Iowa Journal of Communication

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Welcome from the Editor, Kristen L. Majocha pg. 7

Investigating Relationships between Student Burnout and Classroom Communication Behaviors, by Jordan Atkinson, Mary E. Donato, Elijah Smith & Gannon Cornley III pg. 8

Previous research investigating student burnout relating to undergraduate students discovered that burnout has detrimental effects on academic performance and engagement (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). The purpose of this research was to extend the research on undergraduate student burnout by investigating its relationships with interest, engagement, and in-class oral participation. Participants were 120 undergraduate students enrolled at a small Midwestern university. Results indicated that all three dimensions of student burnout were negatively related to emotional interest and cognitive interest. With regard to student engagement: (a) diminished efficacy was negatively related to all four types of student engagement; (b) cynicism was negatively related to silent in-class engagement and thinking about the course content; and (c) exhaustion was negatively related only to thinking about the course content. Finally, students' in-class oral participation was negatively related to their exhaustion and diminished efficacy, and not related to their level of cynicism.

Gossip via Text Message: Motivation for Using Text Messaging to Share Gossip, by Samantha Quinn pg. 24

Gossip is common in human communication as individuals are constantly sharing information with and about others. Yet, how we gossip to share information in a technologically advanced world is ever-changing. The present study takes a novel approach to studying gossip by focusing on gossip taking place via text messaging (short message service; SMS), namely, examining individuals' experiences and motivations for sharing gossip over SMS. Little research exists on gossiping via SMS. Using a functional approach and an online questionnaire the study investigated motivations for and functions of gossip over text message. Additionally, the impact of gossiping via SMS on the quality of the relationships is considered. Findings suggest most individuals conceptualize gossip as a common communication event that is not necessarily positive or negative, yet involves sharing information about someone without their knowledge. Findings demonstrate that individuals share gossip via SMS because of the ease, convenience, and accessibility of the technology. Additionally, users are likely to gossip about a friend's behavior and use gossip as a form of

connection and emotional expression. Implications and directions for future research are discussed.

"I Never Did Those Things They Said!": Image, Coercive Control, and Intrusion From Former Partners' Technology-Mediated Abuse, by Katie Lever & Jessica Eckstein pg. 49

The pervasive nature of the internet and social media presents new dynamics for abuse perpetrators engaging in obsessive relational intrusion practices. Drawing on Katz and Aakhus's (2002) Theory of Apparatgeist, we explore how abuse victims understand the "spirit" of technology when used against them. Victims' (N = 187) qualitative responses were analyzed to uncover meanings attributed to technology-mediated abuse after leaving their violent partners. Primary themes of harassing intrusion and coercive control were understood by participants in a number of ways – both overlapping and distinct. We discuss these findings in terms of victims' primary identity concerns related to presenting versus perceived selves.

The Impact of Virtual Connectedness on Boundary Management Choices, by Kim Smith pg. 68

Technological innovation has created countless opportunities for employees to complete their work anytime, anywhere using nontraditional work arrangements. The proliferation of communication technology use, along with organizational responses to the COVID-19 pandemic, challenge the traditional types of boundaries that employees typically create around their work and home roles. This study connects boundary management profiles developed by Kossek, Ruderman, Braddy, and Hannum in 2012 to the concept of virtual connectedness, suggesting that the extent to which an employee is virtually tied to their organization may influence the amount of control that individual has over their work-nonwork boundaries. Findings suggest that, while virtual connectedness may impact the ways in which boundaries are enacted, individuals who are more connected and prefer to use communication technologies to integrate their work and home lives may actually gain more control over that process. Implications for trends in generational behaviors and the COVID-19 crisis are discussed.

Keeping it Casual or Lifelong Connection? The Effect of Digital Affordances on Attraction in an Online Dating Profile, by Brianna Lane pg. 86

Dating has changed significantly in the past 30 years. New methods of finding a partner have evolved with the changing media and online dating sites influence these communication processes. In this experiment, we examined how digital affordances influenced attraction. Participants (n = 315) were randomly assigned to view an online dating profile from either eHarmony, Tinder, or Craigslist and asked to report their romantic, social, and physical attraction. Our results indicated the language, the website, and the sex of the profile owner influence romantic attraction. Additionally, the language and the website influence social attraction and the photograph

influences physical attraction. We argue that digital affordances of disparate dating sites are not equal to one another, as design differences influence how users interpret the romantic, social, and physical attraction of online dating profiles; considering the recent closure of Craigslist's dating section, the future of romantic, social, and physical attraction may increasingly be bound to the technical pressures of an increasingly photo-centric online dating industry.

