regulating Emotions with Ingroup vs. Outgroup Members

Since individuals seek out particular others to regulate specific emotions (Cheung et al., 2015), who this partner is changes the way these emotion regulation processes proceed, including the emotion regulation goals. Specifically, how we regulate others' group-based emotions may be influenced by (1) our own group membership and (2) others' group membership. For example, during a sports game between the U.S. and Canada, suppose the regulator self-categorizes as an American. If their target is an ingroup sports fan, or an American, the regulator's goal may be to upregulate their target's excitement and pride, making this largely a hedonic goal to feel pleasure towards their group. However, if their

target is an outgroup member, such as a Canadian, the regulator's emotion regulatory goal may be to upregulate their target's fear and anxiety (rather than excitement and pride as with the ingroup member) instead. Since fear can motivate group members to avoid the outgroup (Mackie et al., 2000), upregulating this emotion serves instrumental goals to the regulator since it can decrease the target's team performance. Thus, as in this example, hedonic and instrumental motives may vary with regard to the regulator's partner, particularly when group membership is considered.

The way that group members self-categorize influences their group emotions toward different outgroups. For instance, Ray et al. (2008) found that when people self-categorized as Americans rather than students, they felt significantly more anger toward Muslims rather than the police, and when they self-categorized as students rather than Americans, they felt more anger toward police rather than Muslims. Since the emotions that regulators feel toward others depends on their group membership, their emotion regulation goals may also depend on their group membership.

Others' group membership may also influence the effectiveness of extrinsic emotion regulation attempts. For instance, people are more likely to trust ingroup rather than outgroup members (Elashi & Mills, 2014; Tanis & Postmes, 2005) since shared group membership promotes trust and cooperation (Brewer, 2008; Platow et al., 2012). People are also more prone to risk-taking with ingroup than outgroup members (Cruwys et al., 2020). In this way, since ingroup members are more trusted and more emotionally similar than outgroup members, regulation attempts from ingroup members may be more effective in influencing one's emotion than if an outgroup member were to regulate their emotions.

Two of the main motivations of intergroup bias are attachment to one's own group and negative feelings toward the outgroup (Brewer, 1999). Although group members tend to prefer to show ingroup favoritism rather than outgroup derogation (Greenwald & Pettigrew, 2014; Halevy et al., 2008; Perdue et al., 1990), group members may try to hurt the outgroup when they are perceived as threatening to the ingroup in high conflict situations (Riek et al., 2006). Overall, it is likely that although group members may have hedonic goals of increasing pleasure and decreasing pain for regulating the emotions of ingroup members, group members may also have anhedonic goals of increasing pain and decreasing pleasure for outgroup members. Despite these tendencies for hedonic and anhedonic goals for the emotions of ingroup and outgroup members, respectively, group members may also consider the instrumentality of emotions based on group goals, affecting how they regulate the emotions of ingroup and outgroup members.

Regulating Emotions of the Ingroup. In the case that the regulator's partner is an ingroup member, intergroup emotions theory suggests that this other group member may be experiencing similar group-based emotions based upon their group categorization and identification (Mackie & Smith, 2018; Smith, 1993). These shared emotions can affect group outcomes, including in group performance, collective efficacy, and group development (Barsade & Gibson, 2012). In this way, the regulation of group-based emotions within group members is critical to achieving specific group goals.

Group members tend to have hedonic goals for ingroup members, unless there is instrumentality in having anhedonic goals. Social identity theory posits the importance of maintaining a positive social identity for positive self-evaluations (Tajfel & Turner, 1979), emphasizing the hedonic goals of group members for themselves and their group (Halevy et

al., 2008). For instance, when one's group has done something wrong, these transgressions are often denied in order to avoid collective guilt (Wohl et al., 2006). These emotions can even be experienced as a group member through other ingroup members, such as feelings of vicarious shame and guilt (Lickel et al., 2005). Since other ingroup members' accomplishments and failures reflect on the group, group members have hedonic group goals of upregulating positive emotions and downregulating negative emotions. For instance, in a study of men's rugby teams, athletes often used emotion regulation strategies, such as reducing anxiety, in order to help teammates (Campo et al., 2019).

Group members can also have instrumental goals for regulating the emotions of their ingroup. For example, leaders regulate their followers' emotions in order to achieve a particular vision (Dasborough & Ashkanasy, 2002), suggesting that group members may have an instrumental purpose for regulating ingroup emotions, in addition to having hedonic or anhedonic goals.

When upregulating the positive emotions or downregulating the negative emotions of ingroup members, group members often have instrumental goals that overlap with hedonic ones. For instance, positive mood can enhance team performance whereas negative mood can hinder team performance (Knight, 2015), consistent with the idea that group members may upregulate positive emotions not simply for the sake of hedonism but also to improve the odds of accomplishing ingroup goals. In another example, when group-based hope is upregulated, ingroup members are more likely to be more supportive of concessions to peace (Cohen-Chen et al., 2013); in this example, group-based hope is instrumental to lessening intergroup conflict.

Additionally, group members can have instrumental goals for ingroup members that are anhedonic in nature, such that they downregulate positive emotions or upregulate negative emotions of their ingroup to achieve group goals. For instance, teammates may downregulate other team members' positive emotions of excitement or joy for the goal of staying focused to be able to win (Campo et al., 2017). In another example, protesters and media propaganda often try to upregulate anger in the ingroup, since group-based anger can lead to acting against the outgroup, such as through collective action (Leonard et al., 2011; Mackie et al., 2000).

Regulating Emotions of the Outgroup. Group members also attempt to regulate the emotions of outgroup members, depending on group-based goals. For instance, Netzer et al., (2020) demonstrated that if Jewish Israelis' group-based goal was reconciliation, the more they tried to upregulate calmness in Palestinians, whereas if their group-based goal was deterrence, the more they tried to upregulate fear in Palestinians. This suggests that group members attempt to influence the emotions of outgroup emotions to achieve group-based goals. However, in response to group members' emotion regulation attempts, outgroup members may not always respond in the intended way, such as not experiencing more fear when sent a fear-inducing message (Netzer et al., 2020). Conversely, due to having shared group goals, it may be possible that group members' emotion regulation attempts are more effective for ingroup rather than outgroup members.

As with the Netzer et al. (2020) studies, group members tend to want outgroup members to feel worse, not better (Plant & Devine, 2003), suggesting that the emotion regulation goals of outgroup members tend to be anhedonic. When interpersonal interactions take place with outgroup members, group salience increases more as individuals encounter

negative rather than positive contact (Paolini et al., 2010). Due to greater group identification, emotions are more likely to be group-based and stronger following negative contact compared to positive contact. Feelings of anger and anxiety are often associated with negative contact, increasing prejudice (Hayward et al., 2017). Since negative emotions are experienced more with outgroup rather than ingroup members (Toosi et al., 2012), the regulation of the group-based emotions with outgroup members may also be centered more around negative emotions, influencing the goals for regulating these (more negative) group-based emotions.

The instrumental emotion regulation goals group members have for outgroup members can be for either positive or negative emotions. Netzer et al. (2020) demonstrated that to promote group safety, group members can have deterrence goals for outgroup members and try to upregulate outgroup fear. This is because increasing fear in outgroup members is instrumental by increasing risk estimates and encourages defensive behavior (Lerner et al., 2003). Netzer et al. (2020) also showed that group members can have reconciliation goals for outgroup members and try to upregulate outgroup calmness. In this case, increasing calmness in outgroup members is instrumental by decreasing hostility and encouraging prosocial behaviors (Whitaker & Bushman, 2012).

Model of Regulating Others' Group-Based Emotions

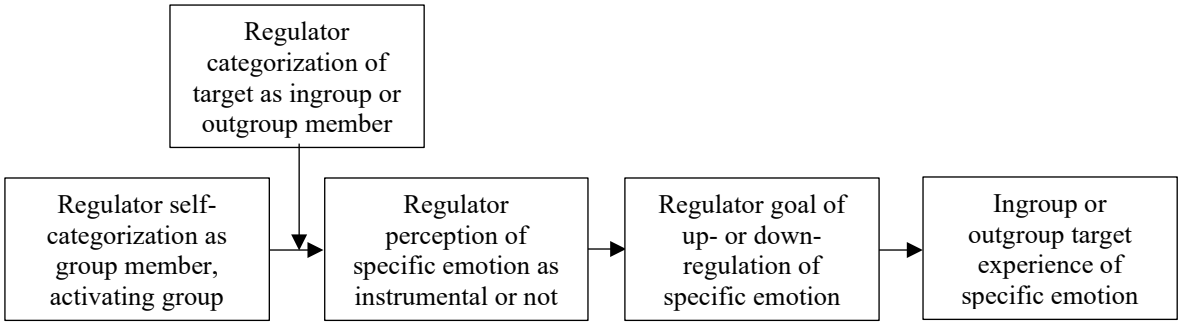
Although the literature has given examples of how group-based emotions are regulated with others (e.g., in collective rituals and holidays, Goldenberg et al., 2016; when leaders influence their followers, Hogg, 2001), there is limited literature that considers the mechanisms of how group-based emotions are regulated with others, compares the

regulator's emotion regulation goals for ingroup and outgroup members, and examines whether the regulator's emotion regulation goals affect the target's emotions.

To provide such an integration, I propose a model (see Figure 3) to understand how group members form different emotion regulation goals for regulating others' group emotions (i.e., extrinsic group-based emotion regulation) based on (1) the target's group membership as an ingroup or outgroup member, and (2) how instrumental the regulated emotion is for the regulator in a given situation. This model also proposes that the regulator's emotion regulation goals influence the target's emotions.

Figure 3

Regulating the Instrumental Group-based Emotions of Ingroup and Outgroup Members



This process is activated when people self-categorize as a group member, which in turn activates group goals. When these group goals are activated, group members strive for positive outcomes for the ingroup to maintain a positive social identity (Tajfel & Turner, 1979). Self-categorization as a group member also triggers categorization of the target as either an ingroup or an outgroup member. These self- and target-categorizations as group members determine the emotions that in any given situation will be instrumental for the

regulator to influence to reach ingroup goals, as different emotions will be instrumental for the regulator depending on whether the target is an ingroup or outgroup member.

Whether the regulated emotion is instrumental will influence the regulator's emotion regulation goals. For instance, if anger is instrumental to the regulator's ingroup goals, then the regulator may upregulate this emotion in another ingroup member and downregulate this emotion in an outgroup member. The regulator's diverging regulation goals for a specific emotion for ingroup and outgroup members are based on the regulator's self-categorization as a group member, the regulator's categorization of the target as an ingroup or outgroup member, and the instrumentality of the emotion in the given situation. The regulator's regulation goals for any specific emotion are designed to and may then influence the target's experience of that emotion.

Goals of the Current Studies

Three studies tested this model by examining how group members attempt to regulate the emotions of ingroup and outgroup members for instrumental goals.

I hypothesized that for interpersonal group-based emotion regulation:

1. To achieve group goals, group members attempt to regulate the emotions of (a) ingroup members (Studies 1 and 2) and (b) outgroup members (Study 1).
2. Emotions are perceived as instrumental to group goals (or not) as a function of whether the target is an ingroup or outgroup member (Studies 1 and 2).
3. Group members attempt to (a) upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members (Studies 1 and 2), and (b) downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Study 1).

4. Group members' emotion regulation attempts will result in the experience of greater upregulated emotions in ingroup rather than outgroup members (Study 3).

In Study 1, the regulator's group membership was activated, and the targets were described in ways that made the regulator perceive the targets to be ingroup or outgroup members. These perceptions of the target's group membership were assessed by measuring the regulator's perceived closeness with the target and the regulator's support of the targets. Studies 2 and 3 examined the emotional content of news articles from media sources that have established political group memberships. Based on prior research, Study 2 assumed that news articles about group relevant events were directed primarily at ingroup rather than outgroup members. Study 3 then measured the effect of these articles about group-relevant and group-irrelevant events on self-identified ingroup and outgroup members.

Study 1

Study 1 investigated whether group members regulate the emotions of both ingroup and outgroup members for instrumental goals. Study 1 experimentally manipulated the group membership of the target, specifically whether the target is an ingroup or outgroup member, in order to examine how emotion regulation goals may differ due to this group membership. In particular, when anger is instrumental, do group members up-regulate negative emotions in ingroup members while up-regulating positive emotions in outgroup members? Conversely, when happiness is instrumental, do group members up-regulate positive emotions in ingroup members while up-regulating negative emotions in outgroup members?

In examining these questions, Study 1 tested Hypothesis 1, that group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals;

Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member; and Hypothesis 3, that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members. Specifically, I predicted that (1) when the experience of anger is instrumental (i.e., will help the ingroup and hurt the outgroup attaining a desired resource), the regulator will (a) want to increase feelings of anger in an ingroup rather than outgroup member and (b) want to decrease feelings of happiness in an ingroup rather than outgroup member; and that (2) when feelings of happiness are instrumental (i.e., will help the ingroup and hurt the outgroup attaining a desired resource), the regulator will (a) want to increase feelings of happiness in an ingroup rather than outgroup member and (b) want to decrease feelings of anger in an ingroup rather than an outgroup member. To create these conditions in which different emotions are instrumental, participants learned about a boxing game where anger is instrumental, or a music game where happiness is instrumental, for better performance in the game.

Methods

Design

This was a 2 instrumentality of emotion in game (anger vs. happiness) x 2 target's group membership (ingroup vs. outgroup) x 3 emotional stimuli for target (anger, happiness, neutral) mixed experimental design. The independent variable of instrumentality of emotion in the game was between-subjects, and the independent variables of target's group membership and emotional stimuli were within-subjects. Participants were randomly assigned to game instrumental condition, in which they learned about a game where anger is

instrumental (i.e., a boxing game) or a game where happiness is instrumental (i.e., a music game). The dependent variable was the degree of stimuli preference for the target.

Participants

A total of 178 UCSB students were recruited to this Institutional Review Board approved study and compensated with course credit. Participants were recruited with a goal of 150 participants total. This is similar to the number of participants used by Netzer et al. (2015), which uses a similar paradigm with individual-based emotions. In order to be considered for the participant pool in this study, participants were asked what their political orientation was on a 7-point Likert scale from 1 (*Very Conservative*) to 7 (*Very Liberal*). Participants were pre-screened to be politically liberal (rather than neither conservative nor liberal, or politically conservative) in order to later establish an ingroup identity of political liberalism and an outgroup identity of political conservatism. Female and male participants were recruited separately in order to ensure that the confederates were of the same sex to avoid gender effects, and non-cisgender participants could sign up to have either a female or male partner.

Of the 178 participants recruited, one participant withdrew from the study, one participant unexpectedly supported the political outgroup of the conservative organization, and two participants responded to the manipulation check incorrectly (i.e., chose the wrong game manipulation, such as selecting that they were going to play the boxing game where anger was instrumental rather than the music game where happiness was instrumental). Thus, this study had a total of 174 participants (M_{age} = 18.83, SD_{age} = 1.10), of which 102 identified as female (58.62%), 43 identified as male (24.71%), and 3 identified as non-cisgender (1.72%). Additionally, participants were ethnically diverse, with 38 Asian/Asian-

Americans (21.84%), 6 Black/African Americans (3.45%), 30 Hispanic/Latinx-Americans (17.24%), 57 white/Caucasian-Americans (32.76%), 6 Middle Eastern or North Africans (3.45%), and 36 participants of two or more ethnicities (20.69%).

Procedure, Materials, and Measures

Participants first entered the lab with two confederates pretending to be participants. Participants and confederates were read an information sheet and told that the purpose of the study was to investigate how people's performance in video games is influenced by media, such as video clips, and motivational speech. The two confederates were matched on gender and ethnicity with each other, and they were matched on gender with the participant. Everyone was told they would be randomly assigned to roles as either a game player or a game coach. Specifically, they were told that two people would be the game players and play the video games, and one person would be the game coach and give words of encouragement to each participant playing the game.

To supposedly randomly assign everyone to their roles, everyone was told that the game coach would be chosen through a number guessing game, and the person who guessed the correct number from a random number generator would be the game coach. The participant was always told that they guessed the correct number and that they were chosen to be the game coach.

Additionally, everyone was told that to incentivize the situation, the game players would pick an organization that they would like to donate to while taking the survey, and that $5 would be donated to the winner's organization of choice. The participant and the two confederates were told that everyone would be responding to surveys individually before playing the game, so the two confederate game players entered their own cubicles to

supposedly respond to their surveys (where they would choose their organizations), watch video clips, and read a motivational message from the game coach.

Once the participant was alone, they were told that what was read to them on the information sheet was false, and that the true purpose of the study is to determine how different forms of media may influence game performance and that their role as game coach is to choose the media to expose the players to before they play the game. Additionally, they were told that as the game coach, they could pick one of the players' organizations to donate an additional $5 to, which would only be donated if the player they choose wins. Once the participant consented again, they were brought to their individual cubicle to complete a survey.

Ingroup/Outgroup Membership Manipulation. To activate group membership, participants were told in the survey that Player A chose Planned Parenthood, a liberal-leaning organization, to donate to and that Player B chose a Blue Lives Matter, a conservative-leaning organization, to donate to. These organizations were pilot tested to ensure that they implied clear liberal or conservative political orientations that would attract appropriate levels of support from liberals or conservatives respectively (Appendix A).

After being presented with the two organizations that Player A and B had chosen, participants chose the organization they would like to also support. Since participants were pre-screened to be politically liberal, they chose to support the liberal-leaning organization of Planned Parenthood to donate to, making Player A an ingroup member, and Player B, who supposedly chose to donate to the conservative-leaning organization, would be the outgroup member.

Manipulation of Instrumentality of Emotion in Game. Then participants were randomly assigned to the game condition and read a description of the game that the players (i.e., the targets of the participants' emotion regulation goals) would be playing. These descriptions were pilot tested to ensure that participants could determine the instrumentality of either anger or happiness to improve game performance from the game descriptions (see Appendix A).

In the boxing game condition, participants were told that the purpose of the game is to place some heavy-hitting punches on their opponent, and high scores in the game would result from the number of punches they land. They were also told that this is a very aggressive game and that studies have shown that people perform this game best when they are tense and alert. This condition was thus designed to make it obvious that an emotion like anger would be instrumental for the ingroup target to win the game.

In the music game condition, participants were told that the purpose of the game is to move from musical note to note in time on the screen, and high scores in the game would result from the number of notes in time with the beat. They were also told that this is a very free-flowing game and that studies have shown that people perform this game best when they are upbeat and spontaneous. This condition was designed to make it obvious that an emotion like happiness would be instrumental for the ingroup target to win the game.

Viewing Emotion-Inducing Stimuli. Since participants were told that the purpose of the study was to investigate how people's performance in video games is influenced by media, such as video clips, and motivational speech, and that they were the game coach, they needed to view the video clips. Participants watched emotional videos designed to elicit the emotions of anger or happiness, as well as an emotionally neutral video. These videos

were shown to participants in random order, and pilot tested to ensure that they elicited the appropriate emotion (see Appendix A).

Dependent Variables

Preferences for Emotion-Inducing Stimuli to Expose to the Target. Next, participants were asked to select the extent to which they would like to expose each target to each emotion-inducing stimuli before the game begins. Participants rated the extent to which they wanted Player A (the ingroup target) and Player B (the outgroup target) to watch each of the three emotion-inducing videos designed to elicit anger, happiness, or neutral emotions.

After each viewing of the three emotion-inducing stimuli, participants were asked the extent to which they would like Player A to watch the following video and the extent to which they would like Player B to watch the following video (see Appendix A). This was rated on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A great deal*). Higher scores indicate higher preferences for each target to be exposed to each of the emotion-inducing stimuli.

Positive Emotion, Negative Emotion, and Anger Words in Messages to Target. Participants were asked to write a message for Player A and another message for Player B. Participants were told that these messages would be sent to the targets from them, so they were not anonymous. There was no word or time limit on these messages.

These messages were analyzed using the LIWC 2022 default dictionary (Boyd et al., 2022) for the categories of positive emotion words and of negative emotion words, producing the percentage of positive and of negative emotion words in the text. Higher scores indicate greater use of positive or negative emotion words.

Explicit Emotion Regulation Goals. Participants were then asked the extent to which they would want [Player A or Player B] to feel [happiness or anger] before playing the game. Each emotion was rated on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A great deal*). Higher scores indicate wanting the target to experience the specific emotion more.

Manipulation Check. Next, participants responded to manipulation check measures to ensure our manipulations and study paradigms were understood appropriately by participants, and that they self-categorized themselves as group members while target-categorizing others as ingroup or outgroup members.

Instrumentality of Emotions. To assess whether participants accurately perceived the emotion instrumental to game performance, participants were asked the extent to which participants expect [happiness or anger] to improve the game performance of [Player A or Player B]. Each emotion was rated on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A great deal*). Higher scores indicate believing the specific emotion to be more instrumental to game performance.

Ingroup and Outgroup Memberships. For both Player A and Player B, participants responded to a modified version of the Inclusion of Other in the Self scale (IOS; Aron, Aron, & Smollan, 1992). Participants were shown two circles with seven varying levels of overlap, in which greater overlap reflects greater feelings of closeness between the participant and the target. Participants were asked which of the degrees of overlap between the two circles best describes their relationship with Player A and which best describes their relationship with Player B, rating these on a 7-point Likert scale, ranging from 1 (*Very*

distant) to 7 (*Almost completely overlapping*). Higher scores indicate greater perceived closeness with either the ingroup or outgroup member, assessing the effectiveness of the manipulation of group membership.

Organization Support. Participants were then asked the extent to which they support Player A's organization and Player B's organization (i.e., "To what extent do you support [Planned Parenthood]/[Blue Lives Matter]?"), on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A lot*). Higher scores indicate more support for the organization, assessing the effectiveness of the manipulation of group membership.

After responding to these questions, participants were given the opportunity to respond in an open-ended manner to an inquiry about whether they suspected any incomplete disclosure or deception. Then participants were debriefed and told that the study involved incomplete disclosure and deception, such that the scenario was hypothetical, including the game, the targets, and the donations. Finally, participants who wished to withdraw their data were given the opportunity to do so, and everyone was compensated and thanked for their participation.

Results

Manipulation Checks

Manipulation checks were conducted to ensure that participants viewed the targeted emotion as instrumental, perceived ingroup and outgroup members accurately, and were supporting the appropriate organizations of the ingroup member (i.e., Player A) but not the outgroup member (i.e., Player B).

Instrumentality of Emotions. As a manipulation check to test whether participants viewed the targeted emotion as instrumental, a three-way mixed ANOVA was conducted

with target's group membership (ingroup vs. outgroup) and targeted emotion (anger, happiness) as within-subjects variables, and instrumentality of emotion in game (boxing vs. music) as a between-subjects variable. The dependent variable was instrumentality of emotions. (See Table 1 for the ANOVA summary table for the following main effects and interactions). The three-way interaction among instrumentality of emotion in the game, targeted emotion, and group membership on instrumentality of emotions was statistically significant (see Figure 4). This three-way interaction subsumed other significant main effects and interactions.

Table 1

Three-Way Mixed ANOVA Results with Instrumentality of Emotions as the Outcome Variable

Predictor	df_{Num}	df_{Den}	SS_{Num}	SS_{Den}	F	p	η^2_p
Instrumentality of Emotion in Game	1	172	9.43	252.29	6.43	.012	.04
Explicit Emotion Regulation Goals	1	172	120.00	458.99	44.97	<.001	.21
Group Membership	1	172	19.67	69.17	48.91	<.001	.22
Game x Goals	1	172	357.76	458.99	134.07	<.001	.44
Game x Group	1	172	2.91	69.17	7.23	.008	.04
Goals x Group	1	172	17.07	176.68	16.62	<.001	.09
Game x Goals x Group	1	172	5.00	176.68	4.87	.029	.03

Note. df_{Num} indicates degrees of freedom numerator. df_{Den} indicates degrees of freedom denominator. SS_{Num} indicates sum of squares numerator. SS_{Den} indicates sum of squares denominator. η^2_p indicates partial eta-squared.

When participants believed that the music game would be played, participants were significantly more likely to believe that happiness rather than anger was instrumental for

both ingroup members (happiness: $M = 4.03$, $SD = 0.97$; anger: $M = 1.29$, $SD = 0.61$) and outgroup members (happiness: $M = 3.34$, $SD = 1.44$, $p < .001$; anger: $M = 1.56$, $SD = 0.79$, $p < .001$). This suggests that participants were able to accurately identify that happiness was more instrumental than anger in the music game for all game players. Additionally, when participants believed that the boxing game would be played, participants were significantly more likely to believe that anger rather than happiness was instrumental for both ingroup members (anger: $M = 3.25$, $SD = 1.46$; happiness: $M = 2.79$, $SD = 1.29$) and outgroup members (anger: $M = 2.93$, $SD = 1.36$, $p < .001$; happiness: $M = 2.18$, $SD = 1.22$, $p < .001$). As with the music game, this suggests that participants were able to accurately identify that anger was more instrumental than happiness in the boxing game for all game players.

However, in both the music game and boxing game conditions, participants were more likely to believe that happiness was more instrumental for ingroup rather than outgroup (music: $p = .003$; boxing: $p = .02$) members, and that there was no significant difference between the instrumentality of anger for outgroup and ingroup (music: $p = .78$; boxing: $p = .62$) members.

There was a significant main effect of instrumentality of emotion in game on instrumentality of emotion. Participants believed that emotions would be more instrumental when they would be playing the boxing game (i.e., when anger would be instrumental; $M = 2.79$, $SD = 1.38$) rather than the music game (i.e., when happiness would be instrumental; $M = 2.56$, $SD = 1.53$), $p = .009$. There was an additional significant effect of targeted emotion on instrumentality of emotion, reflecting that participants believed that happiness ($M = 3.09$, $SD = 1.41$) would be more instrumental than anger ($M = 2.26$, $SD = 1.40$), $p < .001$. There was also a main effect of target's group membership on instrumentality of emotion,

reflecting that participants believed that emotions would be more instrumental for ingroup members ($M = 2.84$, $SD = 1.50$) than for outgroup members ($M = 2.51$, $SD = 1.40$), $p < .001$.

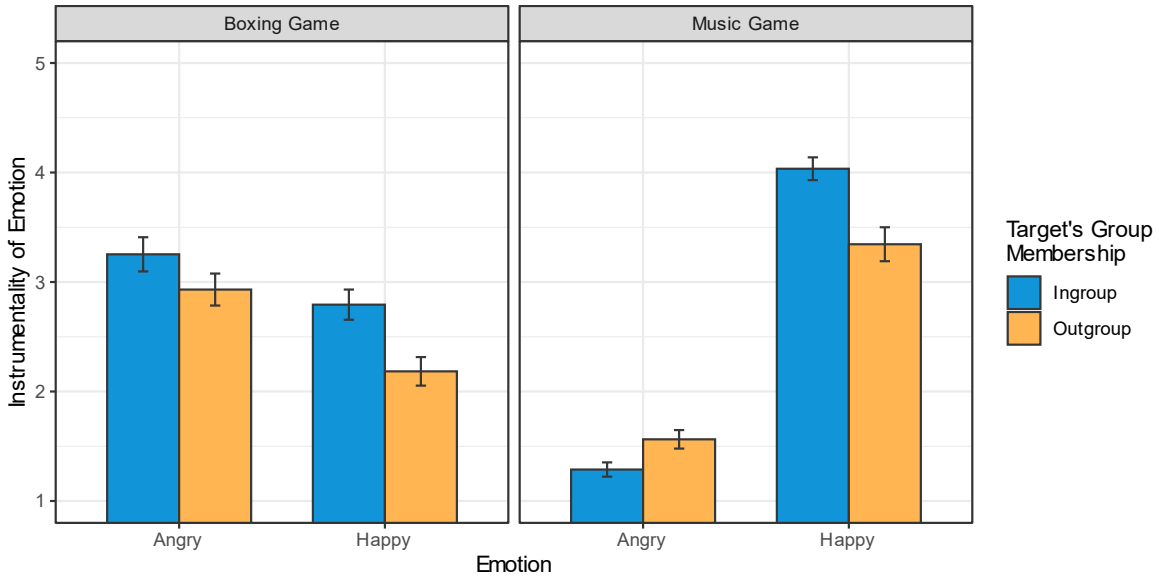
There was a significant two-way interaction between instrumentality of emotion in game and targeted emotion. Participants were significantly more likely to think that happiness was instrumental in the music game ($M = 3.69$, $SD = 1.27$) rather than the boxing game ($M = 2.49$, $SD = 1.28$), $p < .001$. Additionally, participants were significantly more likely to think that anger was instrumental in the boxing game ($M = 3.09$, $SD = 1.42$) rather than the music game ($M = 1.42$, $SD = 0.72$), $p < .001$.

There was another significant two-way interaction between instrumentality of emotion in game and target's group membership. When participants believed that they would be playing the music game, participants were not significantly more likely to think that emotions would be more instrumental for either ingroup members ($M = 2.66$, $SD = 1.60$) or outgroup members ($M = 2.45$, $SD = 1.46$), $p = .36$. However, when participants believed that they would be playing the boxing game, participants were significantly more likely to think that emotions would be more instrumental for the ingroup ($M = 3.02$, $SD = 1.39$) rather than the outgroup ($M = 2.56$, $SD = 1.34$), $p = .001$.

Last, there was a significant two-way interaction between targeted emotion and the target's group membership. Participants were not significantly likely to believe that anger would be more instrumental for either ingroup members ($M = 2.27$, $SD = 1.49$) or outgroup members ($M = 1.25$, $SD = 1.30$), $p = 1.00$. However, participants were significantly more likely to believe that happiness would be more instrumental for ingroup members ($M = 3.41$, $SD = 1.30$) rather than outgroup members ($M = 2.76$, $SD = 1.45$), $p < .001$.

Figure 4

Three-Way Interaction of Instrumentality of Emotion in the Game, Targeted Emotion, and Target's Group Membership on Instrumentality of Emotions



Ingroup and Outgroup Memberships. To test whether participants perceived ingroup and outgroup memberships (i.e., self-categorized as a group member while target-categorizing the ingroup and outgroup members), an independent-samples *t*-test was run with Player A (the ingroup member) and Player B (the outgroup member) as the independent variable and perceived closeness, as measured with the IOS scale, as the dependent variable. The liberally inclined participants pre-selected for the study were appropriately significantly more likely to perceive closeness with Player A ($M = 3.51$, $SD = 2.06$) than Player B ($M = 1.31$, $SD = 0.66$), $t(346) = 13.41$, $p < .001$.

Organization Support. To test whether participants supported the organizations of the ingroup and outgroup members, an independent-samples t-test was run with Player A's (ingroup) organization and Player B's (outgroup) organization as the independent variable and organization support as the dependent variable. As expected, our liberal participants were significantly more likely to support Player A's organization of Planned Parenthood (*M*

= 4.70, *SD* = 0.63) than Player B's organization of Blue Lives Matter (*M* = 1.34, *SD* = 0.69), $t(346) = 47.72$, $p < .001$. Additionally, in comparing individual responses on organization support for Player A and Player B's organizations, all participants indicated equal or greater organization support for Player A's Planned Parenthood organization than Player B's Blue Lives Matter organization.

Together, responses to these latter two manipulation checks suggest that the ingroup-outgroup manipulation was effective. Participants were more likely to view Player A as an ingroup member and view Player B as an outgroup member, so emotion regulation attempts by participants were intended to be instrumental to achieve group goals.

Dependent Variables

Preferences for Emotion-Inducing Stimuli to Expose to the Target. A three-way mixed ANOVA was conducted with target's group membership (ingroup vs. outgroup) and emotional stimuli (anger, happiness, neutral) as within-subjects variables, and instrumentality of emotion in game (boxing vs. music) as a between-subjects variable. The dependent variable was preferences for emotion-inducing stimuli to expose to the target. (See Table 2 for the ANOVA summary table for the following main effects and interactions).

Table 2

Three-Way Mixed ANOVA Results with Preferences for Emotion-Inducing Stimuli as the Outcome Variable

Predictor	df_{Num}	df_{Den}	SS_{Num}	SS_{Den}	F	p	η^2_p
Instrumentality of Emotion in Game	1	172	11.59	153.58	12.98	<.001	.07
Emotion-Inducing Stimuli	2	344	27.02	157.26	29.55	<.001	.15

Group Membership	1	172	57.97	262.69	37.95	<.001	.18
Game x Stimuli	2	344	0.73	157.26	0.79	.453	.00
Game x Group	1	172	0.02	262.69	0.01	.920	.00
Stimuli x Group	2	344	109.39	741.28	25.38	<.001	.13
Game x Stimuli x Group	2	344	583.67	741.28	135.43	<.001	.44

Note. df_{Num} indicates degrees of freedom numerator. df_{Den} indicates degrees of freedom denominator. SS_{Num} indicates sum of squares numerator. SS_{Den} indicates sum of squares denominator. η^2_p indicates partial eta-squared.

In support of Hypothesis 3 that group members will want to increase instrumental emotions and decrease non-instrumental emotions for their ingroup and decrease instrumental emotions and increase non-instrumental for their outgroup, the three-way interaction among instrumentality of emotion in the game, emotion-inducing stimuli, and group membership was statistically significant (see Figure 5). When participants believed that the boxing game would be played, for which anger would be instrumental, participants were significantly more likely to want to expose the ingroup target to the instrumental anger emotion-inducing stimulus (M = 3.66, SD = 1.26) than to the non-instrumental happiness (M = 1.86, SD = 1.16, $p < .001$) or neutral (M = 1.83, SD = 1.01, $p < .001$) emotion-inducing stimuli. Conversely, their preferences for emotion-inducing stimuli were reversed when sending these videos to the outgroup member. When participants believed that anger was instrumental, participants were significantly more likely to want to expose the outgroup target to the non-instrumental happiness (M = 3.74, SD = 1.32, $p < .001$) or neutral (M = 3.02, SD = 1.32, $p < .001$) emotion-inducing stimuli, in comparison to the instrumental anger emotion-inducing stimulus (M = 1.98, SD = 1.17).

However, when participants believed that the music game would be played, for which happiness would be instrumental, participants were significantly more likely to want to expose the ingroup target to the instrumental happiness emotion-inducing stimulus (M = 3.57, SD = 1.21) than to the non-instrumental anger (M = 1.63, SD = 0.95, $p < .001$) or neutral (M = 1.48, SD = 0.80, $p < .001$) emotion-inducing stimuli. Again, their preferences for emotion-inducing stimuli were reversed when sending these videos to the outgroup member. When participants believed that happiness was instrumental, participants were significantly more likely to want to expose the outgroup target to the non-instrumental anger (M = 3.44, SD = 1.18, $p < .001$) or neutral (M = 3.06, SD = 1.10, $p < .001$) emotion-inducing stimuli, in comparison to the instrumental happiness emotion-inducing stimulus (M = 1.63, SD = 0.92). This predicted three-way interaction subsumed other significant main effects and interactions.

There was a significant main effect of instrumentality of emotion in game on preferences for emotion-inducing stimuli to expose to the target, demonstrating that participants strongly preferred to expose targets (regardless of group membership) to more emotion-inducing stimuli when they believed anger would be instrumental (i.e., boxing game; M = 2.68, SD = 1.46) rather than when they believed happiness would be instrumental (i.e., music game; M = 2.47, SD = 1.37).

There was a significant effect of emotion-inducing stimuli for the target on preferences for emotion-inducing stimuli to expose to the target. A post-hoc Tukey's HSD was conducted, reflecting that participants had greater preferences for happiness (M = 2.70, SD = 1.50) rather than neutral (M = 2.35, SD = 1.28) emotion-inducing stimuli, p = .005, and

anger (M = 2.67, SD = 1.44) rather than neutral emotion-inducing stimuli, p = .005, but not between happiness and anger emotion-inducing stimuli, p = .97.

There was also a main effect of target's group membership on preferences for emotion-inducing stimuli to expose to the target, suggesting that participants had greater preferences for emotion-inducing stimuli for outgroup members (M = 2.81, SD = 1.40) rather than for ingroup members (M = 2.34, SD = 1.41).

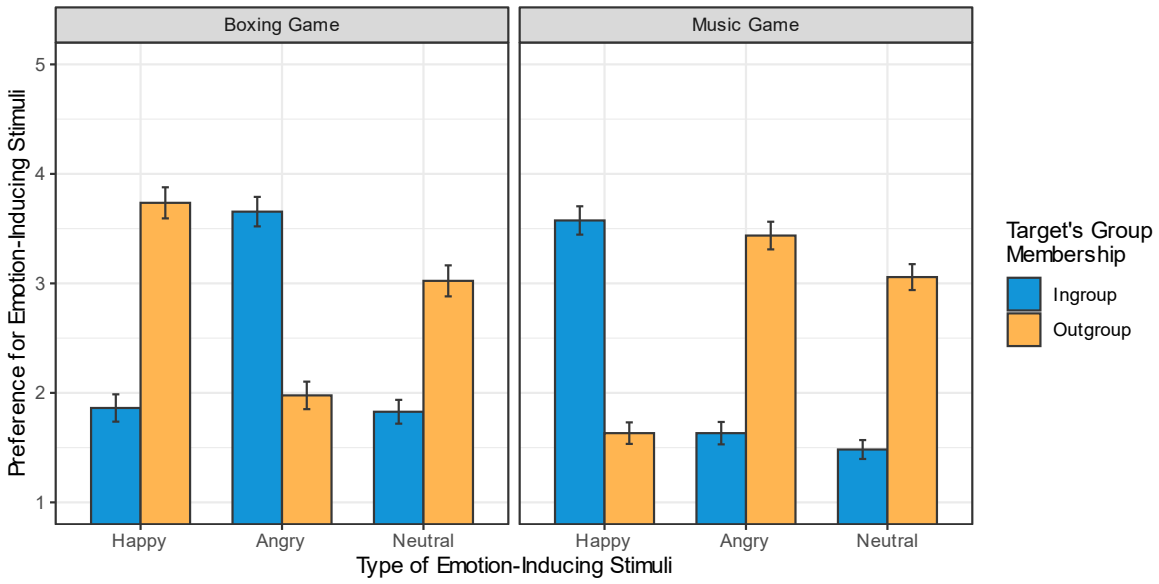
There was not a significant two-way interaction between instrumentality of emotion in game and emotion-inducing stimuli, indicating that participants had similar preferences for happiness, anger, and neutral emotion-inducing stimuli in both the boxing and music game. There also was not a significant two-way interaction between instrumentality of emotion in game and target's group membership, such that preferences for emotion-inducing stimuli did not significantly vary between the boxing and music game for ingroup or outgroup members.

However, there was a significant two-way interaction between emotion-inducing stimuli and the target's group membership. Specifically, for ingroup members, participants were significantly more likely to have preferences for anger (M = 2.64, SD = 1.51) rather than neutral (M = 1.66, SD = 0.93) emotion-inducing stimuli, $p < .001$, and for happiness (M = 2.72, SD = 1.46) rather than neutral emotion-inducing stimuli, $p < .001$. However, these effects were not statistically significant for outgroup members. Additionally, participants were significantly more likely to have preferences for neutral emotion-inducing stimuli for outgroup members (M = 3.04, SD = 1.21) than for ingroup members (M = 1.66, SD = 0.93) . The results from this interaction suggest that across the instrumentality of emotion in game (i.e., boxing or music game) that participants believe will be played, participants preferred to

expose ingroup members to emotion-eliciting stimuli that were instrumental (i.e., happiness and anger) for ingroup success and greater preferences to expose outgroup members to emotion-eliciting stimuli that were *not* instrumental (i.e., neutral).

Figure 5

Three-Way Interaction of Instrumentality of Emotion in the Game, Emotion-Inducing Stimuli, and Target's Group Membership on Preferences for Emotion-Inducing Stimuli



Positive Emotion, Negative Emotion, and Anger Words. A two-way mixed ANOVA was conducted with target's group membership (ingroup vs. outgroup) as a within-subjects variable and instrumentality of emotion in the game (boxing vs. music) as a between-subjects variable. The dependent variables were percentage of positive emotion words, negative emotion words, and anger words.

Word Count of Positive Emotion, Negative Emotion, and Anger Words. When interpreting the extent of positive emotion, negative emotion, and anger in participants' messages, it is essential to consider how these dependent variables were calculated. The LIWC 2022 software program counts the frequency of positive emotion, negative emotion,

or anger words, and divides this frequency by the word count to gather the percentages of positive emotion, negative emotion, and anger words used.

However, this methodology may be more reliable when word count is greater and less variable between messages, compared to the messages in this study in which the word count fluctuates, as well as when positive emotion is more indirectly conveyed through more words rather than directly with positive emotion words. For instance, according to LIWC, the phrase "Good luck and play your hardest!!" has 3 positive emotion words, 6 words total, with a percentage of 50, whereas the phrase "You've got this Player A!!! I know you can win, and I'm rooting for YOU! Make sure to stay alert and put everything you have into it. You're the best!" also has 3 positive emotion words, 30 words total, with a percentage of 10. Arguably, the latter phrase is more likely to upregulate positive emotions in a target rather than the prior phrase, yet it has a much lower positive emotion words percentage.

Specifically, regardless of the instrumentality of emotion in the game, word count for Player A ranges from 0 to 227 (M = 22.08, SD = 21.51), with a median of 16.50, skewness of 5.46, and a kurtosis of 49.53. Word count for Player B ranges from 0 to 171 (M = 17.94, SD = 20.99), with a median of 12, skewness of 3.51, and a kurtosis of 20.79. Both word count distributions are positively skewed and leptokurtic, in which there are extensive outliers.

Additionally, participants' messages to ingroup members used significantly more words than their messages to outgroup members, $t(1030) = 3.13$, $p = .002$. As a result, percentages of positive emotion words for ingroup (M = 12.29, SD = 12.21) and outgroup members (M = 16.34, SD = 21.92), percentages of negative emotion words for ingroup (M = 2.36, SD = 4.92) and outgroup members (M = 4.82, SD = 8.67), and percentages of anger

words for ingroup (M = 1.33, SD = 3.43) and outgroup members (M = 1.01, SD = 4.41) varied as well. This suggests that regardless of the instrumentality of the emotion in the game, participants may be more likely to try to regulate the emotions of ingroup members, compared to outgroup members.

Thus, in addition to operationalizing the amount of positive emotion, negative emotion, and anger as percentages of these words in the messages, the amount of positive emotion, negative emotion, and anger in these messages were also operationalized as raw counts of these words in the messages. By evaluating raw counts only, the variability in word count is no longer an influencing factor.

Percentage of Emotion Words.

Positive Emotion Words. In examining the effects of target's group membership and the instrumentality of emotion in the game, there was no significant main effect of instrumentality of emotion in the game on the percentage of positive emotion words, $F(1,170) = 1.34$, $p = .25$, $\eta_p^2 = 0.01$. Participants did not use significantly different percentages of positive emotion words in the boxing game and the music game. However, a significant main effect of target's group membership was found, in which participants used a greater percentage of positive emotion words in their responses to the outgroup member (M = 16.34, SD = 21.92) rather than the ingroup member (M = 12.29, SD = 12.21), $F(1,170) = 4.76$, $p = .03$, $\eta_p^2 = 0.03$. There was no significant interaction between instrumentality of emotion in the game and target's group membership on the percentage of positive emotion words, $F(1,170) = 0.11$, $p = .74$, $\eta_p^2 = 0.001$.

Negative Emotion Words. In examining the effects of target's group membership and instrumentality of emotion in the game, there was no significant main effect of

instrumentality of emotion in the game on the percentage of negative emotion words, $F(1,170) = 1.32$, $p = .25$, $\eta_p^2 = 0.01$. Participants did not use significantly different percentages of negative emotion words in the boxing game and the music game. However, a significant main effect of target's group membership was found, in which participants used a greater percentage of negative emotion words in their responses to the outgroup member ($M = 4.82$, $SD = 8.67$) rather than the ingroup member ($M = 2.36$, $SD = 4.92$), $F(1,170) = 12.87$, $p < .001$, $\eta_p^2 = 0.07$. There was no significant interaction between instrumentality of emotion in the game and target's group membership on the percentage of negative emotion words, $F(1,170) = 0.11$, $p = .74$, $\eta_p^2 = 0.002$.

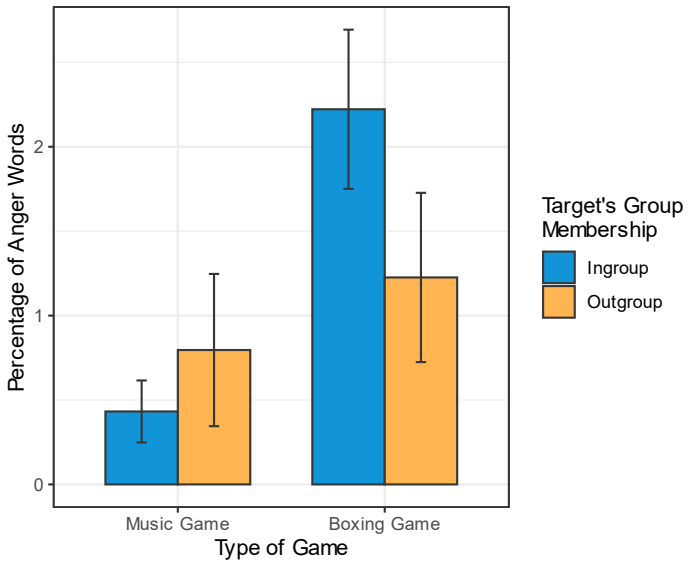
Anger Words. Since negative emotion words encompass a variety of different emotions, this analysis investigated the effects of target's group membership and instrumentality of emotion in the game on the percentage of anger words used. A significant main effect of instrumentality of the game on the percentage of anger words used was found, such that participants used a greater percentage of anger words with the boxing game in which anger was instrumental ($M = 1.72$, $SD = 4.53$) versus the music game in which happiness was instrumental ($M = 0.61$, $SD = 3.19$), $F(1,170) = 6.25$, $p = .01$, $\eta_p^2 = 0.04$. There was no significant main effect of the target's group membership on the percentage of anger words used, $F(1,170) = 0.63$, $p = .43$, $\eta_p^2 = 0.004$. Participants did not use significantly different percentages of anger words whether the target was an ingroup member or an outgroup member. Additionally, although the interaction term between group membership and instrumentality of emotion in the game was not statistically significant, it was trending in the predicted direction that participants would attempt to upregulate the instrumental

emotion for ingroup members and downregulate the non-instrumental emotion for outgroup members, $F(1,170) = 2.93$, $p = .09$, $\eta_p^2 = 0.02$.