Discontinuance in Fitness Tracking Apps: An Analysis Using a Diffusion of Innovations Approach, by Kristin Maki &Arun Vishwanath pg. 107

The diffusion of innovations (DOI) framework has been robust in predicting and explaining the dispersion of numerous innovations. However, despite the prominence of DOI within practical and academic research, discontinuation continues to be an understudied phenomenon. The present study aims to redress this void by examining discontinuation within the context of fitness apps. In addition to examining this construct, the theory of self-monitoring is included as a potential explanatory factor. The present study uses survey results from a sample of undergraduate students (N = 241). The data were analyzed with hierarchical logistic regression, with the results showing an association between discontinuance and socially-driven uses of the app, contrary to expectations. Self-monitoring was not associated with discontinuance. Future research may benefit from examining additional factors, such as extrinsic motivation.

"It can happen to anybody's child": How Families Affected by Shaken Baby Syndrome/Abusive Head Trauma Work through the Stages of Family Crisis, by Amber Sorenson pg. 126

Although not frequently discussed in mainstream society, shaken baby syndrome/abusive head trauma is a significant problem. Victimized children often die as a result of the injuries they face, or they endure many struggles as they move forward in life—often with severe mental and physical disabilities. Families are often physically and psychologically unprepared for how a shaken baby syndrome/abusive head trauma diagnosis affects their lives for many years to come. This pilot study looks at how ten people affected by shaken baby syndrome/abusive head trauma work through the crisis situation and learn how to rebuild their lives and interpersonal relationships in the process.

Book Review: "How to Survive a Pandemic" by John Hudson, Lyricc King pg. 149

The UK Military's Chief Survival Instructor, John Hudson, has provided helpful advice on how to survive a pandemic, specifically COVID-19. The year 2020 has been a challenging year for most people, but with the help of this book, handling crisis communication can be more manageable.

Welcome from the Editor

Kristen L. Majocha

Welcome to the 52nd regular edition of the Iowa Journal of Communication. We are an award-winning state journal that publishes the highest quality scholarship on a variety of communication topics. Our journal is a product of the Iowa Communication Association, a professional organization whose purpose is to unite those persons with either an academic or professional interest in all disciplines of Communication and the Performing Arts.

This issue is exceptionally relevant. The authors address subjects applicable to the recent pandemic and offer concrete applications to our lived experiences. Jordan Atkinson, Mary E. Donato, Elijah Smith & Gannon Cornley III open the journal by exploring student burnout. Authors Samantha Quinn and Katie Lever & Jessica Eckstein offer research on negative and harmful communication. Kim Smith discusses connectedness. Brianna Lane and Kristin Maki & Arun Vishwanath cover digital communication topics. Our Westpahl student paper by Amber Sorenson covers the deeply sophisticated topic of trauma. Finally, Lyricc King reviews a book regarding crisis communication and how to survive a pandemic.

As you read the articles, consider citing the works in your own research. Also, think through how you can contribute. Manuscripts are now being sought for the Volume 53 regular edition and special issue. The deadline for both issues is April 30th, 2021. Special issue manuscripts should either directly address or relate to intersections of crisis communication in any of its many forms. Manuscripts for both issues may focus on any type of communication, including group, face-to-face, family, health, mediated communication, etc., and may use any methodology for analysis. Manuscripts may be either philosophical, theoretical, critical, applied, pedagogical, or empirical in nature. Submissions from all geographic areas are encouraged, and one need not be a member of the Iowa Communication Association to submit. We are particularly interested in unique, non-standard approaches and voices.

I bid you happy reading. Best wishes as we head into 2021. Feel free to contact me at majocha@calu.edu.

Kristen L. Majocha, PhD
Editor

Investigating Relationships between Student Burnout and Classroom Communication Behaviors

Jordan Atkinson, Mary E. Donato, Elijah Smith & Gannon Cornley III

Previous research investigating student burnout relating to undergraduate students discovered that burnout has detrimental effects on academic performance and engagement (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). The purpose of this research was to extend the research on undergraduate student burnout by investigating its relationships with interest, engagement, and in-class oral participation. Participants were 120 undergraduate students enrolled at a small Midwestern university. Results indicated that all three dimensions of student burnout were negatively related to emotional interest and cognitive interest. With regard to student engagement: (a) diminished efficacy was negatively related to all four types of student engagement; (b) cynicism was negatively related to silent in-class engagement and thinking about the course content; and (c) exhaustion was negatively related only to thinking about the course content. Finally, students' in-class oral participation was negatively related to their exhaustion and diminished efficacy, and not related to their level of cynicism.