To investigate this trend, a Tukey's HSD post-hoc test was conducted, finding that for ingroup members, participants used a greater percentage of anger words in the boxing game ($M = 2.22$, $SD = 4.37$) than the music game ($M = 0.43$, $SD = 1.70$), $p = .02$, but for outgroup members, participants used a similar percentage of anger words in the boxing game ($M = 1.23$, $SD = 4.65$) as in the music game ($M = 0.80$, $SD = 4.18$), $p = .89$. This suggests that when anger was instrumental in the boxing game, participants may be more likely to upregulate the anger of ingroup (rather than outgroup) members, as indicated by the greater percentage of anger words in messages toward the ingroup member (see Figure 6).

Figure 6

Non-Significant Two-Way Interaction of Group Membership and Instrumentality of Emotion in Game on Percentage of Anger Words



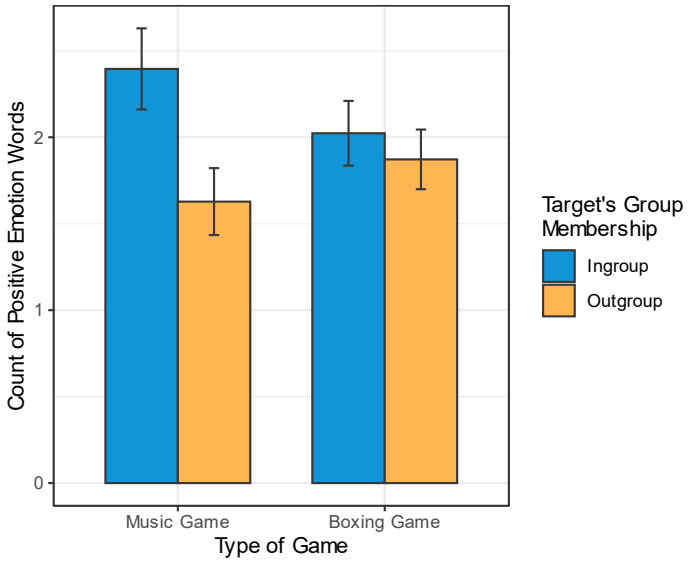
Raw Count of Emotion Words.

Positive Emotion Words. In examining the effects of target's group membership and instrumentality of emotion in the game, there was no significant main effect of instrumentality of emotion in the game on the count of positive emotion words, $F(1,170) = 0.80$, $p = .78$, $\eta_p^2 = 0.0005$. Participants did not have a significantly different count of positive emotion words in the boxing game and the music game. However, a significant main effect of target's group membership was found, demonstrating that participants used more positive emotion words in their responses to the ingroup member ($M = 2.21$, $SD = 1.97$) rather than the outgroup member ($M = 1.75$, $SD = 1.70$), $F(1,170) = 7.69$, $p = .006$, $\eta_p^2 = 0.04$. Additionally, although the interaction term between group membership and instrumentality of emotion in the game was not statistically significant, it was trending in the predicted direction that participants would attempt to upregulate the instrumental emotion for ingroup members and downregulate the non-instrumental emotion for outgroup members, $F(1,170) = 3.46$, $p = .06$, $\eta_p^2 = 0.02$.

To investigate this trend, a Tukey's HSD post-hoc test was conducted, finding that when happiness was instrumental in the music game, participants wrote more positive emotion words for ingroup members ($M = 2.39$, $SD = 2.18$) than for outgroup members ($M = 1.63$, $SD = 1.80$), $p = .007$. No other pairwise comparisons were statistically significant. This suggests that when happiness was instrumental in the music game, participants may be more likely to upregulate the happiness of ingroup (rather than outgroup) members, as indicated by the greater count of happiness words in messages toward the ingroup member than toward the outgroup member (see Figure 7).

Figure 7

Non-Significant Two-Way Interaction of Group Membership and Instrumentality of Emotion in Game on Count of Positive Emotion Words



Negative Emotion Words. In examining the effects of target's group membership and instrumentality of emotion in the game, there was no significant main effect of instrumentality of emotion in the game on the count of negative emotion words, $F(1,170) = 2.03$, $p = .16$, $\eta_p^2 = 0.01$. Participants did not use a significantly different number of negative emotion words in the boxing game and the music game. Additionally, there was not a significant main effect of target's group membership, and participants did not use a significantly different number of negative emotion words toward the ingroup or outgroup member, $F(1,170) = 0.23$, $p = .64$, $\eta_p^2 = 0.001$. There was no significant interaction between instrumentality of emotion in the game and target's group membership on the count of negative emotion words, $F(1,170) = 2.76$, $p = .10$, $\eta_p^2 = 0.02$.

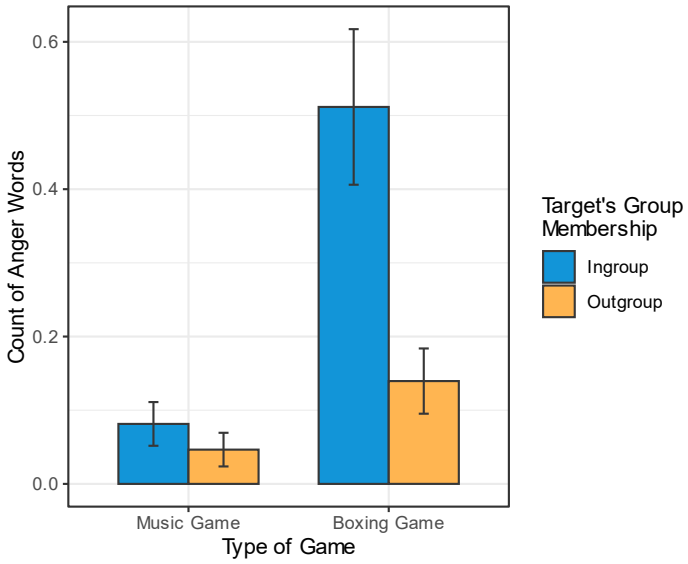
Anger Words. The effects of target's group membership and instrumentality of emotion in the game on the count of anger words specifically were also investigated. A significant main effect of instrumentality of the game on the count of anger words used was

found, such that participants used a greater number of anger words with the boxing game in which anger was instrumental ($M = 0.33$, $SD = 0.77$) versus the music game in which happiness was instrumental ($M = 0.06$, $SD = 0.25$), $F(1,170) = 15.74$, $p < .001$, $\eta_p^2 = 0.09$. There was also a significant main effect of the target's group membership on the number of anger words used, $F(1,170) = 14.25$, $p < .001$, $\eta_p^2 = 0.08$. Participants used a significantly greater number of anger words whether the target was an ingroup member ($M = 0.30$, $SD = 0.75$) rather than an outgroup member ($M = 0.09$, $SD = 0.33$). Additionally, the interaction term between group membership and instrumentality of emotion in the game was statistically significant, supporting the hypothesis that participants would attempt to upregulate the instrumental emotion for ingroup members and downregulate the non-instrumental emotion for outgroup members, $F(1,170) = 9.78$, $p = .002$, $\eta_p^2 = 0.05$.

A Tukey's HSD post-hoc test was conducted, finding that in the boxing game, participants used a greater number of anger words in messages toward ingroup members than toward outgroup members ($M = 0.14$, $SD = 0.41$), $p = < .001$. This suggests that when anger was instrumental in the boxing game, participants were more likely to upregulate the anger of ingroup (rather than outgroup) members, as indicated by the greater number of anger words in messages toward the ingroup member. Additionally, for ingroup members, participants used a greater number of anger words in the game when anger was instrumental (i.e., boxing game; $M = 0.51$, $SD = 0.98$) rather than in the game where happiness was instrumental (i.e., music game; $M = 0.08$, $SD = 0.28$), $p < .001$. (See Figure 8).

Figure 8

Significant Two-Way Interaction of Group Membership and Instrumentality of Emotion in Game on Count of Anger Words



Explicit Emotion Regulation Goals. A three-way mixed ANOVA was conducted with target's group membership (ingroup vs. outgroup) and targeted emotion (anger, happiness) as within-subjects variables, and instrumentality of emotion in game (boxing vs. music) as a between-subjects variable. The dependent variable was explicit emotion regulation goals. (See Table 3 for the ANOVA summary table for the following main effects and interactions). The three-way interaction among instrumentality of emotion in the game, targeted emotion, and group membership on explicit emotion regulation goals was statistically significant (see Figure 9). This three-way interaction subsumed other significant main effects and interactions.

Table 3

Three-Way Mixed ANOVA Results with Explicit Emotion Regulation Goals as the Outcome Variable

Predictor	df_{Num}	df_{Den}	SS_{Num}	SS_{Den}	F	p	η^2_p
Instrumentality of Emotion in Game	1	172	0.01	161.21	0.01	.938	<.001
Explicit Emotion Regulation Goals	1	172	68.28	138.96	84.52	<.001	.03

Group Membership	1	172	101.66	123.45	141.64	<.001	.45
Game x Goals	1	172	16.76	138.96	20.74	<.001	.11
Game x Group	1	172	5.89	123.45	8.20	.005	.05
Goals x Group	1	172	194.57	466.35	71.76	<.001	.29
Game x Goals x Group	1	172	362.07	466.35	133.54	<.001	.44

Note. df_{Num} indicates degrees of freedom numerator. df_{Den} indicates degrees of freedom denominator. SS_{Num} indicates sum of squares numerator. SS_{Den} indicates sum of squares denominator. η^2_p indicates partial eta-squared.

When participants believed that the music game would be played, for which happiness would be instrumental, participants were significantly more likely to have explicit emotion regulation goals for the ingroup member of upregulating the instrumental emotion of happiness (M = 4.58, SD = 0.62) rather than the non-instrumental emotion of anger (M = 1.14, SD = 0.44, $p < .001$). However, these results reversed when participants were asked about their explicit emotion regulation goals for the outgroup member. When participants believed that the music game would be played, for which happiness would be instrumental, participants were significantly more likely to have explicit emotion regulation goals for the outgroup member of upregulating the non-instrumental emotion of anger (M = 3.06, SD = 1.42) rather than instrumental emotion of happiness (M = 4.49, SD = 0.73, $p < .001$).

When participants believed that the boxing game would be played, for which anger would be instrumental, participants were significantly more likely to have explicit emotion regulation goals for the outgroup member of upregulating the non-instrumental emotion of happiness (M = 2.44, SD = 1.52) than to the instrumental emotion of anger (M = 1.74, SD = 1.14, $p < .001$). However, this pattern did not reverse as predicted for ingroup members. Instead, when participants believed that the boxing game would be played, for which anger

would be instrumental, participants did not differ in their explicit emotion regulation goals for the ingroup member of upregulating the instrumental emotion of happiness ($M = 3.00$, $SD = 1.26$) or the instrumental emotion of anger ($M = 3.07$, $SD = 1.43$, $p = 1.00$).

There was not a significant main effect of instrumentality of emotion in game on explicit emotion regulation goals. Participants did not have different explicit emotion regulation goals for upregulating emotions (regardless of target's group membership) whether they believed that they would be playing the boxing game (i.e., when anger would be instrumental; $M = 2.56$, $SD = 1.44$) rather than the music game (i.e., when happiness would be instrumental; $M = 2.57$, $SD = 1.63$), $p = .95$. However, there was a significant effect of targeted emotion on explicit emotion regulation goals, reflecting that participants had explicit emotion regulation goals for upregulating more happiness ($M = 2.88$, $SD = 1.56$) than anger ($M = 2.25$, $SD = 1.44$), $p < .001$. There was also a main effect of target's group membership on explicit emotion regulation goals, reflecting that participants had explicit emotion regulation goals for upregulating the emotions of ingroup members ($M = 2.81$, $SD = 1.40$) more than for outgroup members ($M = 2.34$, $SD = 1.41$), $p < .001$.

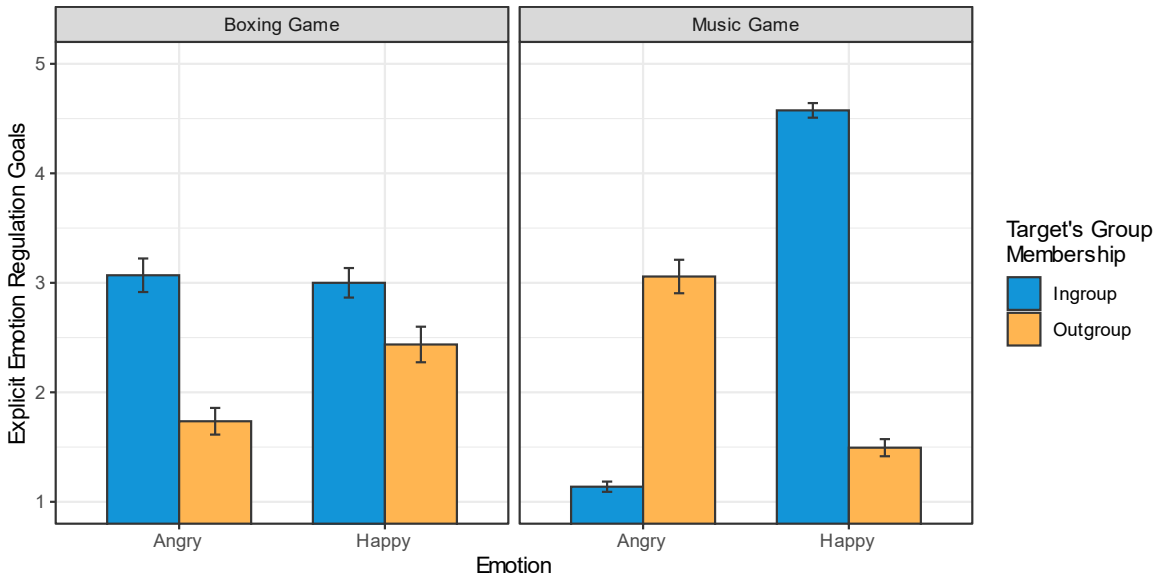
There was a significant two-way interaction between instrumentality of emotion in game and targeted emotion. Participants were significantly more likely to have explicit emotion regulation goals for upregulating happiness in the music game ($M = 3.03$, $SD = 1.69$) rather than the boxing game ($M = 2.72$, $SD = 1.42$), $p < .05$. However, although not statistically significant, participants tended to be more likely to have explicit emotion regulation goals for upregulating anger in the boxing game ($M = 2.40$, $SD = 1.45$) rather than the music game ($M = 2.10$, $SD = 1.42$), $p = .06$.

There was another significant two-way interaction between instrumentality of emotion in game and target's group membership. When participants believed that they would be playing the music game, participants were significantly more likely to have explicit emotion regulation goals for upregulating emotions of the ingroup ($M = 2.86$, $SD = 1.80$) rather than the outgroup ($M = 2.28$, $SD = 1.37$), $p < .001$. Additionally, when participants believed that they would be playing the boxing game, participants were even more likely to have explicit emotion regulation goals for upregulating emotions of the ingroup ($M = 3.03$, $SD = 1.34$) rather than the outgroup ($M = 2.09$, $SD = 1.38$), $p < .001$.

Last, there was a significant two-way interaction between targeted emotion and the target's group membership. Participants were significantly more likely to have explicit emotion regulation goals for ingroup members for upregulating the emotion of happiness ($M = 3.79$, $SD = 1.27$) rather than anger ($M = 2.10$, $SD = 1.43$), $p < .001$. However, participants were significantly more likely to have explicit emotion regulation goals for outgroup members for upregulating the emotion of anger ($M = 2.40$, $SD = 1.45$) rather than happiness ($M = 1.97$, $SD = 1.28$), $p < .001$.

Figure 9

Three-Way Interaction of Instrumentality of Emotion in the Game, Targeted Emotion, and Target's Group Membership on Explicit Emotion Regulation Goals



Discussion

Study 1 was an initial test of the model investigating whether emotion regulation goals differ for ingroup versus outgroup members when different emotions are instrumental. Specifically, Study 1 manipulated whether the target was an ingroup or outgroup member, comparing participants' emotion regulation goals when anger was instrumental or when happiness was instrumental. In particular, this study was a test of Hypothesis 1, that group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals; Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member; and Hypothesis 3, that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members. The results provide support for these hypotheses in an experimental setting.

As a test of Hypothesis 1, that group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals, participants had clear preferences for

which emotion-inducing stimuli they wanted to expose the ingroup members to and which emotion-inducing stimuli they wanted to expose the outgroup members to. In doing so, participants were attempting to influence the emotions of both ingroup and outgroup members (albeit differently) to achieve the group goal of winning a game, such that additional money would be donated to their political organization of choice rather than the political organization of their outgroup member. When participants were explicitly asked about their emotion regulation goals for ingroup members (i.e., the extent to which participants wanted ingroup members to feel a certain emotion), participants indicated wanting ingroup members to feel happiness and even anger (although to a lesser extent) when the emotion was instrumental. Additionally, when participants were explicitly asked about their emotion regulation goals for outgroup members, participants indicated wanting outgroup members to feel anger and happiness when the emotion was non-instrumental.

Ingroup and outgroup memberships rather than individual relationships were established through this game paradigm. Since the goal was to give donations to the political organizations, a group goal was established, and neither the regulator nor targets had a personal stake in the game and personally benefitted from a potential win. Additionally, if the regulator did not self-categorize with the group, when anger was instrumental during the boxing game, the group member would not have instrumental goals for the ingroup member and have upregulated anger, an anhedonic emotion. Rather, if they chose to align with Player A as an individual rather than an ingroup member, the regulator would more likely have hedonic goals for Player A to increase personal liking. As such, the results of this study suggest that these were indeed group members (rather than individuals) with group goals who regulated the emotions of ingroup and outgroup members, in support of Hypothesis 1.

However, future research can investigate levels of group identification with the ingroup to see how that may influence group goals.

In investigating Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member, participants were able to differentiate between ingroup or outgroup members. For instance, participants were more likely to perceive closeness with and support the organization of Player A (i.e., the ingroup member) rather than perceive closeness with and support the organization of Player B (i.e., the outgroup member). This suggests that an ingroup-outgroup paradigm took place, in which participants self-categorized themselves as group members, then target-categorized their ingroup and outgroup members by identifying whether the target was aligned or not aligned with their group goals. Participants then had the goal of upregulating instrumental emotions and downregulating non-instrumental emotions for ingroup members, and the goal of downregulating instrumental emotions and upregulating instrumental emotions for outgroup members, consistent with Hypothesis 2. Specifically, participants had different preferences for exposing players to happiness, anger, and neutral emotion-inducing stimuli depending on whether the player was an ingroup or outgroup member. Additionally, when explicitly asked about the emotions that participants wanted the players to feel, participants had different preferences for ingroup and outgroup members.

Next, in support of Hypothesis 3 that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members, participants had different emotion regulation goals for ingroup and

outgroup members depending on whether happiness was instrumental or whether anger was instrumental.

For ingroup members, participants tried to upregulate instrumental emotions and generally tried to downregulate non-instrumental emotions. When happiness was instrumental (in the music game), participants were more likely to want to upregulate the instrumental emotion of happiness and downregulate non-instrumental emotion of anger, as was demonstrated by their greater desire to expose ingroup players to the happiness emotion-inducing stimuli and their lower desire to expose them to the anger emotion-inducing stimuli. This was also evident when participants were explicitly asked about the emotions that they wanted the players to feel before playing the music game.

A different pattern emerged when anger was instrumental in the boxing game. When asked about the emotion-inducing stimuli that participants wanted to expose the ingroup member to, participants were more likely to want to upregulate the instrumental emotion of anger and downregulate the non-instrumental emotion of happiness, by a greater desire to expose ingroup players to the anger emotion-inducing stimuli and lower desire to expose them to the happiness emotion-inducing stimuli. However, when participants were explicitly asked about the emotions that they wanted the ingroup member to feel during the boxing game when anger was instrumental, participants did not significantly differ in whether they wanted participants to feel the instrumental emotion of anger and the non-instrumental emotion of happiness. These differing results may be attributed to the anhedonism of anger and the hedonism of happiness. This is because despite participants being significantly more likely to believe that anger was more instrumental than happiness in the boxing game (for both ingroup and outgroup members), when participants were explicitly asked what

emotions that they wanted the ingroup members to feel, participants still wanted the ingroup members to feel both the instrumental, anhedonic emotion of anger, as well as the non-instrumental, hedonic emotion of happiness.

Conversely, for outgroup members, when happiness was instrumental in the music game, participants were more likely to want to upregulate the non-instrumental emotion of anger and downregulate the instrumental emotion of happiness. This was evident due to participants' preferences for exposing outgroup players to the anger emotion-inducing stimuli more and the happiness emotion-inducing stimuli less. The opposite pattern emerged when anger was instrumental in the boxing game. Participants were more likely to want to upregulate the non-instrumental emotions of happiness and to downregulate the instrumental emotion of anger by wanting to expose outgroup members to the happiness emotion-inducing stimuli and not wanting to expose them to the anger emotion-inducing stimuli. These goals of upregulating non-instrumental emotions and downregulating instrumental emotions were also demonstrated by participants' explicit emotion regulation goals of wanting the outgroup member to feel more anger than happiness when they believed the music game would be played, and wanting the outgroup member to feel more happiness than anger when they believed the boxing game would be played.

Although there were no specific hypotheses about neutral emotions, these emotions were perceived as non-instrumental. Participants were more likely to want to expose outgroup members to neutral emotions, regardless of whether happiness or anger was instrumental in the game. Additionally, there was no significant difference between wanting to expose outgroup members to neutral emotions and the non-instrumental emotion, such that when happiness was instrumental, participants were equally likely to want to expose

outgroup members to anger and neutral emotions, and when anger was instrumental, participants were equally likely to want to expose outgroup members to happiness and neutral emotions.

In investigating the messages that participants wrote for their ingroup and outgroup members, results varied depending on whether the percentages or raw word counts of positive emotion, negative emotion, and anger words were used. In comparison to the null results from the percentages of emotion words in the messages, the results from the word counts of emotion words in the messages more strongly support the hypotheses that group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals (Hypothesis 1); that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member (Hypothesis 2); and that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Hypothesis 3).

Specifically, results from the word counts indicated that when anger was instrumental in the boxing game, participants were more likely to use more anger words in their messages toward ingroup members versus outgroup members. This suggests that when anger was instrumental, participants were trying to regulate their ingroup members' group-based emotions (Hypothesis 1a) by upregulating their emotions of anger in using more emotion words; anger was perceived as instrumental to group goals as a function of the target being an ingroup rather than an outgroup member (Hypotheses 2) so more anger words were directed toward ingroup rather than outgroup members; and participants

attempted to upregulate the instrumental emotion of anger in ingroup members and downregulate this instrumental emotion in outgroup members (Hypothesis 3).

Although the results from the word counts on positive emotion were merely trending, they were in the predicted direction. With positive emotion words, when happiness was instrumental in the music game, participants wrote a non-significant amount of more positive emotion words for ingroup members than outgroup members, suggesting that participants may be more likely to try to upregulate positive emotions more in ingroup members than outgroup members.

A potential explanation for why the word counts provided more robust results than the percentages may have to do with the total word counts. For instance, the message of "Keep your focus! You got this!" scored a 0 in percentage of positive emotion words, the message of "You got this! Keep your head in the game and play hard!" scored an 8.33 in percentage of positive emotion words, and the message of "You got this! You're doing great!" scored a 16.67 in percentage of positive emotion words. The variability in these scores also emerges in how words are counted where even though "you're" and "you are" convey the same thing, they are counted as one word versus two words, respectively. With the low frequency of words in some of these messages, this variability in word count additionally contributes to the lack of reliability in these percentages of positive emotion, negative emotion, and anger words. As such, due to the lack of reliability in these percentages, using these percentages for evaluating attempts at emotion regulation in these comments is not recommended, and raw counts of emotion words should be assessed instead.

Prior research suggests that group members generally prefer ingroup members to experience positive emotions (Halevy et al., 2008) and outgroup members to experience negative emotions (Toosi et al., 2012). The results from the music game condition, in which happiness was instrumental, are consistent with this prior research, since group members preferred to expose ingroup members to a happiness emotion-inducing stimulus, while preferring to expose outgroup members to anger emotion-inducing stimuli. Additionally, when participants were explicitly asked about the emotions that they wanted the ingroup members to feel in the boxing game when anger was instrumental, participants not only wanted ingroup members to feel anger due to its instrumentality, but they wanted ingroup members to feel happiness due to its hedonism. Hedonic emotion regulation goals for ingroup members are preferred since these goals allow for maintaining a positive social identity for positive self-evaluations (Halevy et al., 2008).

However, of novelty in this study is the instrumentality of anger in the boxing game rather than the instrumentality of happiness in the music game. This study provides experimental evidence that instrumental group goals can supersede hedonic group goals. Despite anger being anhedonic in the boxing game, group members had goals of upregulating this negative emotion due to its instrumentality, and also wanted to downregulate the hedonic but non-instrumental emotion of happiness for ingroup members. In this example, the instrumental group goal of winning the boxing game to support a political organization was prioritized over the hedonic goal of having group members experience positive group emotions.

In this same boxing game, the opposite pattern emerged for outgroup members. Although group members tend to have anhedonic emotion regulation goals for outgroup

members (Toosi et al., 2012), due to the lack of instrumentality for positive emotions, group members had hedonic emotion regulation goals of upregulating happiness or neutral emotions for outgroup members. In this way, instrumental group goals superseded anhedonic group goals for outgroup members. Specifically, since happiness and neutral emotions were non-instrumental in the boxing game, group members upregulated these hedonic emotions for outgroup members by valuing the longer-term instrumental group goal of winning the boxing game to support a political organization rather than the short-term anhedonic goal of outgroup harm.

Importantly, the results suggested that participants were actively trying to regulate the emotions of outgroup members, as demonstrated by the high preferences for anger and neutral emotion-inducing stimuli during the music game, and high preferences of happiness and neutral emotion-inducing stimuli during the boxing game, for the outgroup members. In this way, group members were not indifferent to outgroup members and had specific emotion regulation goals for them. This is supported by prior research suggesting that people are willing to both help the ingroup while also harming the outgroup, particularly if the groups are morality-based (e.g., political groups; Parker & Janoff-Bulman, 2013). In this study, group members actively attempted to influence the emotions of outgroup members to harm the outgroup members' group goals (i.e., to influence the outgroup member to lose the game and be unable to donate to their political organization).

These results provide preliminary insight into Hypotheses 2 on how self-categorization and target-categorization influence how group members determine what emotion regulation goals to set in their pursuit of group goals. In this way, the group membership of the target is one of the determining factors influencing how interpersonal

group-based emotion regulation is carried out, and the instrumentality of the emotion determines what emotions will be regulated and how. Specifically, the results suggest that group members regulate positive and negative emotions of both ingroup and outgroup members to accomplish the overarching goals of their group.

Thus, in regulating the emotions of ingroup members, if there is instrumentality in up-regulating negative emotions or down-regulating positive emotions, this instrumental goal overrides the hedonic goals of upregulating their positive emotions or down-regulating their negative emotions, as proposed in Hypothesis 3, where emotions are up- or down-regulated for instrumental reasons. These results support prior literature on intrapersonal and interpersonal emotion regulation, where individuals have hedonic goals but will upregulate individual-based negative emotions or downregulate individual-based positive emotions for instrumental purposes, such as improving performance (Netzer et al., 2015; Tamir et al., 2008).

Conversely, for outgroup members, regulators may not have hedonic goals of upregulating positive and down-regulating negative emotions but anhedonic goals of down-regulating positive and upregulating negative emotions, unless it is instrumental to do otherwise. Although group members usually want outgroup members to feel bad, not better (Plant & Devine, 2003), group members will upregulate positive emotions for outgroup emotions for instrumental group goal purposes.

In this study, ingroup and outgroup group goals were in conflict with each other due to being in a zero-sum scenario. The emotion that was instrumental for the group member to upregulate for the ingroup member (e.g., anger during the boxing game) was the same as the emotion that was non-instrumental for the group member to upregulate for the outgroup

member. However, ingroup-outgroup relations may not always be so contentious, and emotions that are instrumental to upregulate for the ingroup member may differ from the emotions that are non-instrumental to upregulate for the outgroup member. For instance, it is possible for ingroup and outgroup group goals to align, such as in cooperative scenarios, or for ingroup group goals to have no effect on outgroup members. In this way, just as instrumental emotion regulation goals may align or conflict between ingroup and outgroup members, hedonic emotion regulation goals may align or conflict between ingroup and outgroup members, all depending on group goals. Future research can examine group members' emotion regulation goals for ingroup and outgroup members in different group scenarios (e.g., cooperative, competitive, irrelevant). ***Conclusion***

In summary, the results of Study 1 experimentally demonstrated that group members regulate the emotions of both ingroup and outgroup members for instrumental goals. Results supported the ideas that group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals (Hypothesis 1); that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member (Hypothesis 2); and that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Hypothesis 3). Study 1 demonstrated that regulators will try to upregulate the instrumental emotion and downregulate the non-instrumental emotion for ingroup members, whether the emotion is hedonic or not, and that they will try to upregulate the non-instrumental emotion and downregulate the instrumental emotion for outgroup members, whether the emotion is anhedonic or not.

Thus, the next two studies build on these results in an ecologically valid setting by examining the regulation of group emotions in naturally occurring situations. Specifically, the next two studies investigate how group emotions are regulated in news articles from more liberal to more conservative news sources on political and non-political events, examining how these news articles affect group members' emotions.

Study 2

Study 2 examined whether group members try to regulate the emotions of ingroup members in group-relevant (vs. group-irrelevant) situations. This archival study investigated whether the political identity of media sources (i.e., group membership) influenced how they regulated ingroup emotions in politically group-relevant events (i.e., group-relevant events where people self-categorize as group members) versus politically group-irrelevant events (i.e., group-irrelevant events where people self-categorize as individuals), and how the instrumentality of the emotion affected these emotion regulation goals. Specifically, this study tested Hypothesis 1a, that group members attempt to regulate the emotions of ingroup members, by examining whether these media sources try to influence the emotions of their readers (i.e., ingroup members); Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member, by determining whether these emotion regulation goals differ depending on the regulator's group membership; and Hypothesis 3a, that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, by assessing the upregulation of the emotion instrumental to the goals of these media sources and the downregulation of the emotion not instrumental to the goals of these media sources.

Although media sources are generally relied upon to convey accurate information, they often frame the same stories differently and are differentially trusted by the public, and thus, have different impacts on the attitudes of its consumers (Coninck et al., 2018). For instance, despite covering the same event, media sources that used graphic image content, compared to media sources that did not use graphic image content, were more likely to negatively affect its consumers (Holman et al., 2019). In this way, depending on how they want to influence their readers, whether through their words or pictures, media sources are able to influence their audience differently even if they are discussing the same event.

Due to these differences in portraying the same event, media sources can be rated to determine the extent to which they express or endorse the viewpoints of a particular group, which in this study are the perspectives of political groups. In particular, since the profits of media sources depend on audience ratings, important information is often suppressed to cater to a partisan audience, creating political bias in the conveyed news (Bernhardt et al., 2008). For example, more liberal media sources tend to write for a more liberal audience, and more conservative media sources tend to write for a more conservative audience (e.g., 93% of the audience of Fox News, a conservative media source, have more Republican ideals, and 95% of the audience of MSNBC, a liberal media source, have more Democratic ideals; Pew Research Center, 2019). This suggests that media sources are group members intentionally trying to influence their audience of ingroup members, and that news articles from media sources are a source of communication in which group members try to influence the emotions instrumental to their ingroup.

In politically group-relevant events, the political identity of media sources is activated (i.e., self-categorization with the group self), whereas in politically group-

irrelevant events, the political identity of media sources is not activated (i.e., self-categorization to the personal self). Since the political identity of media sources was activated in politically group-relevant events, their emotion regulation goals should be based on group goals and consider the emotion instrumental to these group goals. Conversely, since political identity was not activated in politically group-irrelevant events, media sources should not have emotion regulation goals based on group goals.

Specifically, for this study, the politically group-relevant event of the Coronavirus disease (COVID-19) pandemic in 2020 was used, in which greater political liberalism was associated with perceiving COVID-19 as a threat (Shepherd et al., 2020), suggesting that anxiety may be an instrumental emotion to more liberal media sources and a non-instrumental emotion to more conservative media sources. Due to these heightened perceptions of COVID-19 as a threat, more liberal media sources should have the emotion regulation goal of upregulating the anxiety of their readers, whereas more conservative media sources should have the emotion regulation goal of downregulating the anxiety of their readers. The politically group-irrelevant event used was celebrity deaths, particularly the deaths of beloved celebrities Kobe Bryant, an American professional basketball player for the Los Angeles Lakers, and Alex Trebek, the game host of Jeopardy!, both of whom died in 2020, matching the year of the start of the COVID-19 pandemic. Thus, media sources should not have any emotion regulation goals when reporting on celebrity deaths.

In addition to these two politically group-relevant and group-irrelevant events, a third event was investigated to serve as a politically group-relevant control group: the Ebola crisis, a deadly disease that threatened the U.S. in 2014. As with COVID-19, Ebola was sensationalized by the media (Goodwyn, 2014), but in contrast to COVID-19, conservatives

expressed more concern about Ebola than liberals did, using the disease as a political strategy against the Democratic Party (Sell et al., 2017). Similar to COVID-19, Ebola was a politically group-relevant and disease-related event, but the political identity that viewed Ebola as a threat (i.e., conservatives rather than liberals) was opposite to that of COVID-19. Thus, more conservative media sources should have the emotion regulation goal of upregulating the anxiety of their readers, whereas more liberal media sources should have the emotion regulation goal of downregulating the anxiety of their readers.

Study 2 tested Hypothesis 1a, that group members attempt to regulate the emotions of ingroup members to achieve group goals; Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on whether the target is an ingroup or outgroup member; and Hypothesis 3a, that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members. I predicted that in comparison to politically group-irrelevant events, in politically group-relevant events, more liberal versus more conservative media sources would have different emotion regulation goals, operationalized by the number of affective words that they use in their articles. Specifically, I hypothesized that (a) in describing group-relevant articles about COVID-19 to their respective ingroups, more liberal media sources would use more negative emotion words and more anxiety words (due to their instrumentality to group goals) than more conservative media sources would, but that this difference would not occur with group-irrelevant articles about celebrity deaths; (b) in describing group-relevant disease events to their ingroup members, more liberal versus more conservative media sources would use significantly more negative emotion and anxiety words (due to their instrumentality to group goals) when describing COVID-19, which was more threatening to

liberals than conservatives (Shepherd et al., 2020), than when describing Ebola, which was more threatening to conservatives than liberals (Goodwyn, 2014; Sell et al., 2017); and (c) in describing group-relevant articles about Ebola to their ingroup members, more conservative media sources would use more negative emotion words and more anxiety words (due to their instrumentality to group goals) than more liberal media sources would, but that this difference would not be significant with group-irrelevant articles about celebrity deaths.

Methods

Design

Study 2 was a continuous political identity by 3 type of event (COVID-19, Ebola, celebrity death) correlational study. The political identity rating of the media source was between-subjects, ranging from liberal to conservative. The type of event reported by the media source was a moderator, where COVID-19 was a political event about a deadly disease in 2020, Ebola was a political event about a deadly disease in 2014, and celebrity death was a control event in 2020. Dependent variables were measured as percentage of affective words used, specifically percentage of negative emotion words and percentage of anxiety words used.

Procedure and Materials

Selection of News Articles. To gather articles on these three events from a wide range of liberal to conservative media sources, three research assistants independently searched the Google News to find the full article on the event, using search term keywords related to the event (e.g., “Alex Trebek death”, “COVID-19 first death in U.S.”), while filtering for the 48 U.S. media sources. If these articles could not be found using Google News, the databases of these media sources were used.

Event Selection. Two events each were chosen to represent the categories of COVID-19, Ebola, and celebrity deaths. The events selected to represent the COVID-19 pandemic of 2020 and the Ebola epidemic of 2014 were directly parallel, specifically (1) the first patient treated for the disease in the U.S. and (2) the first infected patient death in the U.S. Two events selected to represent celebrity deaths were also chosen: the deaths of two popular and non-political celebrities in 2020: Kobe Bryant (who died on 1/27/2020) and Alex Trebek (who died on 11/8/2020). Articles did not need to be published on the exact date noted but it needed to focus on the specific topic. For instance, articles about Bryant's contributions to the Lakers mentioning his death or an article about holding a memorial for Bryant were not included, and only articles specifically covering Bryant's death event and how he died were included.

Once a relevant article was located, only the headline, sub-headline, and the text of the body of each article were extracted, and any advertisements or extraneous information not directly related to the reporting of the event were excluded (e.g., date, author name). Each article was compiled into one data file.

Media Source Selection. To determine which media sources would be used to collect news articles, each media source was rated by at least three of the seven established and/or published rating systems of media bias and maintained consistent ratings (i.e., if a media source had both a left- or right-leaning rating, then it was not selected). See Appendix C for descriptions of the methodologies of these seven rating systems.

Articles were searched for in 48 media sources. Only outlets consistently rated by at least three of the seven established and/or published rating systems of media bias were considered (i.e., if a media source had both a left- or right-leaning rating, then it was not

selected). See Appendix C for descriptions of the methodologies of these seven rating systems. No articles were found in five media sources, so a total of 43 media sources were used in this study. The ratings of these 43 media sources were standardized within each of the seven rating systems, then averaged across the z-scores, resulting in one composite political identity rating for each media source. As can be seen in Figure 10, the political identity of these sources varied across the political spectrum, ranging from -1.53 to 1.76 (M = 0.06, SD = 0.96, where more negative ratings were more liberal, and more positive ratings were more conservative). (See Table 4 for a full list of media sources and ratings.)

Figure 10

Political Identity of Media Sources in Study 2

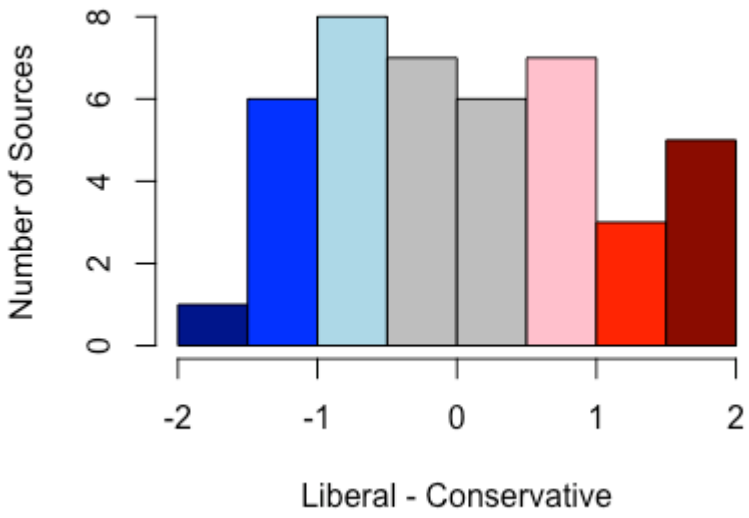


Table 4

List of Media Sources and their Political Identity Rating

Media Source	Rating	Media Source	Rating
Daily Kos	-1.53	Christian Science Monitor	0.09

The Nation	-1.30	Associated Press	0.09
Slate	-1.30	Chicago Tribune	0.35
Daily Beast	-1.27	Wall Street Journal	0.45
The New Yorker	-1.16	Forbes	0.46
MSNBC	-1.07	Fiscal Times*	–
San Francisco Chronicle	-1.02	Christianity Today	0.81
Mother Jones	-0.97	New York Post	0.85
Huffington Post	-0.90	The American Conservative	0.85
BuzzFeed	-0.82	Reason	0.85
New York Times	-0.74	Washington Times	0.86
Los Angeles Times	-0.68	Boston Herald	0.88
Washington Post	-0.64	Washington Examiner	0.96
Politico	-0.58	Fox News	1.13
CNN	-0.52	Newsmax	1.20
The Atlantic	-0.50	National Review	1.29
NBC News	-0.42	City Journal*	–
Bloomberg News	-0.36	The American Spectator*	–
CBS News	-0.28	Daily Signal	1.53
ABC News	-0.26	RedState	1.53
Yahoo! News	-0.25	OAN Network*	–-
Foreign Policy*	–	Daily Caller	1.57
USA Today	-0.07	The Blaze	1.59
CNBC	0.08	Breitbart	1.76

Note: * These media sources were not used due to lack of articles. Media sources are listed from more liberal to more conservative.

Articles Selected. A total of 197 articles were selected. Article searches for the two events of the first patient treated for the disease in the U.S. (COVID-19: 1/21/2020, $n = 27$; Ebola: 8/2/2014, $n = 32$) and the first infected patient death in the U.S. (COVID-19: 2/29/2020, $n = 28$; Ebola: 10/8/2014, $n = 36$) yielded a total of 55 articles on COVID-19 and 68 articles on Ebola. Article searches for the two events of the deaths of Kobe Bryant (who

died on 1/27/2020, *n* = 38) and Alex Trebek (who died on 11/8/2020, *n* = 36) yielded a total of 74 articles on celebrity deaths.

Text Analysis. To measure the dependent variables of percentage of affective words used, each article was individually analyzed using the Linguistic Inquiry and Word Count (LIWC) 2022 default dictionary, which evaluated the percentage of words from the targeted category out of the total word count (Boyd et al., 2022). Specifically, the articles were analyzed for two different categories of emotion words: negative emotion words (e.g., hurt, ugly, nasty) and anxiety words (e.g., worried, fearful), as indicated in the hypotheses. The articles were also analyzed for the emotion word categories of anger (e.g., hate, kill, annoyed) and sadness (e.g., crying, grief, sad) in order to demonstrate that media sources were regulating anxiety specifically, and for the emotion word category of positive emotion (e.g., love, nice, sweet), in order to differentiate it from the emotion word category of negative emotion.

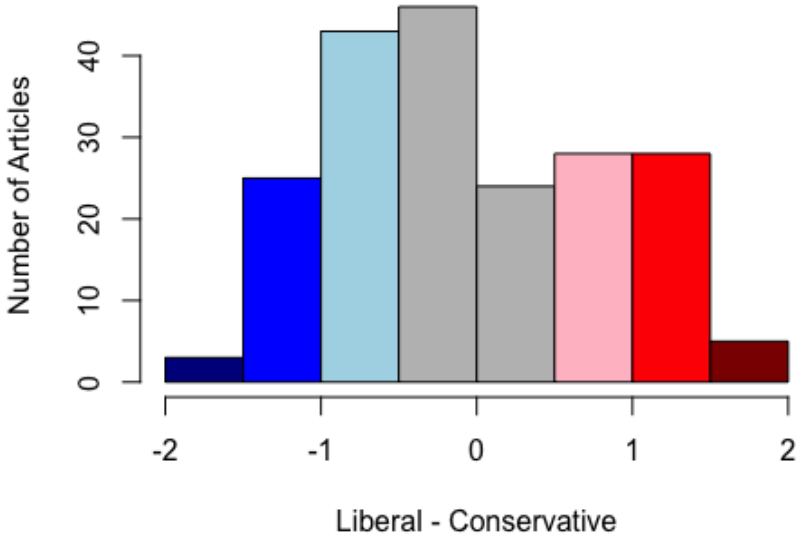
Due to the large number of words in the articles (*M* = 816.80, *SD* = 537.48), the LIWC methodology of examining emotion words in a body of text (i.e., calculating the percentage of words from the targeted category out of the total word count) did not provide similar biases to the extent that it did in Study 1. The large variability of word count in these articles necessitated considering word count in the operationalization of emotion words in these texts. Thus, the raw word count of words from the targeted category, which was the methodology in Study 1, was not used. Instead, these results operationalized emotion words in texts using the LIWC methodology of calculating the percentage of emotion words.

Results

To determine whether there was a skew in the political identity of the media sources in the collected articles, correlation analyses were run between the number of articles collected for each media source and each media source's political identity rating. Results suggest that more articles were collected from more liberal-leaning media sources than more conservative-leaning media sources, $r(43) = -.31$, $p = .04$ (see Figure 11). To determine if this significant correlation was due to the specific type of event, correlation analyses were run individually for COVID-19, Ebola, and celebrity death events. Significant correlations were found for COVID-19 articles, $r(43) = -.32$, $p = .03$, and celebrity death articles, $r(43) = -.32$, $p = .03$, but not for Ebola articles, $r(43) = -.11$, $p = .48$, such that more articles about COVID-19 and celebrity deaths were collected from liberal-leaning media sources than conservative-leaning media sources with no significant difference in the number of articles collected on Ebola based on the political identity of media sources.