Introduction

The landscape of American higher education has changed dramatically over the past few decades. Hersh and Merrow (2005) explained that increased cost of higher education, grade inflation, competitiveness, and the demands by students for higher monetary return on their educational investment are just some of the characteristics that have evolved over time. Furthermore, there are more students entering colleges each year because of external pressures (e.g., familial obligations, shifts in job trends). Recently, researchers have started to investigate pressures that undergraduate students encounter, specifically student burnout (Lin & Huang, 2012; Schaufeli et al., 2002). According to The National Center for Education Statistics (2016), 43% of full-time undergraduate students and 78% of part-time undergraduate students were employed in 2016. The fact that many undergraduate students currently have full-time and part-time jobs, in addition to family obligations, social obligations, the independence of university life, and immense academic pressure can certainly contribute to feelings of burnout for students (Stoliker & Lafreniere, 2015). The academic study of student burnout is an area worthy of exploration given that students encounter several sources of pressure, which can lead to academic burnout. Coincidently, instructional communication researchers are well positioned to explore student burnout and its effects on student communication and learning. Therefore, this study seeks to investigate the relationship between student burnout and three noteworthy student communication variables: student interest,

student engagement, and oral in-class participation. The gap in empirical research regarding these constructs is important for instructors to understand how students' burnout can influence their classroom communication behaviors. Interest, engagement, and participation are three important variables that have been well documented in instructional communication research (Harp & Meyer, 1997; Frymier & Houser, 2016) that have great learning benefits and communication benefits for students.

Literature Review

Burnout

The academic study of burnout has been popular for several decades. Frudenberger (1974) first defined burnout as "to fail, to wear out, or become exhausted by making excessive demands on energy, strength, or resources" (p. 159). Several years later, Maslach and Jackson (1981) forwarded that burnout is composed of three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion stems from stressors that cause people to feel overwhelmed. Depersonalization occurs when cynical or negative attitudes create a callous view of others and work. Reduced personal accomplishment occurs when one views themselves negatively and they become dissatisfied with their accomplishments (Maslach & Jackson, 1981). Researchers have discovered that symptoms of burnout include decreased efficiency, decreased motivation, decreased satisfaction with work, and increased risk of health impairments (Maslach, Jackson, & Leiter, 1996).

Burnout for students is similar to, but yet different from, burnout for working adults. For students, burnout refers to feelings of exhaustion because of study and academic demands, feelings of cynicism toward their study, and feelings of incompetence about their academic work (Schaufeli et al., 2002). In a cross-cultural sample of undergraduate students, it was discovered that when students experience burnout (i.e., exhaustion, cynicism, and reduced efficacy), their academic performance (i.e., grades) is negatively affected (Schaufeli et al., 2002). Furthermore, the three dimensions of student burnout were negatively correlated with the three dimensions of student engagement. In a recent meta-analysis, it was discovered that student burnout was negatively associated with social support (Kim, Jee, Lee, An, & Lee, 2018). Social support is the perception of a student belonging to a supportive social environment, which can manifest in emotional, tangible, or informational support (Cobb, 1976). Specifically, Kim et al. (2018) discovered that support from instructors and the school had the strongest negative relationship with burnout, followed by support from parents and peers. Jacobs and Dodd (2003) discovered that high levels of burnout among college students were predicted by subjective workload and negative

temperament, whereas low levels of burnout were predicted by participation in extracurricular activities, social support, and positive temperament. College students also report lower levels of burnout when they experience a strong sense of community in their living environment (McCarthy, Pretty, & Catano, 1990).

Burnout, as it relates to undergraduate students, is an understudied construct in the instructional communication literature. In fact, few empirical studies have examined student burnout (Cushman & West, 2006; Goodboy, Martin, & Johnson, 2015). Cushman and West (2006) developed a typology of precursors to college student burnout. They discovered that the precursors include assignment overload (i.e., the overabundance of exams and assignments), outside influences (i.e., external factors related to work and personal relationships), lack of personal motivation (i.e., procrastination, lack of work ethic, general disinterest in the topic), mental and physical health (i.e., depression, family illness), and instructor attitude and behavior (i.e., apathy, ego, boredom). Goodboy, Martin, and Johnson (2015) discovered that when graduate faculty members bully graduate students, they experience higher levels of burnout in their graduate program. Specifically, when graduate students were belittled, punished, experienced managerial misconduct, and were excluded by graduate faculty members, they experienced increased exhaustion, increased cynicism, and decreased professional self-efficacy. Student levels of burnout also influence their study behaviors. When students have a passion for studying, they report less cynicism and more self-efficacy (Stoeber, Childs, Hayward, & Feast, 2011). Instructors know the importance of encouraging student interest, engagement, and participation in the classroom and this study addresses how these behaviors are influences by the three dimensions of burnout.

Student Interest and Student Engagement

Student interest, according to Mazer (2012) and Harp and Mayer (1997), includes the two dimensions of emotional interest and cognitive interest. Emotional interest is defined as the degree to which students are energized and excited about the course material, whereas cognitive interest is defined as the degree to which students are attracted to a subject because they have a clear structural understanding of the content (Mazer, 2012). Mazer (2012, 2013b) found relationships between students' interest and their motivation, learner empowerment, and affective learning. Student engagement is the time and effort that students give to their educational pursuits (Kuh, 2009). Mazer (2012) expanded the construct of student engagement to include four dimensions: silent in-class behaviors (e.g., listening attentively), oral in-class behaviors (e.g., orally participating in class), thinking about the course content (e.g., thinking about how the material relates to their life), and out-of-class

behaviors (e.g., talking about the content outside of class with others). Numerous research findings have established that significant relationships exist between instructor behaviors and student interest and engagement. These instructor behaviors include, but are not limited to, nonverbal immediacy (Bolkan & Griffin, 2018; Mazer, 2012, 2013b), verbal and written clarity (Mazer, 2012, 2013b), content relevance (Bolkan & Griffin, 2018), humor (Bolkan & Griffin, 2018), relevant self-disclosure (Borzea & Goodboy, 2016), discussion facilitation (Finn & Schrodt, 2016), and prosocial behavior alteration techniques (Weber, 2004).

However, less research exists that investigates the relationships between student interest and engagement and students' characteristics. Weber (2003) discovered that student interest was significantly related to their intrinsic motivation, but student interest was not significantly related to their extrinsic motivation. With regard to other student characteristics, Linvill (2014) found that students' degree of identity exploration was a positive predictor of cognitive interest, whereas students' need for cognition was a positive predictor of interest and engagement. Myers and his colleagues (2016) found that students' use of classroom citizenship behaviors was positively related to their reports of emotional and cognitive interest. As it stands, there is a gap in empirical research examining potential antecedents that could influence students' levels of emotional interest, cognitive interest, and engagement in their classes. One antecedent that could potentially affect these classroom outcomes is students' degree of burnout. Therefore, this study proposes the following:

> H1: Student burnout will be negatively related to students' interest (i.e., emotional interest and cognitive interest).
>
> H2: Student burnout will be negatively related to students' engagement (i.e., silent in-class behaviors, oral in-class behaviors, thinking about the course content, and out-of-class behaviors).

Oral Participation

Participation is a way to bring students "actively in the educational process" (Cohen, 1991, p. 699) and has been defined as active engagement in the classroom that involves five elements: participation, contribution to discussion, group skills, communication skills, and attendance (Dancer & Kamvounias, 2005). Fassinger (1995) defined participation as the comments or questions that students express in class. There are multiple reasons as to why students may or may not participate in class: logistics (i.e., class size, seating arrangements, course policies); student confidence or communication apprehension; personality traits; instructor characteristics and classroom climate; and sex differences (Rocca, 2010). Specifically, Frymier and Houser (2016) found that oral

participation was negatively associated with communication apprehension and positively associated with motivation and learning indicators. Though the benefits of student oral participation are well documented in research (Handelsman, Briggs, Sullivan, & Towler, 2005; Rocca, 2010), only a small percentage of students make oral contributions in the classroom regularly (Karp & Yoels, 1976; West & Pearson, 1994). In fact, Howard and Henney (1998) discovered that only a small amount of students make 90% of the classroom interactions with instructors.

Students' participation in their classes may certainly be affected by their own characteristics and traits. Students who have an external locus of control (Trice, Ogden, Stevens, & Booth, 1987) and a grade orientation to their learning (Goodboy, Booth-Butterfield, Bolkan, & Griffin, 2015) tend to participate less in their classes. On the contrary, students who participate more in their classes tend to be high in willingness to communicate (Clark & Yeager, 1995), high in assertiveness (Myers, Martin, & Mottet, 2002), high in responsiveness (Myers et al., 2002), and have a higher self-esteem (Morrison & Thomas, 1975). Additionally, Myers (2010), using the Perry Scheme, discovered that multiplist students (i.e., those who move beyond simply viewing knowledge as right or wrong) asked more questions in class than dualist students (i.e., those who view knowledge as certain and simple). Recognizing that student in-class oral participation can be affected by several factors, one factor that should be considered is students' level of burnout. It is logical to assume that students' exhaustion, cynicism, and lack of efficacy could negatively influence their in-class participation because they could be too tired, preoccupied, or have a negative attitude. Therefore, this study proposes the following hypothesis:

H3: Student burnout will be negatively related to students' oral in-class participation in their courses.