Figure 11

Political Identity of Media Sources in Total Articles Collected



Multi-categorical moderated regressions were run to test the hypotheses that group members have emotion regulation goals of influencing ingroup members' group-based emotions (Hypothesis 1); and that the regulator's self-categorization as a group member (Hypothesis 2a) and the instrumentality of the emotion (Hypothesis 3) will influence their emotion regulation goals. Specifically, I predicted that due to the instrumentality of negative emotions and anxiety in increasing feelings of threat, (a) more liberal media sources would use more negative emotion words and more anxiety words than more conservative media sources in COVID-19 articles, but that this difference would not be significant in celebrity death articles, (b) more liberal media sources would use significantly more negative emotion and anxiety words than more conservative media sources when describing COVID-19, with the opposite pattern for Ebola articles, and (c) more conservative media sources would use more negative emotion words and more anxiety words than more liberal media sources in articles on Ebola, but this difference would not be significant with articles about celebrity deaths.

The independent variable of political identity of media sources was centered, and the moderator of type of event (COVID-19, Ebola, or celebrity deaths) was dummy-coded with COVID-19 as the reference group, then with celebrity deaths as the reference group. The political identity of media sources and type of event were entered on Step 1, and their interactions were entered on Step 2.

Negative Emotion Words

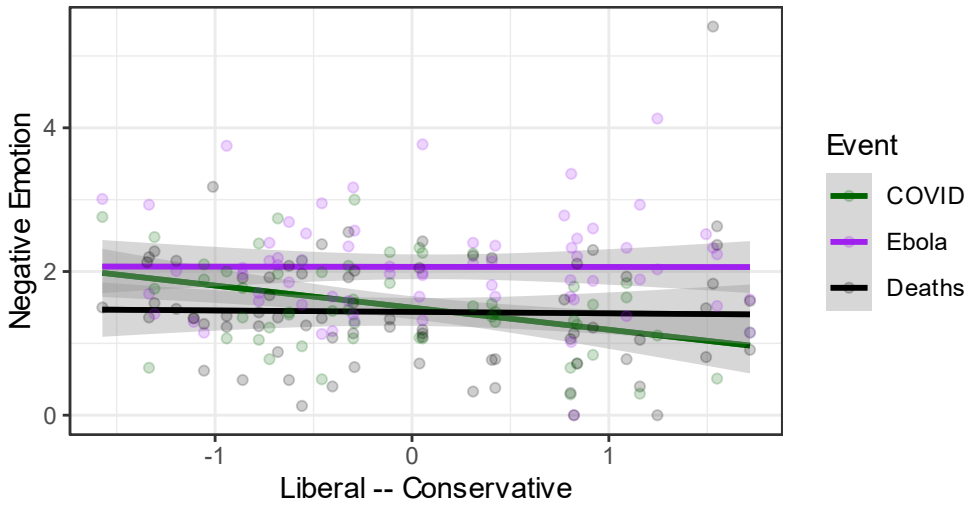
At Step 1, although there was no main effect of political identity of media sources (b = -0.08, $t(197)$ = -1.37, p = .17), there was a significant main effect of type of event on negative emotion words, such that articles on Ebola had a greater percentage of negative

emotion words (M = 2.06, SD = 0.70) than articles on COVID-19 (M = 1.52, SD = 0.63; $t(197) = 4.18$, $p < .001$) and celebrity deaths (M = 1.44, SD = 0.83; $t(197) = 5.15$, $p < .001$). Together, the predictors of political identity of media sources and type of event explained 13.88% of the variance in negative emotion words, $F(3,198) = 10.37$, $p < .001$.

At Step 2, with COVID-19 as the reference group, the interaction terms of Political Identity X Ebola (b = 0.31, $t(197) = 1.93$, $p = .06$) and Political Identity X Celebrity Deaths (b = 0.29, $t(197) = 1.88$, $p = .06$) were entered but not significant. Repeating the analyses using celebrity deaths as the reference group, the interaction term of Political Identity X Ebola was entered but also not significant (b = 0.02, $t(197) = 0.13$, $p = .90$). The interactions explained an additional 2.54% variance in negative emotion words, which was not significant, $F(2,196) = 2.24$, $p = .11$. As shown in Figure 12, there was a strong negative association between political identity and negative emotion words in articles on COVID-19 [simple b = -.31, $t(196) = -2.52$, $p = .01$] but not for articles on Ebola [simple b = .00, $t(196) = -0.02$, $p = .98$] or celebrity deaths [simple b = -.02, $t(196) = -0.22$ $p = .83$]. These null results suggest that contrary to the hypothesis, the link between political identity of media sources and negative emotion words was not moderated by type of event, such that more liberal and more conservative media sources did not differ in their use of negative emotion words when comparing articles on COVID-19, Ebola, or celebrity deaths. However, based on its significant slope, more liberal media sources used more negative emotion words than more conservative media sources.

Figure 12

Political Identity X Type of Event on Negative Emotions Words



Anxiety Words

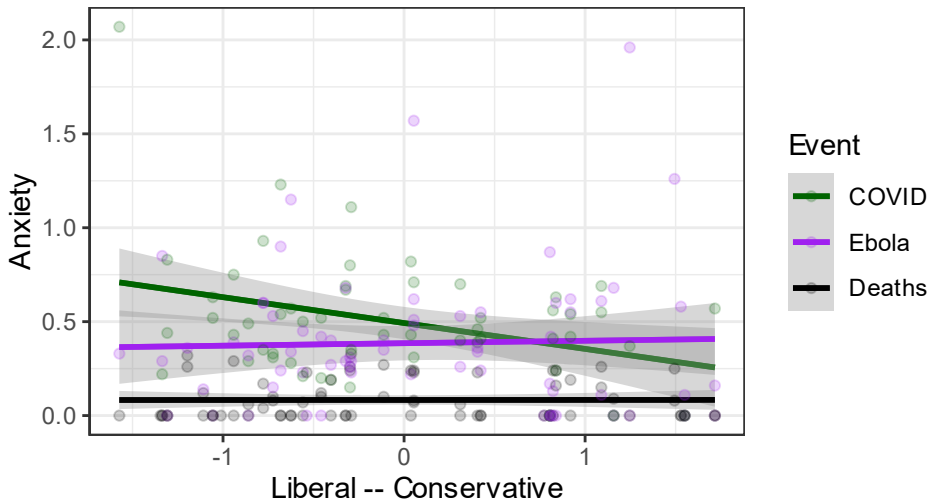
At Step 1, although there was no main effect of political identity of media sources (*b* = -0.03, *t*(197) = -1.20, *p* = .23), there was a significant main effect of type of event on anxiety words, such that articles on COVID-19 (*M* = 0.50, *SD* = 0.33) and Ebola (*M* = 0.39, *SD* = 0.37) both had more anxiety words than articles on celebrity deaths (*M* = 0.08, *SD* = 0.11; COVID-19: *t*(197) = 8.16, *p* < .001, Ebola: *t*(197) = 2.14, *p* = .03). However, there was no difference in the percentage of anxiety words used between articles on COVID-19 and Ebola. Together, the predictors of political identity of media sources and type of event explained 28.45% of the variance in anxiety words, *F*(3,198) = 25.58, *p* < .001.

At Step 2, with COVID-19 as the reference group, the interaction terms of Political Identity X Ebola and Political Identity X Celebrity Deaths were entered. The interaction term of Political Identity X Ebola was statistically significant (*b* = .15, *t*(197) = 2.44, *p* = .02), such that more liberal media sources used more anxiety words than more conservative sources in articles on COVID-19 [*simple* b = -.14, *t*(196) = -2.90, *p* < .001] but there was no significant difference between how more liberal and more conservative media sources used

anxiety words in articles on Ebola [*simple* b = .01, $t(196) = 0.33$, $p = .74$]. The interaction term of Political Identity X Celebrity Deaths was also statistically significant ($b = .14$, $t(197) = 2.32$, $p = .02$). Liberal media sources tended to use more anxiety words than conservative media sources in articles on COVID-19 but there was no difference in articles on celebrity deaths [*simple* b = .001, $t(196) = 0.01$, $p = .99$]. Repeating the analyses with celebrity deaths as the reference group, the interaction term of Political Identity X Ebola was entered and not significant ($b = .01$, $t(197) = 0.24$, $p = .81$), suggesting that there was no significant difference between how more liberal and more conservative media sources used anxiety words in articles on Ebola or celebrity deaths. The interactions explained an additional 2.69% variance in anxiety words, $F(2,196) = 3.51$, $p = .03$. As shown in Figure 13, these results support the hypothesis that the link between political identity of media sources and anxiety words was moderated by type of event.

Figure 13

Political Identity X Type of Event on Anxiety Words



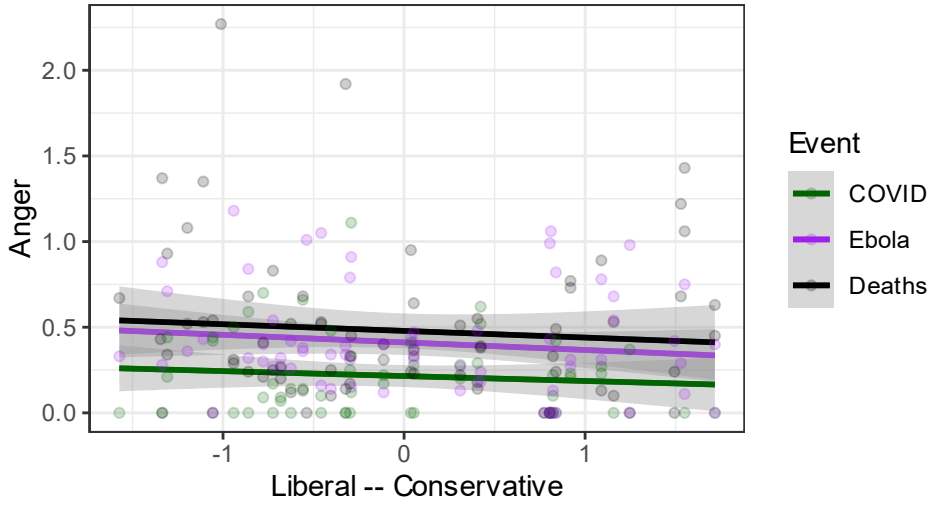
Anger Words

At Step 1, although there was no main effect of political identity of media sources (b = -0.03, t(197) = -1.37, p = .17), there was a significant main effect of type of event on anger words, such that articles on Ebola (M = 0.41, SD = 0.30) and celebrity deaths (M = 0.48, SD = 0.44) both had a greater percentage of anger words than articles on COVID-19 (M = 0.22, SD = 0.24; Ebola: t(197) = 3.14, p = .002, celebrity deaths: t(197) = 4.31, p < .001). However, there was no significant difference in percentage of anger words used between articles on Ebola and celebrity deaths. Together, the predictors of political identity of media sources and type of event explained 9.71% of the variance in anger words, F(3,198) = 6.92, p < .001.

At Step 2, with COVID-19 as the reference group, the interaction terms of Political Identity X Ebola (b = -0.02, t(197) = -0.21, p = .84) and Political Identity X Celebrity Deaths (b = -0.01, t(197) = -0.14, p = .89) were entered but not significant. Repeating the analyses with celebrity deaths as the reference group, the interaction term of Political Identity X Ebola was entered but also not significant (b = -0.01, t(197) = -0.08, p = .94). The interactions explained an additional 0.02% variance in anger words, F(2,196) = 0.02, p = .98. Additionally, the simple slopes of COVID-19 [*simple* b = -0.03, t(196) = -0.50, p = .62], Ebola [*simple* b = -0.04, t(196) = -0.92, p = .36], and celebrity deaths [*simple* b = -0.04, t(196) = -0.89, p = .37] were not significant. As shown in Figure 14, these null results suggest that the link between political identity of media sources and anger words was not moderated by type of event, such that more liberal and more conservative media sources did not differ in their use of anger words in articles on COVID-19, Ebola, or celebrity deaths.

Figure 14

Political Identity X Type of Event on Anger Words



Sadness Words

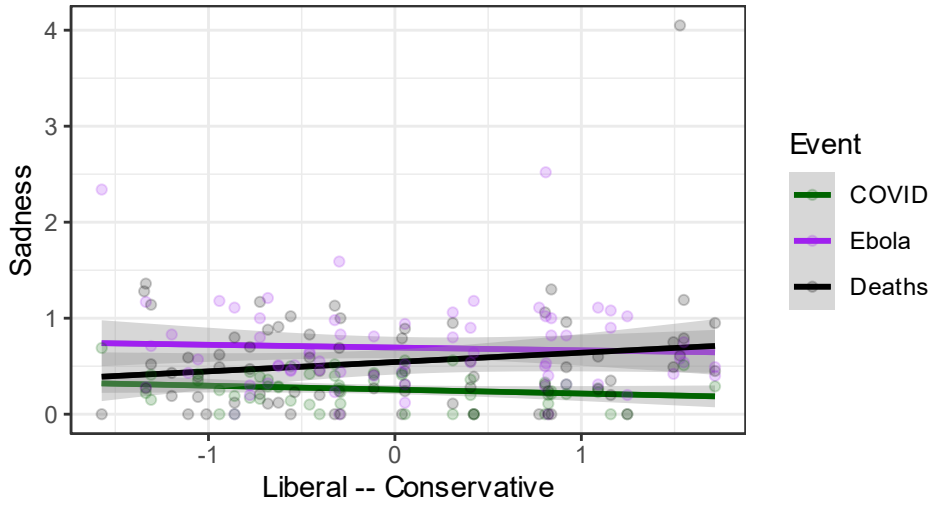
At Step 1, although there was no main effect of political identity of media sources (b = 0.02, $t(197) = .57$, $p = .57$), there was a significant main effect of type of event on sadness words, such that articles on Ebola ($M = 0.69$, $SD = 0.46$) and celebrity deaths ($M = 0.54$, $SD = 0.57$) both had a greater percentage of sadness words than articles on COVID-19 ($M = 0.26$ $SD = 0.17$; Ebola: $t(197) = 5.25$, $p < .001$, celebrity deaths: $t(197) = 3.51$, $p < .001$). Additionally, articles on Ebola tended to use a greater percentage of sadness words than articles on celebrity deaths but this difference was not significant, $t(197) = 1.96$, $p = .05$. Together, the predictors of political identity of media sources and type of event explained 13.04% of the variance in sadness words, $F(3,198) = 9.65$, $p < .001$.

At Step 2, with COVID-19 as the reference group, the interaction terms of Political Identity X Ebola ($b = 0.01$, $t(197) = 0.12$, $p = .90$) and Political Identity X Celebrity Deaths ($b = 0.14$, $t(197) = 1.48$, $p = .14$) were entered but not significant. Repeating the analyses with celebrity deaths as the reference group, the interaction term of Political Identity X

Ebola was entered and also not significant (b = -0.13, t(197) = -1.51, p = .13). Additionally, the simple slopes of COVID-19 [*simple* b = -0.04, t(196) = -0.55, p = .58], Ebola [*simple* b = -0.03, t(196) = -0.47, p = .64], and celebrity deaths [*simple* b = 0.10, t(196) = 1.73, p = .09] were not significant. The interactions explained an additional 1.42% variance in sadness words, F(2,196) = 1.58, p = .21. As shown in Figure 15, these null results suggest that the link between political identity of media sources and sadness words was not moderated by type of event, such that more liberal and more conservative media sources did not differ in their use of sadness words in articles on COVID-19, Ebola, or celebrity deaths.

Figure 15

Political Identity X Type of Event on Sadness Words



Positive Emotion Words

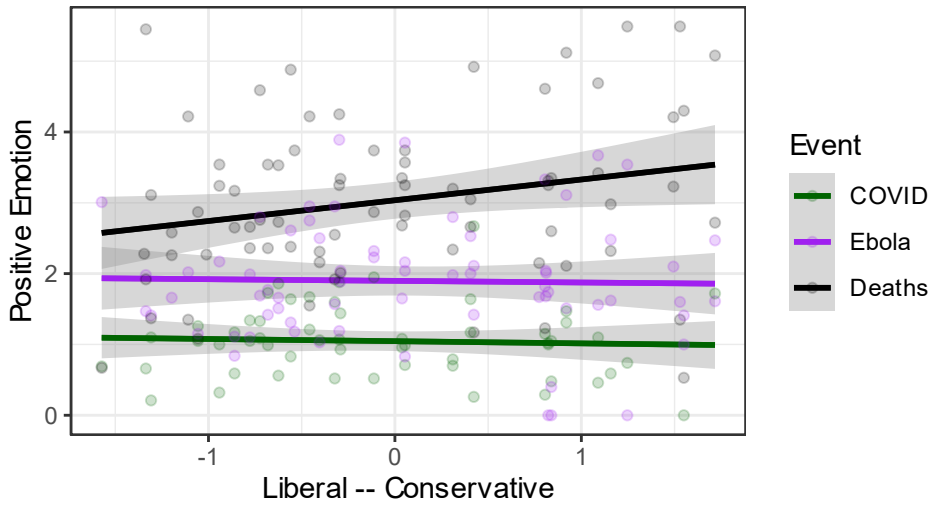
At Step 1, although there was no main effect of political identity of media sources (b = 0.11, t(197) = 1.46, p = .15, there was a significant main effect of type of event on positive emotion words, such that articles on Ebola (M = , SD = 1.15) and celebrity deaths (M = 2.98, SD = 1.17) had a greater percentage of positive emotion words than articles on COVID-19

(M = 1.03, SD = 0.58; Ebola: $t(197) = 5.06$, $p < .001$, celebrity deaths: $t(197) = 12.29$, $p < .001$). Additionally, articles on Ebola had a greater percentage of positive emotion words than articles on celebrity deaths, $t(197) = -7.55$, $p < .001$. Together, the predictors of political identity of media sources and type of event explained 45.12% of the variance in positive emotion words, $F(3,198) = 39.07$, $p < .001$.

At Step 2, with COVID-19 as the reference group, the interaction terms of Political Identity X Ebola ($b = 0.01$, $t(197) = 0.04$, $p = .97$) and Political Identity X Celebrity Deaths ($b = 0.32$, $t(197) = 1.73$, $p = .09$) were entered but not significant. Repeating these analyses with celebrity deaths as the reference group, the interaction term of Political Identity X Ebola was entered but also not significant ($b = -0.32$, $t(197) = -1.89$, $p = .06$). Additionally, the simple slopes of COVID-19 [*simple* b = -0.03, $t(196) = -0.21$, $p = .84$] and Ebola [*simple* b = -0.02, $t(196) = -0.19$, $p = .85$] were not significant, but more conservative media sources used a greater percentage of positive emotion words on articles on celebrity deaths than more liberal media sources [*simple* b = 0.29, $t(196) = 2.60$, $p = .01$]. The interactions explained an additional 1.31% variance in positive emotion words, $F(2,196) = 2.34$, $p = .10$. As shown in Figure 16, these null results suggest that the link between political identity of media sources and positive emotion words was not moderated by type of event, such that more liberal and more conservative media sources did not differ in their use of positive emotion words in articles on COVID-19, Ebola, or celebrity deaths.

Figure 16

Political Identity X Type of Event on Positive Emotion Words



Discussion

Study 2 used the archival data of more conservative and more liberal media sources reporting on different types of events that were relevant and irrelevant to participants' political identity. In doing so, this study tested whether group members try to achieve group goals by regulating the emotions of ingroup members. The results of this study supported Hypothesis 1, that group members attempt to regulate the emotions of ingroup members to achieve group goals, such that the political identity of media sources influenced how they tried to regulate the emotions of their readers (i.e., ingroup emotions). These results also supported Hypothesis 2, that emotions are perceived as instrumental to group goals (or not) based on the group membership of the target, specifically that in the group-relevant event of COVID-19, anxiety was perceived as instrumental to group goals. Additionally, the results supported Hypothesis 3a, that group members attempt to upregulate instrumental emotions and downregulate non-instrumental emotions in ingroup members, since the instrumental emotion of anxiety in the group-relevant event of COVID-19 was upregulated in ingroup members. However, not all the hypotheses on the specific emotions were supported.

First, the results did not support the hypothesis that the link between the political identity of media sources and negative emotion words would be moderated by type of event. However, this may be due to lack of emotion differentiation, as in Study 1. Evaluating discrete negative emotions may be especially important in regulatory contexts since more negative emotion differentiation is associated with more negative emotion regulation (Barrett et al., 2010). By analyzing discrete negative emotions (e.g., anxiety) rather than negative valence, a clearer picture on the ongoing regulatory processes emerged, specifically whether there are differences in how more liberal and more conservative media sources differ in how they try to regulate ingroup emotions. As such, the results on anxiety words provided a more nuanced story.

The results supported the hypothesis that the link between political identity of media sources and anxiety words would be moderated by whether the reported event was relevant or not relevant to their own group membership. However, the specific hypotheses were only partially supported. Specifically, (a) as evident from (or evidenced by) the simple slopes, more liberal media sources used more anxiety words than more conservative media sources in COVID-19 articles with no significant difference in celebrity death articles. Although the interaction effect was trending in the predicted direction, it was not statistically significant, contrary to the hypothesis. This may be due to the celebrity death articles themselves since more articles on this topic were collected from more liberal sources than more conservative sources, so the topic may not be truly apolitical.

Next, (b) more liberal media sources used significantly more anxiety words than more conservative media sources when describing COVID-19, but in the Ebola articles, more conservative media sources did not use significantly more anxiety words than more

liberal media sources. Instead, there was no significant difference in how more liberal and more conservative media sources used anxiety words in Ebola articles. This interaction effect was statistically significant, supporting the hypothesis, but the simple slope of Ebola as nonsignificant was contrary to the hypothesis, in which a negative simple slope was predicted so that more conservative media sources would use more anxiety words than more liberal sources. However, since Ebola took place in 2014 rather than in 2020 as with the COVID-19 pandemic, the Ebola event may have been less politicized since political polarization has worsened over the years (Iyengar et al., 2019).

Last, (c) more conservative media sources did not use significantly more anxiety words than more liberal media sources in articles on Ebola or celebrity deaths, contrary to the hypothesis. Although a nonsignificant effect of celebrity deaths articles was predicted, no significant negative simple slope for Ebola articles was found, such that more conservative and more liberal media sources did not significantly differ in how they used anxiety words when describing the Ebola events.

Analyses were also run for other emotion words, specifically anger, sadness, and positive emotion words. No significant effects were expected for these words since the events of COVID-19 and Ebola incurred feelings of threat (Shepherd et al., 2020; Goodwyn, 2014; Sell et al., 2017), which maps onto anxiety words, which have a negative valence. Whereas the political group events in this study provoked anxiety, different political group events or topics (e.g., abortion, police brutality, gun safety, climate change) may trigger the regulation of different group emotions.

Limitations

Interpretation of these results may be ambiguous due to some study limitations, such as that of a small sample size. Since this study collected articles on specific events, if a media source did not report on the specific event, fewer articles were collected for that particular media source. For instance, it may be possible that a media source reported about COVID-19 but not about the specific event of the first death in the U.S. Future studies should collect more or all the articles on the topic (e.g., COVID-19, Ebola, celebrity deaths) rather than focusing on one event of the topic.