Method

Participants and Procedures

Participants were 120 undergraduate college students enrolled in introductory level communication courses at a small Midwestern university. The participants were solicited using a convenience volunteer sampling technique (Kerlinger, 1986). Of the 120 participants, 44 were male, 75 were female, and 1 participant indicated "other." The age of the participants ranged from 18 to 61 years, with an average age of 20 years (M = 19.9, SD = 1.5). The majority of participants was White/Caucasian (n = 98; 81%), followed by Black/African American (n = 15; 12%), Middle Eastern (n = 3; 3%), Hispanic or Latino/a (n = 2; 2%), Multiracial (n = 1; 1%), and Asian/Pacific Islander (n = 1; 1%). Thirty-two participants indicated they were currently in their first year of college, whereas 21 were sophomores, 38 were juniors, 24 were seniors, 4 participants

indicated "other" as their class rank, and 1 did not indicate their class rank. On average, the participants were enrolled in 5 courses (M = 4.95, SD = .94; range = 1-8 courses) across 15 credit hours (M = 15.43, SD = 3.8; range = 3-22 credit hours).

Following approval from the university's Institutional Review Board (IRB), data were collected during the twelfth week of the semester. Students were provided with a cover letter stating the purpose of the study, identifying the procedures used to complete the study, and reiterating the anonymous nature of the study; an empty envelope; and the questionnaire. Participants then sealed the envelope and brought it to the front of the classroom where they dropped the envelope in a large box provided. Before beginning the questionnaire, participants were instructed to refer to the instructor and class they had immediately prior to the data collection session (Plax et al., 1986). Participants were not compensated for their time or efforts.

Instrumentation

Participants completed a questionnaire that included a series of instruments and a series of demographic questions. The questionnaire included the Maslach Burnout Inventory-Student Edition (Schaufeli et al., 2002), the Student Interest Scale (Mazer, 2012), the Student Engagement Scale (Mazer, 2012), and the Oral Participation Scale (Frymier & Houser, 2016).

The Maslach Burnout Inventory-Student Edition is a 15-item, three-factor instrument intended to assess levels of student burnout. Responses are solicited using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The instrument contains 5 items that assess exhaustion (e.g., "I feel emotionally drained by my studies" and "Studying or attending a class is really a strain for me"), 4 items that assess cynicism (e.g., "I have become more cynical about the potential usefulness of my studies" and "I doubt the significance of my studies"), and 6 items for professional efficacy (e.g., "I believe that I make an effective contribution to the classes that I attend" and "I feel stimulated when I achieve my study goals"). For the professional efficacy subscale, responses were reverse coded to indicate diminished efficacy. For this measure, previous Cronbach's alpha reliability coefficients range from .86 to .92 (Goodboy et al., 2015; Schaufeli et al., 2002). In this study, the Cronbach's alpha reliability coefficients were .92 for exhaustion (M = 4.33; SD = 1.71), .88 for cynicism (M = 3.45; SD = 1.77), and .85 for professional efficacy (M = 5.21; SD = 1.21).

The Student Interest Scale is a 16-item, two-factor measure intended to assess students' levels of interest in their class. The two factors are emotional interest and cognitive interest. Responses are solicited using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items of the *emotional*

interest dimension include "The topics covered in the course fascinate me" and "The class experience makes me feel good." Sample items of the *cognitive interest* dimension include "The information covered in the course is making me more knowledgeable" and "I feel like I am learning topics covered in the course." In previous studies, Cronbach's alpha reliability coefficients have ranged from .88 to .95 across the two factors (Mazer, 2012, 2013a, 2013b, 2017). In this study, the Cronbach's alpha reliability coefficient was .90 for emotional interest (M = 3.25; SD = 0.87) and .90 for cognitive interest (M = 3.50; SD = 0.90).

The Student Engagement Scale is a 13-item, four-factor measure intended to assess students' levels of engagement in their class. The four factors are silent in-class behaviors, oral in-class behaviors, thinking about course content, and out-of-class behaviors. Responses are solicited using a 5-point Likert scale ranging from 1 (*never*) to 7 (*always*). Sample items measuring *silent in class* behaviors include "Listened attentively to your classmates' contributions during class discussions" and "Gave your teacher your full attention during class." Sample items assessing the *oral in class* behaviors include "Verbally participated during class discussions" and "Participated during class discussions by sharing your thoughts and opinions." Sample items addressing the dimension of *thinking about course content* include "Thought about how the course material related to your life" and "Thought about how the course material will benefit will benefit you in your future career." Sample items assessing the dimension of *out of class behaviors* include "Reviewed your notes outside of class" and "Talked about course material with others outside of the class." Cronbach's alpha reliability coefficients have ranged from .77 to .96 across the four dimensions (Mazer, 2012, 2013a, 2013b, 2017). In this study, the Cronbach's alpha reliability coefficient was .84 for silent in-class behaviors (M = 5.41; SD = 1.06), .93 for oral in-class behaviors (M = 4.45; SD = 1.62), .95 for thinking about course content (M = 4.45; SD = 1.74), and .77 out-of-class behaviors (M = 4.18; SD = 1.42).

The Oral Participation Scale is a 7-item scale that measures students' reports of their oral participation during their classes. Responses are solicited using a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). Sample items include "I volunteer when I know the correct response or answer" and "I ask questions that solicit the teacher's opinions about the content." Frymier and Houser (2016) obtained a Cronbach's alpha reliability coefficient of .91 for the instrument. In this study, the Cronbach's alpha reliability coefficient was .83 (M = 2.20; SD = 0.92).

Results

To address the hypotheses, Pearson correlations were computed to determine the general relationships between the

variables. These correlations are displayed in Table 1. Hypothesis one projected that students who were experiencing burnout at higher rates would report less emotional and cognitive interest. Results of Pearson correlations revealed that all three dimensions of student burnout were significantly related to emotional interest: exhaustion (r = -.33; p < .001), cynicism (r = -.26; p < .01), and diminished efficacy (r = -.28; p < .01). Additionally, Pearson correlations indicated that all three dimensions of student burnout were significantly related to cognitive interest: exhaustion (r = -.28; p < .01), cynicism (r = -.26; p < .01), and diminished efficacy (r = -.33; p < .001). Therefore, H1 was supported as students who experienced burnout were less emotionally and cognitively interested (see Table).

Table

Two-Tailed Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10
1. Burnout (Exhaustion)	--									
2. Burnout (Cynicism)	.53^	--								
3. Burnout (Dimin. Efficacy)	-.03	-.23†	--							
4. Emotional Interest	-.33^	-.26†	-.28†	--						
5. Cognitive Interest	-.28†	-.26†	-.33^	.85^	--					
6. Silent In-Class Behaviors	-.05	-.21*	-.32^	.31^	.35^	--				
7. Oral In-Class Behaviors	-.11	-.02	-.29^	.39^	.42^	.53^	--			
8. Thinking about Content	-.19*	-.21*	-.25†	.60^	.70^	.36^	.52^	--		
9. Out-of-Class Engagement	-.01	-.17	-.40^	.33^	.37^	.39^	.35^	.35^	--	
10. Oral Participation	-.25†	-.08	-.32^	.36^	.36^	.23*	.76^	.44^	.33^	--

Note. *p <.05. †p <.01. ^p <.001. Because of the high correlations between certain variables, we checked for multicollinearity. No evidence for multicollinearity was found.

Hypothesis two predicted that students who experience burnout at higher rates would report less engagement (i.e., silent in-class behaviors, oral in-class behaviors, thinking about the course content, and out-of-class behaviors) in their courses. Pearson correlations revealed that cynicism (r = -.21; p < .05) and diminished efficacy (r = -.32; p < .001) were negatively related to silent in-class behaviors. Exhaustion was not significantly related to silent in-class behaviors (r = -.05; p = .61). There was a significant negative relationship between oral in-class behaviors and diminished efficacy (r = -.29; p < .001). However, exhaustion (r = -.11; p = .24) and cynicism (r = -.02; p = .81) were not significantly related to students' oral in-class behaviors. All three dimensions of student burnout were significantly related to thinking about the course content, as exhaustion (r = -.19; p < .05), cynicism (r = -.21; p < .05), and diminished efficacy (r = -.25; p < .01) were all negatively related. With regard to out-of-class engagement, only diminished efficacy was significantly and negatively related (r = -.40; p < .001), as exhaustion (r = -.01; p = .96) and cynicism (r = -.17; p = .07) were not significantly related to out-of-class engagement. Therefore, H2 was partially supported.

Hypothesis three posited that students who experience burnout at higher rates would report less in-class oral participation in their courses. Pearson correlations indicated that exhaustion (r = -.25; p < .01) and diminished efficacy (r = -.32; p < .001) were negatively related to oral participation. Cynicism was not significantly related to in-class oral participation (r = -.08; p = .41). Therefore, H3 was partially supported.