Additionally, there was a difference in the number of articles collected based on the political identity of media sources, that might have affected any investigation of the frequency of anxiety compared to other emotion words. More articles were collected from more liberal than from more conservative media sources on the events of COVID-19 and celebrity deaths. Since media sources do not cover all events that may occur, data collected from media sources may experience selection bias, in which there are factors that influence judgment of whether an event is newsworthy (Earl et al., 2004).

Specifically, since COVID-19 was more threatening to liberals than conservatives (Shepherd et al., 2020), the fewer articles from the more conservative media sources may have been due to more conservative media sources wanting to downplay the events, believing the events to be not worth reporting, and/or assuming that its readers did not care about the events. Lack of event coverage may also indicate the non-importance of an event, hence its non-threatening status. It is also likely that media sources reported different events based on their political identity. For instance, perhaps more liberal media sources focused on the events here, such as the first case or first death, whereas more conservative media

sources may have on the consequences of these events, such as the effects of a disease on the economy. In this way, considering the topic of these emotion words may be important.

However, what was unexpected was that there was also a skew in the number of articles on celebrity deaths based on political identity, such that more articles were collected from more liberal than more conservative media sources. Although we intended these as control articles, these differences may in fact also reflect the ingroup nature of the content appearing in these outlets. The two events for this topic were the deaths of Kobe Bryant and Alex Trebek. Bryant was part of the National Basketball Association, whose viewers tend to lean left (Democrats: 42%, Independents: 31%, Republicans: 26%; Silverman, 2020). Additionally, Bryant played for the Los Angeles Lakers, and Los Angeles County leans left as well (Democrats: 52.45%, Republicans: 17.15%, Others: 4.17%; No preference: 24.23%). Conversely, Trebek was a talk show host for Jeopardy!, whose viewers are more likely than the average American to have a higher education and vote Democrat than Republican (Hiebert, 2016). Thus, more conservative media sources may be less interested in reporting on Bryant's or Trebek's deaths than more liberal media sources.

There are also limitations to analyzing the content of the articles using LIWC. Since the LIWC 2022 program analyzes the percentage of words from the targeted category out of the total word count (Boyd et al., 2022), it ignores the context of the word, such as if the emotion word is paired with a negative word (e.g., "no longer worried"). Similarly, LIWC is unable to consider the severity of the word. For example, using the word anxious is much more severe than using the word concerned, but both words are counted similarly. Rather, LIWC assumes that the number of words in a category is meaningful. Human speech is complex, and if an emotion is conveyed through multiple nuanced words or through tone,

LIWC is unable to pick up on the emotion. Future studies can consider more complex text analysis programs or use humans to read the articles and report on the emotions being conveyed in the articles.

This study also only focused on the political events of COVID-19 and Ebola, and the non-political event of celebrity deaths. Although Ebola was also politically polarizing in that it was more threatening to conservatives than liberals (Goodwyn, 2014; Sell et al., 2017), the event may not have been as politically polarizing as COVID-19, especially since liberals and conservatives in the U.S. have increasingly become more polarized over the years (Iyengar et al., 2019). Additionally, since the COVID-19 pandemic took place over a couple years, specific topics on COVID-19 may be more polarizing than others or spur different emotions (e.g., mask wearing, closure of schools, social distancing, vaccinations). This study focused on two events before COVID-19 became a pandemic, so other politically polarizing events that took place during the COVID-19 pandemic may also be worth investigating.

Conclusion

This study was an initial test of how the regulator's self-categorization as a group member in group-relevant situations influences how they regulate (or do not regulate) their target's group emotions, based on the instrumentality of the emotion. The political identity of media sources influenced the percentage of anxiety words used to describe the group-relevant events of COVID-19 and Ebola, consistent with the idea that anxiety was instrumental in increasing feelings of threat, and thus upregulating anxiety met some group's goals.

However, Study 2 examined only the regulator and their goals. Since this study used archival data to investigate the emotion words used as media sources attempt to regulate

their readers' emotions, this study focused solely on the regulator and the regulator's efforts in influencing the emotions of their ingroup. Although these factors of target-categorization and instrumentality of emotion may influence the regulator's emotion regulation goals, the effectiveness of the regulator's goals in actually influencing the target's emotions has yet to be examined. Understanding how the target perceives and is influenced by the regulator's goals can give insight into the success of the regulator's emotion regulation processes, as evident by the target's emotions, beyond the regulator's emotion regulation intentions.

Study 3

Study 3 extended Study 2 by examining whether group emotions actually change when group members try to regulate the emotions of ingroup and outgroup members in group-relevant (vs. group-irrelevant) situations. This was a test of Hypothesis 4, that group members' emotion regulation attempts will result in the experience of greater upregulated emotions in the target, particularly in ingroup rather than outgroup members. Study 2 suggested that the political identity of media sources influenced how they tried to regulate the emotions of their readers (i.e., ingroup emotions). The next logical step was to investigate the extent to which such media sources were successfully able to influence the emotions of readers exposed to such attempts. Thus, Study 3 investigated whether or not articles on COVID-19 and Ebola from more liberal and more conservative media sources influenced the emotions of American readers whose group membership either matched or mismatched the political identity of the media source. Specifically, Prolific workers in the U.S., whose political group membership ranged across the conservative-liberal spectrum, read various articles on COVID-19 and Ebola from more liberal and more conservative sources, and reported the emotions that they experienced from doing so.

Study 2 found that more liberal rather than more conservative media sources used more anxiety words in the group-relevant event of COVID-19, but did not differ in the number of anxiety words used in the group-irrelevant event of Ebola. I therefore hypothesized that news articles on COVID-19 from more liberal rather than more conservative sources would elicit significantly more anxiety, particularly for ingroup rather than outgroup members, whereas news articles on Ebola from more liberal and more conservative sources would induce similar levels of anxiety.

Methods

Design

Study 3 was a 2 political identity of media sources (liberal, conservative) x 2 target's group membership (ingroup, outgroup) x 2 type of event (COVID-19, Ebola) mixed-subjects study. The predictor variable of political identity rating of the media sources as either liberal or conservative, as well as the predictor variable of the target's group membership as an ingroup or outgroup member to the regulator were between-subjects. The predictor of type of event was within-subjects, in which the group-relevant event of COVID-19 was a political event about a deadly disease in 2020, and the group-irrelevant event of Ebola was a political event about a deadly disease in 2014. Dependent variables were measured as the extent to which anxiety was experienced and the extent they think the author of the article is trying to convey anxiety.

Participants

A total of 604 participants were recruited through Prolific. An a priori power analysis was conducted using G*Power 3.1 (Faul et al., 2009), with an alpha of .05 and a power of .80. Since participants read a text to elicit emotions, an effect size of 0.41 was used

(Lench et al., 2011). Since participants would each be evaluating two out of 12 news articles (to be discussed in the Procedure and Materials section), the power analysis suggested using 492 participants, so I oversampled to account for the online nature of the study. Participants were required to be in the U.S. and were prescreened through Prolific to either be politically conservative, moderate, or liberal to ensure that they were indeed members of these political groups. Individuals who identified themselves as "Other" or "N/A" for their political orientation were not recruited. Three participants were excluded for failing two out of three attention checks, but 14 other participants who failed only one of the three attention checks were included. Participants were compensated $3.05 for responding to the 15-minute survey.

Then, to create an ingroup-outgroup paradigm with the more liberal or more conservative media sources, participants needed to be more liberal or more conservative as well. Participants were asked about their political orientation on a scale of 1 (*Very conservative*) to 7 (*Very liberal*), where higher scores indicated that the participant was more liberal, whereas lower scores indicated that the participant was more conservative. Participants without a response to this question ($n = 1$) and participants who responded with a Likert scale rating of 4 (*neither liberal nor conservative*; $n = 95$) were excluded.

The final sample size was 505. Participants were mostly white, male, born in the U.S., well-educated, and leaned slightly politically liberal. (See Table 5 for all demographic information.)

Table 5

Demographic Characteristics of the Sample

Variables	*M*	*SD*	Med	Min	Max	Range
Age (*n* = 505)	41.44	14.67	38	18	81	63
Years in the U.S. (*n* = 505)	40.72	14.89	37	12	81	69
Political Orientation (*n* = 505; 1 (*Conservative*) – 7 (*Liberal*)	5.08	1.98	6	1	7	6
	n		*%*			
Gender (*n* = 505)						
Male	285		56.44			
Female	212		41.98			
Non-binary, genderqueer, or non-conforming	8		1.58			
Ethnicity (*n* = 505)						
American Indian/Alaskan Native	2		0.40			
Asian	28		5.54			
Black/African American	26		5.15			
Latina/o/x	19		3.76			
Middle Eastern/North African	2		0.40			
White	395		78.22			
Mixed	33		6.53			
Educational Level (*n* = 503)						
Did not finish high school	4		0.80			
High school/GED	145		28.83			
Two-year college degree	73		14.51			
Four-year college degree	210		41.75			
Graduate degree	71		14.12			

Procedure, Materials, and Measures

Participants were recruited online using Prolific to complete a 15-minute survey. They were told that the purpose of the study was to understand how news articles make people feel. Participants were told that they would be reading two news articles, that they should read the articles carefully, and that they would not be able to go back to the articles after continuing the survey. Participants each read one group-relevant article (i.e., article on the first infected death from COVID-19 in the U.S.) and one group-irrelevant article (i.e., article on the first infected death from Ebola in the U.S.), from the same either liberal or conservative source. Participants were randomly assigned to a media source, and the order in which the group-relevant and group-irrelevant articles were shown to participants was counterbalanced.

Selection of News Articles. The media sources used in Study 2 were assessed to identify sources that published both an article on the first infected COVID-19 death in the U.S. and an article on the first infected Ebola death in the U.S. Based on the results of Study 2, the event of COVID-19 was deemed group-relevant, whereas the event of Ebola was deemed group-irrelevant. Using the ratings of political group identity from Study 2, the three most liberal media sources (from most liberal to less liberal: Daily Kos, Slate, and Daily Beast) and the three most conservative media sources (from most conservative to less conservative: Breitbart, The Blaze, and Fox News) that published articles on both of these topics were identified (see Table 4 for media source ratings). Two articles (one on COVID-19, one on Ebola) from each of the three most liberal and the three most conservative media sources were selected. This yielded three group-relevant and three group-irrelevant articles from three liberal media sources, and three group-relevant and three group-irrelevant articles

from three conservative media sources, for a total of 12 news articles from six media sources.

Dependent Variables. After reading each of the two articles, participants responded to the following questions.

Experienced Anxiety. To evaluate the anxiety that participants experienced (i.e., the target's emotions) after reading the assigned articles, participants were asked the extent to which they feel each of the following emotions: anxious and fearful. They were asked, "Having read the article, to what extent do you feel: [emotion]?", on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A lot*). Higher scores indicated experiencing the emotion more, reflecting the extent to which reading the article influenced their emotions. Next, composite anxiety (α = .87) was calculated based on the experienced emotions of anxious (M = 2.37, SD = 1.18) and fearful (M = 2.20, SD = 1.18), $r(1008) = .76$, $p < .001$

Attempted Regulation Emotions. To determine the anxiety that participants thought the author of each article was trying to induce, participants were asked to what extent they think the author of the article is trying to convey the following emotions: anxious and fearful. The purpose of this variable was to determine the target's awareness of the regulator's emotion regulation goals and whether participants could determine the group members' group membership (i.e., whether they were a more liberal or more conservative media source). Participants responded using a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A lot*). Higher scores indicated that the target thought that the author was trying to induce that particular emotion more. Next, attempted regulation of anxiety composite (α = .88) was calculated based on the attempted regulation emotions of feeling anxious (M = 2.47, SD = 1.19) and fearful (M = 2.39, SD = 1.18), $r(1008) = .78$, $p < .001$

Author's Political Orientation. Next, participants were asked what they thought the political orientation of the author was on a scale of 1 (*Very conservative*) to 7 (*Very liberal*). Participants could also select an eighth option in which they "cannot tell the author's political orientation." Higher scores indicate believing the author to be more liberal, whereas lower scores indicate believing the author to be more conservative. Participants who selected that they could not tell the author's political orientation were excluded from these analyses.

Target's Group Membership as Moderator. As the emotion regulation target, participants were also asked about their own political orientation on a scale of 1 (*Very conservative*) to 7 (*Very liberal*), where higher scores indicate that the participant was more liberal, whereas lower scores indicate that the participant was more conservative. These values of the target's group membership were matched with whether the media source was more liberal or more conservative. For each news article that the participants were reading, if participants indicated that they identified as more liberal (i.e., Likert scale choices of 5, 6, or 7; $n = 370$), they were coded as ingroup members when the media sources were more liberal and coded as outgroup members when the media sources were more conservative. However, for each news article that the participants were reading, if participants indicated that they identified as more conservative (i.e., Likert scale choices of 1, 2, or 3; $n = 135$), they were coded as ingroup members when the media sources were more conservative and coded as outgroup members when the media sources were more liberal. For each news article that the participants were reading, if participants indicated that they were neither liberal nor conservative (i.e., Likert scale choice of 4; $n = 95$), they were coded as neither an ingroup or outgroup member.

Results

Three-way mixed ANOVAs were conducted with political identity of media sources (liberal vs. conservative) and target's group membership (ingroup vs. outgroup) as a between-subjects variable and type of event (COVID-19 vs. Ebola) as a within-subjects variable. Since Study 2 demonstrated that the instrumental emotion of anxiety in the group-relevant event of COVID-19 was upregulated by group members, the dependent variables were the experienced anxiety composite (i.e., the extent to which participants reported feeling anxiety) and the attempted regulation of anxiety composite (i.e., the amount of anxiety that participants thought the authors were attempting to convey).

Experienced Anxiety. A three-way mixed ANOVA was conducted to examine the role of the political identity of media sources (liberal vs. conservative), the target's group membership (ingroup vs. outgroup), and type of event (COVID-19 vs. Ebola) on the experienced anxiety composite. Results from Study 2 indicated that anxiety was instrumental to more liberal media sources for the group-relevant event of COVID-19 but not the group-irrelevant event of Ebola. Based on this assumption, if Hypothesis 4 is to be supported, group members' emotion regulation attempts will result in the experience of greater upregulated emotions in ingroup rather than outgroup members. This means that after reading the news article on the group-relevant event of COVID-19 from the more liberal media source, ingroup members should experience significantly more anxiety than outgroup members, whereas after reading the news article on the group-relevant event of COVID-19 from the more conservative media source, ingroup members should experience significantly less anxiety than outgroup members. However, since the event of Ebola was group-irrelevant, there should not be a statistically significant difference in anxiety between

ingroup and outgroup members regardless of whether the media source was liberal or conservative.

Table 6

Three-Way Mixed ANOVA Results with Experienced Anxiety Composite as the Outcome Variable

Predictor	df_{Num}	df_{Den}	SS_{Num}	SS_{Den}	F	p	η^2_p
Political Identity	1	501	1.06	871.95	0.61	.44	.001
Group Membership	1	501	0.57	871.95	0.33	.57	.001
Type of Event	1	501	48.58	289.21	84.15	<.001	.14
Political Identity x Group	1	501	6.75	871.95	3.88	.049	.01
Political Identity x Event	1	501	3.33	289.21	5.76	.02	.01
Group x Event	1	501	1.30	289.21	2.25	.13	.004
Political Identity x Group x Event	1	501	6.96	289.21	12.05	.001	.02

Note. df_{Num} indicates degrees of freedom numerator. df_{Den} indicates degrees of freedom denominator. SS_{Num} indicates sum of squares numerator. SS_{Den} indicates sum of squares denominator. η^2_p indicates partial eta-squared.

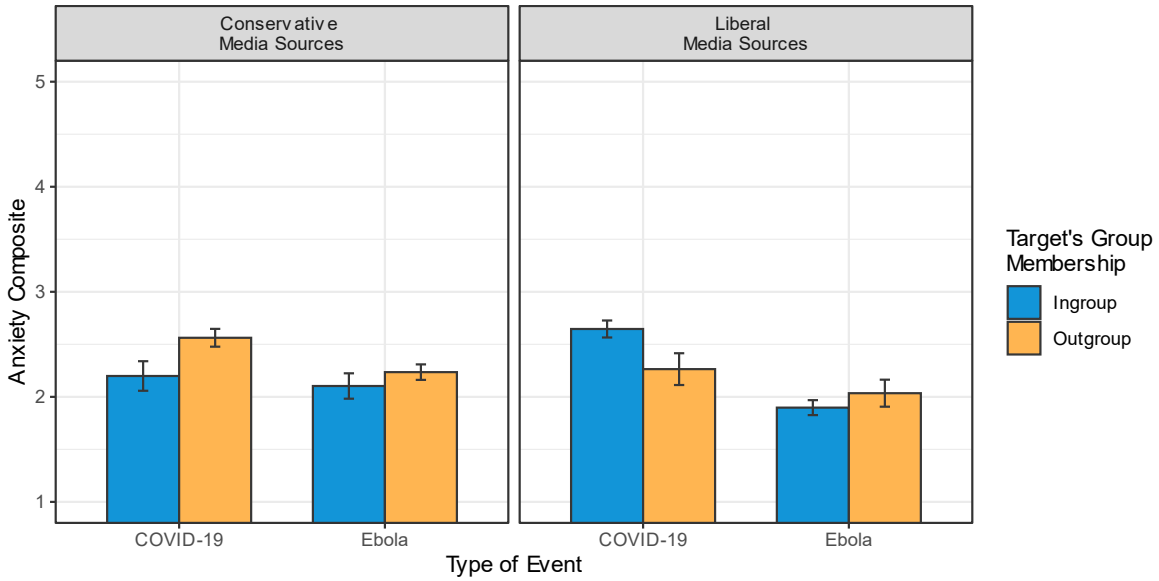
The three-way interaction was statistically significant (see Table 6; see Figure 17). Thus, a Tukey's HSD post-hoc test was conducted to investigate whether the predicted pairwise comparisons were statistically significant. First, after reading news articles on COVID-19, liberal-leaning participants experienced more anxiety from their ingroup of more liberal media sources (M = 2.65, SD = 1.10) than conservative-leaning participants did from their ingroup of more conservative media sources (M = 2.20, SD = 1.12), although the difference was trending but not statistically significant, p = .09. However, liberal-leaning participants were not significantly more likely to experience anxiety from their outgroup of

more conservative media sources (M = 2.56, SD = 1.15) than conservative-leaning participants were from their outgroup of more liberal media sources (M = 2.26, SD = 1.28), p = .49. After reading news articles on Ebola, there was no statistically significant difference between how liberal-leaning participants (Ingroup: M = 1.90, SD = 0.97; Outgroup: M = 2.04, SD = 1.09) and conservative-leaning participants (Ingroup: M = 2.10, SD = 0.96; Outgroup: M = 2.24, SD = 1.00) experienced anxiety from their respective ingroup members, p = .89, or respective outgroup members, p = .88.

Thus, based on the Study 2 results that anxiety was instrumental to more liberal but not more conservative media sources on the group-relevant event of COVID-19 and not the group-irrelevant event of Ebola, Hypothesis 4 was only partially supported, such that group members' emotion regulation attempts resulted in the experience of greater upregulated emotions, but this did not vary due to the target's group membership. However, the pattern of means followed the predicted pattern, and the pairwise comparisons suggested that ingroup members were nonsignificantly more likely to experience anxiety according to the group goals. Specifically, since anxiety was instrumental to the group-relevant event of COVID-19, liberal-leaning ingroup members experienced nonsignificantly more anxiety after reading news articles from more liberal media sources than conservative-leaning ingroup members did after reading news articles from more conservative media sources. However, there were no significant differences in anxiety with either liberal-leaning or conservative-leaning outgroup members after reading news articles from more liberal or more conservative media sources. This predicted three-way interaction subsumed other significant main effects and interactions.

Figure 17

Three-Way Interaction of Political Identity of Media Sources, Target's Group Membership, and Type of Event on the Experienced Anxiety Composite



There was not a significant main effect of the political identity of the media sources on the experienced anxiety composite, demonstrating that participants did not experience significantly different anxiety whether the news article was from more liberal or more conservative media sources. There was also not a significant main effect of the target's group membership on the experienced anxiety composite, such that whether the target was an ingroup or outgroup member did not significantly affect the target's levels of anxiety. However, there was a main effect of type of event on the experienced anxiety composite, indicating that participants experienced greater levels of anxiety after reading the COVID-19 news articles ($M = 2.50$, $SD = 1.16$) rather than the Ebola news articles ($M = 2.07$, $SD = 1.01$).

There was a significant two-way interaction between the political identity of the media sources and the target's group membership on the experienced anxiety composite, but a Tukey's post-hoc test revealed that none of the pairwise comparisons were statistically

significant. Although results suggest that ingroup and outgroup members experienced similar levels of anxiety after reading articles from more liberal or more conservative media sources, this effect was subsumed by the three-way interaction.

There was also a significant two-way interaction between the political identity of the media sources and the type of event on the experienced anxiety composite. A Tukey's HSD post-hoc test indicated that when the media sources were more liberal, participants experienced greater levels of anxiety after reading the news article on COVID-19 ($M = 2.54$, $SD = 1.17$) rather than Ebola ($M = 1.94$, $SD = 1.00$), $p < .001$. Additionally, when the media sources were more conservative, although participants also experienced greater levels of anxiety after reading the news article on COVID-19 ($M = 2.47$, $SD = 1.15$) than Ebola ($M = 2.20$, $SD = 0.99$), it was to a lesser extent, $p = .04$.

Last, the two-way interaction between the target's group membership and type of event on the experienced anxiety composite was not statistically significant, indicating that participants experienced similar levels of anxiety whether they were an ingroup or outgroup member after reading the news articles on COVID-19 and Ebola.

Attempted Regulation of Anxiety. A three-way mixed ANOVA was conducted to examine the role of the political identity of media sources (liberal vs. conservative), the target's group membership (ingroup vs. outgroup), and type of event (COVID-19 vs. Ebola) on the attempted regulation of anxiety composite (see Table 7; see Figure 18). The three-way interaction term between political identity of media sources, target's group membership, and type of event on the attempted regulation of anxiety composite was not statistically significant. After reading news articles from more liberal or more conservative media sources, ingroup and outgroup members did not think that the authors were

attempting to convey significantly different anxiety based on whether the article was about COVID-19 or Ebola.

Table 7

Three-Way Mixed ANOVA Results with Attempted Regulation of Anxiety Composite as the Outcome Variable

Predictor	df_{Num}	df_{Den}	SS_{Num}	SS_{Den}	F	p	η^2_p
Political Identity	1	501	2.51	900.27	1.40	.24	.003
Group Membership	1	501	0.53	900.27	0.30	.59	.001
Type of Event	1	501	42.63	282.23	75.67	<.001	.131
Political Identity x Group	1	501	17.19	900.27	9.57	.002	.02
Political Identity x Event	1	501	12.07	282.23	21.42	<.001	.04
Group x Event	1	501	0.17	282.23	0.31	.58	.001
Political Identity x Group x Event	1	501	0.35	282.23	0.62	.43	.001

Note. df_{Num} indicates degrees of freedom numerator. df_{Den} indicates degrees of freedom denominator. SS_{Num} indicates sum of squares numerator. SS_{Den} indicates sum of squares denominator. η^2_p indicates partial eta-squared.