Discussion

The purpose of this research was to investigate the relationships between student burnout and the outcome variables of interest, engagement, and in-class oral participation. Results indicated that all three dimensions of student burnout were negatively related to emotional interest and cognitive interest. With regard to student engagement: (a) diminished efficacy was negatively related to all four types of student engagement; (b) cynicism was negatively related to silent in-class engagement and thinking about the course content; and (c) exhaustion was negatively related only to thinking about the course content. The final research finding uncovered that students' in-class oral participation was negatively related to their exhaustion and diminished efficacy, and not related to their level of cynicism. These results should be interpreted with caution given that many of the effect sizes are small.

Being both emotionally interested and cognitively interested in the classroom can provide a host of positive learning experiences for students (Mazer, 2012, 2013a, 2013b, 2017). Consistently, in this study, both dimensions of interest were negatively related to each dimension of student burnout. Emotional interest pertains to enthusiasm, enjoyment, and fascination with classes (Mazer, 2012). Therefore, it is plausible that when students feel burnout, they are less likely to enjoy or be enthusiastic about their classes. Cognitive interest pertains to clearly understanding the course material and understanding how the course is useful (Mazer, 2012). When a student enters the classroom exhausted, cynical, and with inefficacy, then they are less likely to remember the course material. As noted in previous research, instructor behaviors play in important role in students' emotional interest and cognitive interest (Bolkan & Griffin, 2018; Harp & Mayer, 1997; Mazer, 2012, 2013b; Titsworth, 2001). With regard to ideal instructors, when students were asked about preferred behaviors or characteristics of their instructors, they prioritized clarity, competence, and relevance (Goldman, Cranmer, Sollitto, Labelle, & Lancaster, 2016) over other behaviors or characteristics. These behaviors (i.e., clarity, competence, and relevance) will assist students in their interest in the classroom setting. Hence, instructors should continue delivering material in an interesting manner that enhances students' interest levels.

Additionally, they can remind students to come to class rested, with a positive attitude, all while promoting efficacy in their students.

The next set of findings (i.e., those pertaining to student engagement and in-class oral participation) produced mixed results as hypotheses 2 and 3 were partially supported. Upon further examination of the results, diminished efficacy was negatively related to all dimensions of engagement and in-class oral participation. Students who do not feel self-efficacious in the classroom are typically not going to speak up and be orally engaged. It is likely that students with diminished efficacy do not have the confidence to speak in front of their peers about class-related topics. In previous studies, confidence has been ranked as the most motivating factor for student participation (Fassinger, 1995; Weaver & Qi, 2005). Exhaustion is another dimension of burnout that was negatively related to thinking about course content and in-class oral participation. Students who are exhausted from burnout are likely going to spend less time participating in class because they could be tired from other activities. It is also possible for exhausted students to not think and reflect on the course content because their thoughts might be on other issues not related to the course. An interesting finding in this study was the lack of significant relationships between cynicism and oral in-class engagement, out-of-class engagement, and oral in-class participation. This finding suggests that cynicism is more likely to predict students' silent behaviors but is not a predictor of students' oral behaviors. Perhaps students choose to participate in class regardless of their level of cynicism. Instructors should encourage students to participate and engage in class by asking questions, conducting engaging group activities, and providing opportunities for participation.

Limitations and Future Directions

This study is not without limitations. First, data were collected at only one time during the course of the semester. Therefore, students may feel an increased or decreased sense of burnout at the time of data collection compared to other times during the semester. It would be advantageous for future research to analyze student burnout longitudinally at various points during the semester. Perhaps students feel burned out later in the semester when many of their larger assignments are typically due. Furthermore, the constructs investigated in this study could have been enhanced with a sound theoretical perspective such as Emotional Response Theory (Mottet, Frymier, & Beebe, 2006). Emotional Response Theory predicts that students' emotional responses can be predicted by instructor communication behaviors, which directs students' approach-avoidance behaviors. A future direction of research could include exploring how student burnout in the classroom influences

students' emotional responses and their approach-avoidance behaviors with their instructors.

Another limitation of this research is that the study examines only the relationships between the variables and does not examine a causal relationship. Therefore, the assertion that burnout causes the various outcome variables cannot be assumed. This research does not take into account other classroom factors such as affect for the course and affect for the instructor. Another future direction of research regarding student burnout could be to investigate its relationships with other instructional communication variables. Specifically, investigating how student burnout affects variables such as classroom connectedness (Dwyer et al., 2004), instructor rapport (Frisby & Martin, 2010), and rapport with other students might offer insight about how outside influences affect classroom communication dynamics. Perhaps students allow burnout to negatively affect their relationships with their instructors and classmates. Show researchers continue to explore the phenomenon of student burnout, another direction of future research could be to explore the specific supportive communication messages that students hear from instructors, parents, and peers to address their experience of burnout. Perhaps when students express their experience of burnout to these various populations, the messages may appear different among the populations.