However, there was a significant main effect of type of event on the attempted regulation of anxiety composite. After reading the COVID-19 articles (M = 2.64, SD = 1.15), participants thought the authors were trying to convey more anxiety, in comparison to after reading the Ebola articles (M = 2.23, SD = 1.05). However, there was no significant main effect of target's group membership on the attempted regulation of anxiety composite, suggesting that ingroup and outgroup members believed the authors to be conveying similar levels of anxiety. There also was not a significant main effect of political identity of media sources on the attempted regulation of anxiety composite, indicating that participants

believed the authors of more liberal and more conservative media sources to be conveying similar levels of anxiety.

The two-way interaction between the political identity of media sources and the target's group membership on the attempted regulation of anxiety composite was statistically significant. To investigate this significant interaction, I conducted a Tukey's HSD post-hoc test, but the pairwise comparisons suggested that after reading news articles from more conservative media sources, more liberal outgroup members (M = 2.32, SD = 1.06) were not more likely than more conservative ingroup members (M = 2.58, SD = 1.05) to think that authors from more conservative media sources were trying to convey significantly different anxiety, p = .25. After reading news articles from more liberal media sources, more conservative outgroup members (M = 2.72, SD = 1.18) were more likely than more liberal ingroup members (M = 2.38, SD = 1.14) to think these authors were trying to convey more anxiety, but this was only trending and not statistically significant, p = .06.

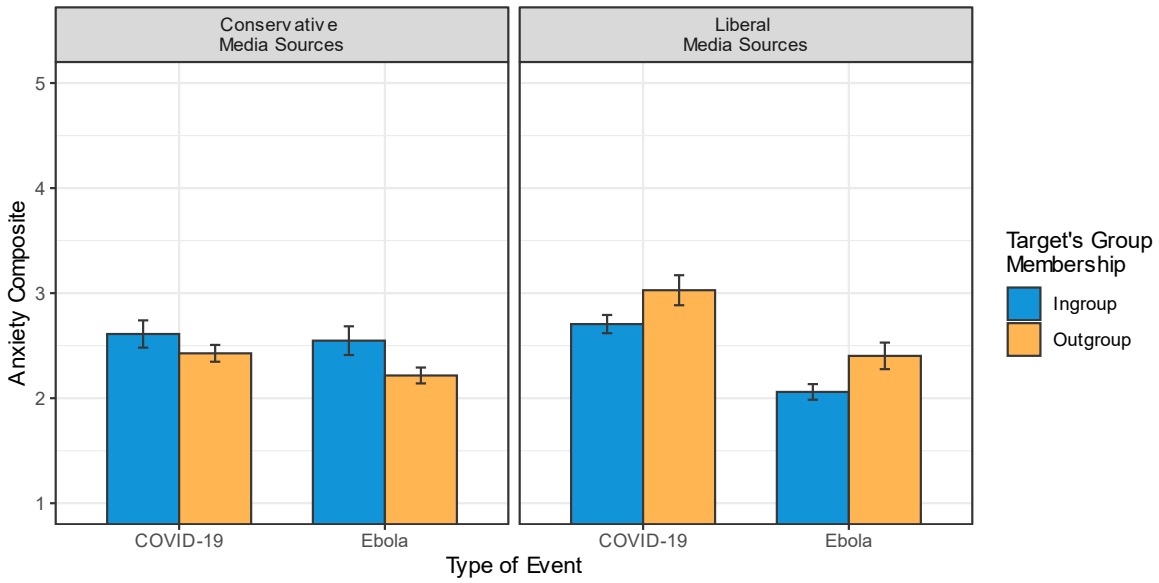
Next, the two-way interaction term between political identity of media sources and type of event on the attempted regulation of anxiety composite was statistically significant. A Tukey's post-hoc test was conducted to investigate which pairwise comparisons were statistically significant. Results indicated that for COVID-19 articles, participants reported significantly more attempted regulation of anxiety after reading news articles from liberal (M = 2.80, SD = 1.20) rather than conservative (M = 2.47, SD = 1.07) media sources, p = .009. However, for Ebola articles, participants did not report significantly different attempted regulation of anxiety after reading news articles from conservative (M = 2.30, SD = 1.05) and liberal (M = 2.16, SD = 1.04) media sources, p = .51. After reading the news article on COVID-19, participants thought the authors from liberal media sources were

trying to convey more anxiety than authors from conservative media sources, but after reading the news article on Ebola, participants did not think that authors from conservative or liberal media sources were attempting to convey significantly different anxiety.

Last, the two-way interaction term between target's group membership and type of event on the attempted regulation of anxiety composite was not statistically significant. Across more liberal and more conservative media sources, ingroup and outgroup members did not think that authors were attempting to convey significantly different anxiety from COVID-19 or Ebola articles.

Figure 18

Non-Significant Three-Way Interaction of Political Identity of Media Sources, Target's Group Membership, and Type of Event on the Attempted Regulation of Anxiety Composite



Author's Political Orientation

When participants were asked about the political orientation of the author of the news articles, participants had low accuracy in determining the actual political orientation of the author (i.e., the political identity of the media source). Of the 1202 responses on this

item, participants left the question blank or chose "could not tell the author's political orientation" for 382 (31.78%) of the news articles, "political orientation of the author was neither conservative nor liberal" for 380 (31.61%) of the news articles, and 440 indicated that the author was leaning either more conservative or more liberal. Of the remaining articles where participants indicated that the author was leaning either more conservative or more liberal, participants were correct for 223 (50.68%) of the news articles and incorrect for 217 (49.32%) of the news articles. In total, participants were either unable to indicate the author's political orientation or indicated the author's political orientation incorrectly for 81.45% of the news articles.

An independent-samples *t*-test was run to determine whether participants' perceptions of the political orientation of the author differed by the liberal or conservative identity of the media source, excluding responses in which participants indicated that they could not tell the author's political orientation. Results demonstrated no difference in participants' perceptions of the political orientation of the author by whether the media source was liberal ($M = 4.12$, $SD = 1.12$) or conservative ($M = 4.09$, $SD = 1.19$), $t(818) = 0.33$, $p = .74$. This suggests that participants were not able to accurately determine the author's political orientation significantly better than by chance. As the target of the regulator's emotion regulation goals, participants were not accurate about the regulator's group goals.

Additionally, participants' perceptions of the media sources as either ingroup or outgroup members was examined, by comparing participants' political orientation to the participants' perceptions of the author's political orientation (excluding participants who were neither more liberal or more conservative). Participants perceived the media sources to

be outgroup members for 15.47% (n = 186) of the news articles, ingroup members for 17.47% (n = 210) of the news articles, and either left the question blank, were unable to tell the author's political orientation, or selected neither liberal nor conservative (n = 806; 67.05%).

Discussion

Study 3 investigated whether the regulator's emotion regulation attempts resulted in the experience of greater upregulated emotions in ingroup rather than outgroup members (Hypothesis 4). Results from Study 2 indicated that more liberal rather than more conservative media sources were attempting to upregulate the instrumental emotion of anxiety on the group-relevant event of COVID-19 but not the group-irrelevant event of Ebola. Thus, Study 3 examined the extent to which these emotion regulation attempts effectively upregulated the target's instrumental emotion of anxiety, and whether this occurred differently for ingroup compared to outgroup members).

Specifically, I predicted that after reading the news article on the group-relevant event of COVID-19 from the more liberal media source, ingroup members would experience significantly more anxiety than outgroup members, whereas after reading the news article on the group-relevant event of COVID-19 from the more conservative media source, ingroup members would experience significantly less anxiety than outgroup members. Although the predicted three-way interaction was statistically significant and the patterns of means were in the predicted direction, the pairwise comparisons were not statistically significant. The pattern suggested that both ingroup and outgroup members experienced more anxiety after reading the news article on COVID-19 from more liberal than more conservative media sources.

Additionally, due to Ebola being a group-irrelevant event, I predicted that there would not be significantly different emotions experienced between ingroup and outgroup members from more liberal or more conservative media sources, which was supported by the results. In contrast to Hypothesis 4, the predicted pairwise comparisons of the three-way interaction were not statistically significant despite being in the predicted direction. After reading news articles on COVID-19 or Ebola from either more liberal or more conservative media sources, ingroup and outgroup members did not experience significantly different anxiety, nor did they think that the authors were attempting to convey significantly different anxiety.

As such, Hypothesis 4 was partially supported, in that group members' emotion regulation attempts resulted in the experience of greater upregulated emotions, but this did not vary due to the target's group membership. Additionally, these results demonstrate that group members can influence the target's emotions even when the target accurately perceives the group members' emotion regulation goals (e.g., when the targets perceived that the regulator was upregulating anxiety). That both ingroup and outgroup members were unable to identify the regulator's group membership (and thus, group goals) may have resulted in the upregulation of anxiety in both ingroup and outgroup members rather than only ingroup members. Ultimately, the targets adopted the upregulated anxiety that they believed the authors were trying to convey, regardless of group membership.

Group members' successful emotion regulation attempts with both ingroup and outgroup members may have occurred since participants were unaware of the political identity of the media sources. An analysis of participants' perceptions of the political orientation of the author of the news articles had low accuracy, and participants were unable

to correctly determine whether the media sources were more liberal or more conservative for 81.45% of the news articles. This suggests that ingroup and outgroup members were unable to discern the regulator's group membership (and consequently, group goals) with only the emotion regulation goals being conveyed to them (i.e., the news articles regulating their emotions). Instead, future directions should examine how these emotions change when the emotion regulation goals and the regulator's group membership are both known, and if the target can accurately identify the regulator's group goals in alignment with the regulator's emotion regulation goals.

Overall, these results partially supported Hypothesis 4, that group members' emotion regulation attempts will result in the experience of greater upregulated emotions in ingroup rather than outgroup members. Although group members' emotion regulation attempts resulted in the experience of greater upregulated emotions in the target, such that participants experienced more anxiety from more liberal than more conservative media sources after reading news articles on COVID-19, these experiences of anxiety did not differ by their group membership.

These results also investigated the target's thoughts of the group members' emotion regulation attempts (i.e., the target's thoughts on the author's attempts to convey emotions). The target's thoughts of the group members' emotion regulation attempts aligned with the results of target's experienced emotions of increased anxiety after reading a news article on COVID-19 from more liberal media sources than from more conservative media sources. This suggests an awareness of group members' emotion regulation attempts but not of their group membership and subsequently, group goals. Although neither ingroup nor outgroup members targets could not accurately identify the group membership of the emotion

regulation attempts, those attempts were successful since both ingroup and outgroup members experienced more anxiety.

Netzer et al. (2020) found that group members' attempted regulation of outgroup members can lead to unintended outcomes. This study furthers that finding by suggesting that group members' attempted regulation can affect both ingroup and outgroup members. Further research should investigate the circumstances in which the emotion regulation goals of the regulator and target are the same or different, and when these regulation attempts are successful or unsuccessful. Particularly in the group setting where the target of the regulator's emotion regulation goals can be an ingroup or outgroup member, the emotion regulation goals of the regulator and the target may often be misaligned.

The current literature on interpersonal emotion regulation tends to focus on the regulator, such as the emotions the regulator expects to experience themselves or the emotions the regulator expects their partner to experience (e.g., Jitaru & Turliuc, 2022). However, this study examines the result of the regulator's intentions by investigating the actual emotions of the target, as well as the target's perceptions of the regulator's emotion regulation attempts. Thus, this study provides more nuanced insight as to what happens to targets as ingroup and outgroup members during interpersonal emotion regulation, including their perceptions of the regulator and the emotions they experience, in a group-based scenario.

General Discussion

First, Studies 1-2 demonstrated that group members attempt to regulate the group-based emotions of ingroup and outgroup members to achieve group goals (Hypothesis 1). Specifically, Study 1 established that group members try to influence the emotions of both

ingroup and outgroup members by experimentally manipulating the target's group membership to determine how group members' emotion regulation goals may differ based on the target's group membership. By assuming that news articles about group relevant events were directed primarily at ingroup rather than outgroup members, Study 2 showed that group members attempt to regulate the emotions of ingroup members. These two studies additionally established that emotions are perceived as instrumental to group goals (or not) as a function of whether the target is an ingroup or outgroup member (Hypothesis 2), in which different emotions were being up- or down-regulated in ingroup or outgroup members due to their instrumentality to group goals. Specifically, group members attempted to upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Hypothesis 3). Last, Study 3 demonstrated that these group members' emotion regulation attempts result in the experience of upregulated emotions, although not necessarily in the intended way or greater for ingroup than outgroup members (Hypothesis 4).

Hypothesis 1: Influencing Others' Group-Based Emotions

First, Studies 1 and 2 examined whether group members attempt to regulate the emotions of ingroup and outgroup members to achieve group goals (Hypothesis 1). In Study 1, group members attempted to influence the emotions of both ingroup and outgroup members by sending them emotion-inducing stimuli to accomplish group goals. Specifically, when anger was instrumental in the boxing game, group members were inclined to send anger emotion-inducing stimuli rather than happy or neutral emotion-inducing stimuli to ingroup members. Conversely, when happiness was instrumental in the

music game, group members preferred to send happiness emotion-inducing stimuli rather than anger or neutral emotion-inducing stimuli to ingroup members. In both cases, group members actively attempted to influence the emotions of ingroup and outgroup members based on group goals. This is evident because if group-based emotion regulation attempts were not taking place, there would be no differences in the emotion-inducing stimuli that regulators wished to send to ingroup and outgroup members.

Study 2 additionally supported Hypothesis 1 but in the context of written rather than visual media (i.e., writing news articles with emotion words rather than sending emotion-inducing videos as in Study 1) presumably aimed primarily at ingroup members. In this study, more liberal compared to more conservative media sources (i.e., group members) differed in how they tried to influence ingroup members' group-based emotions when an event was group-relevant (i.e., the political event of COVID-19). Specifically, in comparison to more conservative media sources, more liberal media sources used more anxiety words in news articles on the group-relevant event of COVID-19. These results suggest that in comparison to more conservative group members, these more liberal group members attempted to upregulate the group-based emotion of anxiety in other ingroup members based on group goals.

Together, these studies support Hypothesis 1, that group members attempt to regulate the emotions of both ingroup and outgroup members. In Study 1, regulators explicitly indicated their emotion regulation goals, and in Study 2, emotion regulation goals were inferred based on what the regulators attempted. In Study 1, the emotion regulation goals were measured as the regulator's preferences for sending emotion-inducing stimuli to the target. In Study 2, the emotion regulation goals were measured as the emotion words that the

regulator used to try to influence the target's emotions. In both studies, the regulators had different emotion regulation goals for influencing others' group-based emotions, aligning with their group goals.

In Study 1, it is essential to note that group members had explicitly different emotion regulation goals for ingroup and outgroup members to achieve group goals, which is distinct from group members attempting to regulate the emotions of only ingroup members (and not outgroup members). Since group members often try to hurt the outgroup when they are perceived as threatening to the ingroup in high conflict situations (Riek et al., 2006), it is possible that this scenario was perceived as threatening to the ingroup due to the attempts of group members at harming the outgroup members' chances of winning by upregulating non-instrumental emotions and downregulating instrumental emotions. However, there may be scenarios where group members prefer only to regulate the emotions of ingroup members and not outgroup members due to ingroup favoritism rather than outgroup derogation (e.g., Greenwald & Pettigrew, 2014). Future research should examine the circumstances in which group members attempt to and do not attempt to regulate the emotions of outgroup members.

Hypothesis 2: Instrumental Emotions Based on Target's Group Membership

Next, emotions were perceived as instrumental to group goals (or not) as a function of whether the target was an ingroup (Studies 1-2) or outgroup member (Study 1). Due to the regulator's status as a group member, group goals were activated, and emotion regulation targets were categorized as either an ingroup or outgroup member.

When extrinsic group-based emotion regulation occurs, the regulator perceives others as an ingroup member or an outgroup member. In Study 1, participants were asked

the extent to which they perceived closeness with the ingroup member and the outgroup member, which was designed to measure perceptions of ingroup and outgroup memberships (i.e., which person was the ingroup member and which person was the outgroup member). The results demonstrated that group members perceived more closeness with the ingroup member than the outgroup member, suggesting that group members target-categorized others as either an ingroup or outgroup member. Although it could be argued this measures closeness rather than group membership, these results combined with the extent to which participants supported the two game players' political organizations (i.e., perceived group membership) suggests otherwise.

Group members had different emotion regulation goals for ingroup and outgroup members in order to accomplish group goals. For instance, in Study 1, for ingroup members, group members had the emotion regulation goals of upregulating happiness in the music game and upregulating anger in the boxing game. However, for outgroup members, group members had different emotion regulation goals. Specifically, in the music game, group members had emotion regulation goals of upregulating anger and neutral emotions in the music game and upregulating happiness and neutral emotions in the boxing game. These differences suggest that how others' group-based emotions are regulated depends on individuals having self-categorized as group members and then target-categorizing others as either an ingroup member or an outgroup member.

The results from Studies 1 and 2 align with how individual-based emotions are regulated, in which the instrumentality of an emotion (i.e., the individual context) determines how it will be regulated. For instance, whether two individuals are cooperating together or competing against each other determines how instrumental an emotion is and the

extent to which the regulator wants the target to experience a specific emotion (Netzer et al., 2015). As with individual-based emotions, group members try to upregulate or downregulate others' positive or negative group-based emotions based on the instrumentality of an emotion in the particular scenario. However, with group-based extrinsic emotion regulation, group members focus on evaluating how regulating others' emotions can accomplish group goals rather than individual goals.

Hypothesis 3: Upregulating and Downregulating Emotions in Ingroup and Outgroup Members

Next, based on the target's group membership, group members attempted to (a) upregulate instrumental emotions and downregulate non-instrumental emotions for ingroup members, and downregulate instrumental emotions and upregulate non-instrumental emotions for outgroup members (Hypothesis 3). In Study 1, happiness was instrumental in the music game, whereas anger was instrumental in the music game. When presented with the option of sending emotion-inducing stimuli to convey these instrumental or non-instrumental emotions, group members consistently chose to send ingroup members the instrumental emotion-inducing stimuli and to send outgroup members the non-instrumental emotion-inducing stimuli, regardless of the hedonic or anhedonic nature of each emotion. These results support that whether an emotion is instrumental or not determines how the regulator will try to influence their target, and that group members will try to influence both ingroup and outgroup members based on this instrumentality.

Similarly, in Study 2, liberal to conservative media sources differed in how they regulated instrumental versus non-instrumental emotions. Specifically, anxiety was instrumental for more liberal media sources when discussing the group-relevant event of

COVID-19 due to its role in increasing perceptions of threat. As a result, in comparison to more conservative media sources, for whom anxiety was non-instrumental, more liberal media sources tried to upregulate the instrumental emotion of anxiety, as measured by using more anxiety words in the news articles. Additionally, other emotions, such as sadness or positive emotions, were not upregulated by these more liberal media sources due to lack of instrumentality toward the group goal of perceiving COVID-19 as a threat (Shepherd et al., 2020). As such, group members consider whether an emotion is instrumental or not to determine their emotion regulation goals for regulating others.

These findings are consistent with the emotion regulation goals in individual-based emotion regulation, in which the instrumentality of emotions is prioritized above hedonic goals due to the benefits of the long-term goal (Tamir, 2009). As with individual-based emotion regulation, when regulating the emotions of ingroup members, the instrumentality of a negative emotion outweighs the hedonism of an emotion (e.g., when group members upregulate anger or anxiety in ingroup members). However, when regulating the emotions of outgroup members, the instrumentality of a positive emotion outweighs the anhedonism of an emotion (e.g., when group members upregulate happiness in outgroup members) despite often wanting outgroup members to feel worse rather than better (Plant & Devine, 2003).

Hypothesis 4: Influencing the Target's Emotions

Finally, Study 3 demonstrated that emotion regulation goals can influence the target's emotions (Hypothesis 4), although not always in the direction of the regulator's goals. In Study 3, after reading articles on COVID-19 and Ebola from liberal and conservative media sources, group members evaluated their experienced emotions and their

perceptions of the regulator's emotion regulation goals. Interestingly, targets did not perceive the regulator's emotion regulation goals differently based on their group membership. Rather, the differences were in the target's perceptions of how more liberal or more conservative media sources were trying to convey events on COVID-19 and Ebola. This suggests that the target's group membership does not always affect their perceptions of the regulator's goals, but that the target's group membership may affect their experienced emotions instead.

With the exception of the emotion of anxiety, the target's perceptions of the regulator's emotion regulation goals did not coincide with the target's experienced emotions. This misalignment suggests that although the regulator's attempts at influencing group-based emotions affected the target's group-based emotions at times (i.e., the emotion of anxiety), the target's perceptions of the regulator's emotion regulation goals were not the only factor in influencing the target's experienced emotions. This lack of alignment may be due to the target's uncertainty or inaccuracy of the regulator's group identity since participants in Study 3 were not able to glean whether the news article they read was from a liberal or conservative media source. Just as the target's group membership as an ingroup or outgroup member to the regulator influences the regulator's emotion regulation goals, the regulator's group membership as an ingroup or outgroup member to the target (and subsequently, the target's perceptions of the regulator's goals) may influence the target's experienced emotions. Further research should examine how targets perceive emotion regulation goals from ingroup or outgroup members differently.

Implications

The current investigation extends prior literature on group-based emotion regulation. Previous studies tend to examine intrapersonal group-based emotion regulation, in which group members regulate their own group-based emotions (e.g., Goldenberg et al., 2014; Halperin, 2011; Leach et al., 2006; Wohl et al., 2006). However, these studies investigated the extrinsic group-based emotion regulation processes, in which group members attempt to regulate others' group-based emotions. Although there have been discussions on the theoretical aspects of extrinsic group-based emotion regulation (e.g., Mackie & Smith, 2018; Goldenberg et al., 2016) and research on the regulation of group-based emotion in outgroup members (Netzer et al., 2020), these current findings empirically tested the processes of extrinsic emotion regulation in both ingroup and outgroup members, demonstrating that group members' emotion regulation goals may differ for ingroup and outgroup members based on the instrumentality of the emotion toward achieving group goals.

These findings also have implications for the literature on interpersonal emotion regulation. Although prior research on interpersonal extrinsic emotion regulation generally examines how emotions are regulated with others at a personal level (e.g., friendships or romantic partners, Levy-Gigi & Shamay-Tsoory, 2017; peers or parents, López-Pérez et al., 2016; workplace, Niven et al., 2009), this research considers how emotions are regulated with others at the group level (i.e., ingroup and outgroup members). By identifying each person's group membership, these results consider the importance of who the regulator and target are to each other (i.e., ingroup or outgroup members) due to different emotion regulation goals from the regulator and different experienced emotions from the target. In this way, these findings consider the perspective of the target in addition to the regulator, as

the target perceives the regulator's emotion regulation goals before experiencing a specific emotion.

Limitations and Future Directions

Although Study 3 examined how the target's emotions may be influenced by the regulator's emotion regulation goals, in order to determine the effectiveness of the regulator's goals in influencing emotions, the regulator's group identity (i.e., whether they were liberal or conservative) was not revealed to the target. Additionally, when targets were asked about the regulator's group identity, the targets often did not know or were incorrect, such that the news articles of Study 3 did not clearly portray the regulator's group identity. Since the results of Study 3 demonstrated that the regulator's emotion regulation goals can (sometimes) affect the target's emotions, the next step is to examine how the target's emotions fluctuate in relation to the regulator. For instance, how do the target's emotions change when the target is explicitly told that the regulator is an ingroup versus an outgroup member? That is, would emotion regulation attempts from an ingroup member be more effective than emotion regulation attempts from an outgroup member due to higher levels of trust with ingroup members (Elashi & Mills, 2014; Tanis & Postmes, 2005)? Additionally, since levels of group identification can affect group-based emotions, future research should explore how differing levels of group identification from both the regulator and the target affect their emotion regulation goals and emotions, respectively.

Although it can be suggested that the media sources from Studies 2 and 3 were simply expressing an opinion to their ingroup rather than regulating ingroup emotions, as group members, media outlets have group goals and would likely regulate to achieve those group goals. Additionally, ingroup targets in Study 3 perceived different emotion regulation

goals from the media sources when asked about the extent to which media sources were trying to convey anxiety, suggesting that these media sources had emotion regulation goals of influencing ingroup emotions. However, future research can explicitly ask the regulator their emotion regulation goals and examine the extent to which the target's emotions were influenced.

Next, this series of studies takes a single snapshot of how group members regulate others' emotions and the target's experienced emotions. However, self-categorization and group identification are often reassessed and may change over time in dynamic and cyclical processes (Gross & Thompson, 2007; Goldenberg et al., 2016). Although group-based emotions can arise from ingroup identification, group-based emotions also influence ingroup identification (Kessler & Hollbach, 2005). Additional research should investigate how these cycles of self-categorization and group identification affect the regulator and target in terms of how the regulator's emotion regulation goals change and subsequently, how the target's emotions are influenced. Due to this constant cycle where people reassess their group membership (and levels of group identification), regulators may be constantly adjusting their emotion regulation goals, and targets may be responding with their emotions accordingly.

Additionally, this study clearly identifies a regulator and a target, but actual interactions between group members are more complicated. In addition to fluctuating self-categorizations and levels of group identifications, group members can be both the regulator and the target (in which the other group member is also attempting extrinsic emotion regulation), and group members may also be regulating their own emotions. The dynamics of interpersonal group-based emotion regulation may also change with additional group members, and whether those additional group members are ingroup or outgroup members.

After all, social interactions are constantly in flux, and emotion regulation processes may be continuously changing as well.

Last, there may be cultural differences that affect group members' emotion regulation goals and experienced emotions in various ways. For example, as regulators, members from collectivist cultures are less likely to have hedonic emotion regulation goals than members from individualist cultures (Miyamoto & Ma, 2011), which suggests that group members from collectivist cultures may be less likely to try to influence the hedonic emotions of others than group members from individualist cultures. There may be further nuances as to how these group members from collectivist or individualist cultures try to influence these emotions due to having different views on ingroup versus outgroup members, in which members from collectivist cultures have more ingroup bias than members from individualist cultures (Yamagishi et al., 1998). Additionally, as emotion regulation targets, since members of collectivistic cultures experience socially engaging emotions more than members of individualist cultures, assuming the same emotion regulation goals from the regulator, targets from collectivist cultures may be more likely to experience friendly emotions and guilt, whereas targets from individualist cultures may be more likely to experience emotions such as pride and anger (Kitayama et al., 2000). Thus, further research should be conducted on cultural differences in how regulators try to influence the emotions of ingroup and outgroup members, as well as on cultural differences in how targets experience emotion regulation attempts.

Conclusion

In a series of three studies, I tested a model (see Figure 3) to understand how group members attempt to regulate the emotions of ingroup and outgroup members. After self-

categorizing as a group member, the regulator's group goals are activated and others are categorized (i.e., target-categorized) as either ingroup or outgroup members. Based on these group goals, the regulator examines which emotions would be instrumental to influence based on the target's group membership, in which instrumental emotions are upregulated in ingroup members while downregulated in outgroup members, and non-instrumental emotions are downregulated in ingroup members while upregulated in outgroup members. Thereafter, the regulator's emotion regulation attempts may influence the target's experience of emotions, although not necessarily in ways that the regulator intended.

Evidence from three studies supported this model in establishing how extrinsic group-based emotion regulation may occur. Since the experience and regulation of group-based emotions often involves others, it is essential to examine the processes in which these occur. Ultimately, emotions are a powerful influence on thoughts and behaviors, and group-based emotions have both intragroup and intergroup consequences. By gaining a better understanding of how group members try to influence the emotions of ingroup and outgroup members, and how the ingroup and outgroup members' emotions respond accordingly, emotion-based interventions may improve intragroup cohesion or reduce intergroup conflict.

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Appendix A

Pilot Study for Study 1 Materials

A pilot study was conducted to (1) determine the appropriate liberal and conservative political organizations that liberal-leaning participants would select and not select, (2) evaluate the game descriptions to ensure that participants could infer the emotion that was instrumental to each game, and (3) assess the extent to which the emotion-inducing videos conveyed happiness, anger, and neutral emotions.

Methods

Participants

A total of 102 UCSB students (M_{age} = 18.83, SD_{age} = 1.02) were recruited through the Human Subjects Pool to respond to the survey online. The sample demographics in this pilot study matched that of the main study. The participants consisted of 70 females, 22 males, and 1 non-cisgender individual.

Procedure, Materials, and Measures

Participants were told that they would be responding to an online survey to test study materials for a future study, in which they would be evaluating the political leanings of certain organizations and determining how game descriptions and video clips make them feel.

Selecting Liberal-Leaning and Conservative-Leaning Organizations. Participants evaluated 20 liberal to conservative organizations each (see Table 8) on three questions about each organization's political orientation, how well-known each organization is, and the extent to which the participant would support the organization.

Political Orientation of Organization. First, participants were asked a question about the political orientation of each organization. Participants were asked, "How liberal to conservative do you think this organization is?" on a 5-point Likert Scale ranging from 1 (*Very liberal*) to 5 (*Very conservative*). Higher scores indicated that participants believed the organization to be more conservative, whereas lower scores indicated that participants believed the organization to be more liberal.

Fame of Organization. To evaluate how well-known each organization was to students, participants were also asked, "How well-known is this organization?" on a 5-point Likert Scale ranging from 1 (*Not at all*) to 5 (*A lot*). Higher scores indicated greater fame of organization among the participants.

Participant Support of Organization. To examine whether participants would support the organization, they were asked, "How much do you support the goals of this organization?" on a 5-point Likert Scale ranging from 1 (*Not at all*) to 5 (*A lot*). Higher scores indicated that participants would be more likely to support the organization.

Table 8

List of Liberal-Leaning and Conservative-Leaning Organizations

Liberal-Leaning Organizations	Conservative-Leaning Organizations
American Civil Liberties Union	America First Committee
Black Lives Matter	American Conservative Union
Democratic Socialists of America	American Family Association
Greenpeace	Blue Lives Matter
Habitat for Humanity	Citizens United
Lambda Legal	Freedom Watch
National Association for the Advancement of Colored People	National Rifle Association
Planned Parenthood	National Right to Life
Sierra Club	Pro-Life Action League

Selecting Game Descriptions. Participants then evaluated two different game descriptions and randomly assigned to evaluate either the long or short version of these game descriptions. The music game description and the boxing game description were written in a way so that they would parallel each other. In the game description for the boxing game condition, participants should infer that anger would be instrumental in helping the game players win the game, whereas in the game description for the music game condition, participants should infer that happiness would be instrumental in helping the game players win the game.

Participants were presented with both game descriptions (see Appendix B) and asked two questions each for each of the following six emotions: anger, fear, anxiety, happiness, sadness, calmness. Participants were asked, "Before playing the game, to what extent would you want to feel the following emotions to play your very best?" These items were rated on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A lot*).

Selecting Emotion-Inducing Stimuli. Participants were randomly assigned to evaluate six of the nine emotion-inducing videos on each of the following six emotions: anger, fear, anxiety, happiness, sadness, calmness. Participants were asked, "To what extent does the video make you feel:" with each of the six emotions listed, evaluating these emotions on a 5-point Likert scale, ranging from 1 (*Not at all*) to 5 (*A lot*). These videos each were selected from prior research to induce either anger, happiness, or neutral emotions. (See Table 9 for video details.)

Table 9

List of Emotion-Inducing Stimuli to Pilot

Movie	Target Emotion	Length (min:sec)	Description	Used by
Witness (1985)	Anger	1:31	An Amish family drives their horse-drawn buggy into town, where teenagers bully and humiliate the family.	Hagemann et al., 1999; Hewig et al., 2005; Tomarken et al., 1990
My Bodyguard (1980)	Anger	4:06	A young man is attacked and beaten up by a group of older pupils at a park.	Gross & Levenson, 1995; Rottenberg et al., 2007
College Conspiracy (2009)	Anger	4:47	A narrator describes the flaws of college and college debt using statistics.	Gilman, 2017
Marie Antoinette (2006)	Happiness	2:13	Marie Antoinette spends time with her young daughter, enjoying the outdoors.	Jenkins & Andrewes, 2012
Deep Blue (2006)	Happiness	2:00	Dolphins swim elegantly through the ocean.	Jenkins & Andrewes, 2012
Sweet Home Alabama (2002)	Happiness	1:17	A man surprises a woman at a warehouse jewelry store with a proposal.	Zupan & Babbage, 2017
All the President's Men (1976)	Neutral	1:06	A man is in a courtroom talking to people to try to get information from them.	Jenkins & Andrewes, 2012
Lost in Translation (2003)	Neutral	1:36	A man goes about his daily routine, from waking up to riding in an elevator.	Jenkins & Andrewes, 2012
Rounders (1998)	Neutral	0:55	Two people are at a barbershop talking about a poker game.	Zupan & Babbage, 2017

Results and Conclusion

Selecting Liberal-Leaning and Conservative-Leaning Organizations

A collection of liberal-leaning and conservative-leaning political organizations were gathered through using websites from search engines and ideas from research assistants. Thus, these organizations were evaluated to determine which liberal-leaning organization participants would be most likely to support, and which conservative-leaning organization participants would be most likely to not support. The liberalism and conservatism of the

organization, how well-known the organization is, and the extent to which participants support the organization were all considered when determining which liberal-leaning and which conservative-leaning organizations participants would choose to donate and not donate to, respectively. (See Table 10 for the ratings of political organizations.)

First, in considering liberal-leaning organizations, a low score on the liberal to conservative scale was desirable, as well as high scores on the fame of the organization and participant support of the organization. Two organizations were considered: Black Lives Matter and Planned Parenthood, which were considered the most liberal organizations, most well-known organizations, and most likely to be supported by participants.

In considering conservative-leaning organizations, high scores on the liberal to conservative scale and the fame of the organization were desirable, as well as a low score on participant support of the organization. Blue Lives Matter met all three criteria most strongly, and it was the most well-known conservative-leaning organization.

In order to avoid the obvious parallel of Blue Lives Matter with Black Lives Matter as the conservative-leaning and liberal-leaning organizations, respectively, the two organizations selected to be used in Study 1 were Blue Lives Matter and Planned Parenthood.

Table 10

Ratings of Political Organizations

Political Organizations	Liberal—Conservative *M*(*SD*)	Fame of Organization *M*(*SD*)	Participant Support of Organization *M*(*SD*)
Liberal-Leaning Organizations			
American Civil Liberties Union (ACLU)	2.48(1.00)	2.78(1.36)	3.09(1.25)
Black Lives Matter	1.45(0.63)	4.67(0.81)	4.48(0.95)

Democratic Socialists of America	1.64(0.86)	2.56(1.21)	2.51(1.23)
Greenpeace	2.26(0.75)	2.36(1.16)	3.09(1.29)
Habitat for Humanity	2.26(0.65)	3.06(1.41)	3.82(1.16)
Lambda Legal	2.93(0.83)	1.66(0.89)	2.21(1.29)
National Association for the Advancement of Colored People (NAACP)	1.70(0.66)	3.55(1.40)	4.09(1.15)
Planned Parenthood	1.61(0.73)	4.73(0.67)	4.41(0.96)
Sierra Club	2.75(0.71)	2.15(1.15)	2.62(1.37)
Southern Poverty Law Center	2.72(0.98)	1.78(0.91)	2.71(1.28)
Conservative-Leaning Organizations			
America First Committee	3.60(0.89)	2.09(1.06)	2.17(1.13)
American Conservative Union	4.55(0.78)	2.45(1.21)	1.67(1.12)
American Family Association (AFA)	3.01(0.85)	2.75(1.36)	2.91(1.20)
Blue Lives Matter	4.52(0.95)	4.03(1.16)	1.65(1.16)
Citizens United	3.02(0.76)	2.43(1.25)	2.71(1.17)
Freedom Watch	3.14(1.03)	2.27(1.11)	2.42(1.19)
National Rifle Association (NRA)	4.47(0.90)	3.34(1.52)	1.69(1.20)
National Right to Life	3.80(1.19)	2.19(1.08)	2.40(1.40)
Pro-Life Action League	4.57(0.89)	2.75(1.35)	1.58(1.16)
The Heritage Foundation	3.10(0.80)	2.34(1.09)	2.45(1.18)

Selecting Game Descriptions

When selecting the game descriptions, in order to create consistency for the participants, the game descriptions for the music and boxing game would both need to be the short version, or they would both need to be the long version. All four game descriptions had relatively high ratings of calmness, in comparison to other emotions. Although the long version of the music game description had the highest ratings of calmness that exceeded any other emotion, this game description also had higher ratings of happiness, which was the

target emotion, compared to the short version of the music game description. Similarly, in comparison to the short version of the boxing game description, the long version of the boxing game description had the higher ratings of anger, which was the target emotion. (See Table 11 for emotion ratings.)

As such, in considering which game descriptions would allow participants to infer the target emotion to the greatest extent, the long version of both the music and boxing game descriptions were used for Study 1.

Table 11

Emotion Ratings for Each Game Description

Game Descriptions	Anger *M(SD)*	Fear *M(SD)*	Anxiety *M(SD)*	Happiness *M(SD)*	Sadness *M(SD)*	Calmness *M(SD)*
Music Game - Short	1.00(0.00)	2.00(1.26)	2.00(1.41)	**3.64(1.12)**	1.00(0.00)	3.09(1.76)
Music Game - Long	1.09(0.30)	1.18(0.40)	1.27(0.47)	**4.27(1.10)**	1.00(0.00)	4.36(0.92)
Boxing Game - Short	**3.00(1.41)**	1.73(1.19)	1.82(1.33)	2.64(1.12)	1.18(0.40)	2.45(1.04)
Boxing Game – Long	**3.09(1.30)**	1.64(0.81)	1.82(0.87)	2.18(0.87)	1.09(0.30)	2.91(1.45)

Note: The targeted emotions for each game description are bolded.

Selecting Emotion-Inducing Stimuli

In selecting the emotion-inducing stimuli, three components were considered: (1) length of video, (2) strength of targeted emotion, and (3) whether the target emotion was discriminant from other emotions. (See Table 12 for ratings of emotion-inducing stimuli.)

For the targeted emotion of anger, the video clip from *College Conspiracy* (2009) was ruled out due to having too similar ratings of anger and anxiety. The video clips from *Witness* (1985) and *My Bodyguard* (1980) both had divergent enough ratings of anger from the other emotions, but the video clip from *Witness* (1985) was shorter in length that

matched the length of the video clips for the other targeted emotions of happiness and neutral of around a minute and a half. Thus, the video clip from *Witness* (1985) was used in Study 1 to induce anger.

For the targeted emotion of happiness, the video clips from both *Deep Blue* (2006) and *Marie Antoinette* (2006) had similar but higher ratings of calmness than happiness, so these video clips were not used. The video clip from *Sweet Home Alabama* (2002) had higher ratings of happiness than all other emotions and was around a minute and a half in length. Thus, the video clip from *Sweet Home Alabama* (2002) was used in Study 1 to induce emotions of happiness.

In targeting neutral emotions, the goal was to have low ratings across all emotions. Although any of these three video clips would have been appropriate for the study due to being at an appropriate length and having similar emotion ratings, the video clip from *All the President's Men* (1976) had the lowest rating of emotions when averaging across all six emotions (M = 1.58, SD = 0.40), in comparison to the video clips from *Lost in Translation* (2003; M = 1.71, SD = 0.49) and *Rounders* (1998; M = 1.65, SD = 0.42). The video clip from *All the President's Men* (1976) also had the lowest emotion rating maximum, which was anxiety, of which the other video clips had similar ratings of anxiety. Thus, the video clip from *All the President's Men* (1976) was used in Study 1 to induce neutral emotions.

Table 12

Emotion Ratings for Each Video Clip

Emotion-Inducing Video Clip	Anger *M(SD)*	Fear *M(SD)*	Anxiety *M(SD)*	Happiness *M(SD)*	Sadness *M(SD)*	Calmness *M(SD)*
Anger						
Witness (1985)	3.40(1.06)	1.92(0.89)	2.53(1.00)	1.32(0.76)	2.44(1.07)	1.44(0.84)
My Bodyguard (1980)	4.13(0.91)	2.70(1.24)	3.13(1.28)	1.08(.41)	3.40(1.13)	1.11(0.41)
College Conspiracy (2009)	3.38(1.26)	3.14(1.12)	3.37(1.22)	1.24(0.64)	2.97(1.19)	1.24(0.56)
Happiness						
Marie Antoinette (2006)	1.23(0.74)	1.16(0.66)	1.28(0.69)	3.13(1.34)	1.31(0.79)	3.52(1.30)
Deep Blue (2006)	1.10(0.53)	1.47(0.86)	1.61(0.95)	3.61(1.24)	1.19(0.70)	3.66(1.07)
Sweet Home Alabama (2002)	1.21(0.60)	1.26(0.51)	1.66(0.81)	3.68(1.20)	1.29(0.73)	2.45(1.04)
Neutral						
All the President's Men (1976)	1.38(0.63)	1.52(0.82)	2.06(0.95)	1.30(0.69)	1.27(0.63)	1.92(1.02)
Lost in Translation (2003)	1.30(0.64)	1.41(0.72)	2.07(0.98)	1.56(0.81)	1.59(0.74)	2.33(1.22)
Rounders (1998)	1.19(0.51)	1.58(0.86)	2.06(1.07)	1.50(0.67)	1.26(0.54)	2.29(0.95)

Appendix B

Game Descriptions for the Boxing Game and the Music Game

The short and long version of these game descriptions were evaluated during the pilot study. Results from the pilot study indicated that participants were better able to infer happiness from the long version of the game description for the music and boxing games, so the long version of the game descriptions were used for both music and boxing game conditions.

The long version contained both paragraphs of the following game descriptions, whereas the short version contained only the first paragraph of the following game descriptions.

For the boxing game, participants were shown:

"Work your way up the boxing rankings to become the world's best heavyweight hitter. In this game, you will fight against boxing legends to earn a spot in the Boxing Hall of Fame. Punch hard and show no mercy!

The purpose of the game is to place some heavy-hitting punches on your opponent, where high scores are measured by the number of punches you land. In this aggressive game, studies have shown that people perform best when they are tense and alert."

For the music game, participants were shown:

"Work your way into showbiz to become the world's best pop star. In this game, you will play guitar alongside guitar legends to earn a spot in the Music Hall of Fame. Strum the notes and stay with the beat!

The purpose of the game is to move from musical note to note in time on the screen, where high scores are measured by number of notes in time with the beat. In this free-

flowing game, studies have shown that people perform best when they are upbeat and spontaneous."

Appendix C

Description of the Methodology of the Seven Media Source Rating Systems

1. AllSides (2020)

AllSides (2020) created a media bias rating based on the media source's online content, using combinations of multiple methodologies, including a blind bias survey, editorial review, third party analysis, and independent review. The blind bias survey had readers with varying political orientations evaluate articles blindly, and then averaged these ratings; the editorial review consisted of ratings from the AllSides editorial staff of people of varying political orientations; the third-party analysis used published third-party academic research, surveys, or analyses with transparent methodologies; and the independent review consisted of an independent review performed by an AllSides editor or multiple editors. Articles were rated on a 5-point Likert scale, ranging from 1 (*Left*) to 5 (*Right*).

2. Ad Fontes Media Bias (2020)

A minimum of seven articles per source were sampled over a minimum of three weeks. Multiple raters from a group of nine analysts were used per article to minimize one person's political bias. Articles were rated on a 7-point Likert scale, ranging from 1 (*Most extreme left*) to 7 (*Most extreme right*).

3. Pew Research Center (2016)

Using the American Trends Panel (wave 1), this survey was conducted March 19 to April 29, 2014, by asking participants about the news sources they use and averaging the political ideological consistency scores of the participants for each news source based on a scale of 10 political values questions. The political ideological consistency scores for each news source ranged from -10 (*Consistently liberal*) to 10 (*Consistently conservative).*

4. Media Bias/Fact Check (2020)

A minimum of 10 headlines and 5 news articles per source by one primary editor and a collective of volunteers were reviewed by this media rating source. It rated each source in four categories of biased wordings/headlines (i.e., if the source used loaded emotion words and if the headlines matched the story), factual/sourcing (i.e., if the source used evidence and facts), story choices (i.e., if the source reported news important to both left- and right-leaning news), and political affiliation (i.e., how extreme the views of the source were), on an 11-point Likert scale, ranging from 0 (*Least biased*) to 10 (*Extreme bias*). These scores were then averaged before being placed into one of five categories of left, left-center, least biased, right-center, and right.

5. Budak, Goel, and Rao (2014)

The article by Budak, Goel, and Rao (2014) investigated political issues from 15 news outlets in the U.S., using a random subset of 10,502 articles on political events judged by 749 Mechanical Turk workers. Articles were rated on a 5-point Likert scale from -1 (Strong Democratic bias) to 1 (Strong Republican bias), and then these ratings were averaged across participants.

6. Mondo Times (n.d.)

Mondo Times (n.d.) is a media directory website where Mondo Times users rated the newspapers' political orientations on a 5-point Likert scale, ranging from 1 (*Left*) to 5 (*Right*). The chosen media sources evaluated by Mondo Times were based on the list of media sources by Gentzkow and Shapiro (2010), which used evaluations by Mondo Times.

7. Boston University Libraries (n.d.)

Newspapers were categorized based on editorial endorsements from the 2012 presidential race between Barack Obama and Mitt Romney. These selected newspapers by Boston University Libraries (n.d.) were categorized in three categories: leans liberal, moderate, and leans conservative.