Conclusion

The concept of burnout, as it relates to undergraduate students, has been receiving increased empirical attention in interdisciplinary work. However, undergraduate student burnout would be a fruitful area of research for communication studies scholars as they could examine the communicative antecedents and outcomes. Recognizing their students' levels of exhaustion, cynicism and self-efficacy can assist instructors in better understanding the experiences of their students and how their experiences influence their in-class communication behaviors.

References

Bolkan, S., & Griffin, D. J. (2018). Catch and hold: Instructional interventions and their differential impact on student interest, attention, and autonomous motivation. *Communication Education, 67*, 269-286. doi:10.1080/03634523.2018.1465193

Borzea, D., & Goodboy, A. K. (2016). When instructors self-disclose but misbehave: Conditional effects on student engagement and interest. *Communication Studies, 67*, 548-566. doi:10.1080/10510974.2016.1212912

Cohen, M. (1991). Making class participation a reality. *PS: Political Science & Politics, 24*, 699-703. doi:10.1017/s1049096500051957

Clark, A. J., & Yeager, J. (1995). WTC and PRCA scores as indices of classroom communication participation in a high school setting. *The Florida Communication Journal, 23*, 16-23.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*, 300-314.

Cushman, S., & West, R. (2006). Precursors to college student burnout: Developing a typology of understanding. *Qualitative Research Reports in Communication, 7*, 23-31. doi:10.1080/17459430600964638

Dancer, D., & Kamvounias, P. (2005). Student involvement in assessment: A project designed to assess class participation fairly and reliably. *Assessment & Evaluation in Higher Education, 30*, 445-454. doi:10.1080/02602930500099235

Dwyer, K. K., Bingham, S. G., Carlson, R. E., Prisbell, M., Cruz, A. M., & Fuss, D. A. (2004). Communication and connectedness in the classroom: Development of the Connected Classroom Climate Inventory. *Communication Research Reports, 21*, 264-272. doi:10.1080/08824090409359988

Fassinger, P. A. (1995). Professors' and students' perceptions of why students participate in class. *Teaching Sociology, 24*, 25-33. doi:10.2307/1318895

Finn, A. N., & Schrodt, P. (2016). Teacher discussion facilitation: A new measure and its associations with students' perceived understanding, interest, and engagement. *Communication Education, 65*, 445-462. doi:10.1080/03634523.2016.1202997

Freudenberger, H. J. (1974). Staff burnout. *Journal of Social Issues, 30*, 159-165. doi:10.1111/j.1540-4560.1974.tb00706.x

Frisby, B. N., & Martin, M. M. (2010). Instructor-student and student-student rapport in the classroom. *Communication Education, 59*, 146-164. doi:10.1080/03634520903564362

Frymier, A. B., & Houser, M. L. (2016). The role of student participation in oral engagement. *Communication Education, 65*, 83-104. doi:10.1080/03634523.2015.1066019

Goldman, Z. W., Cranmer, G. A., Sollitto, M., Labelle, S., & Lancaster, A. L. (2016). What do college students want? A prioritization of instructional behaviors and characteristics. *Communication Education, 66*, 280-298. doi:10.1080/03634523.2016.1235135

Goodboy, A. K., Booth-Butterfield, M., Bolkan, S., & Griffin, D. J. (2015). The role of instructor humor and students' educational orientations in student learning, extra effort, participation, and out-of-class communication. *Communication Quarterly, 63*, 44-61. doi:10.1080/01463373.2014.965840

Goodboy, A. K., Martin, M. M., & Johnson, Z. D. (2015). The relationships between workplace bullying by graduate faculty with graduate students' burnout and organizational citizenship behaviors. *Communication Research Reports, 32*, 272-280. doi:10.1080/08824096.2015.1052904

Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A measure of college student course engagement. *The Journal of Educational Research, 98*, 184-191.

Harp, S. F., & Mayer, R. E. (1997). The role of interest in learning from scientific text and illustrations: On the distinction between emotional interest and cognitive interest. *Journal of Educational Psychology, 89*, 92-102. doi:10.1037/0022-0663.89.1.92

Hersh, R. H & Merrow, J. (Eds.). (2005). *Declining by degrees: Higher education at risk*. New York, NY: Palgrave McMillan.

Howard, J. R., & Henney, A. L. (1998). Student participation and instructor gender in the mixed-age college classroom. *The Journal of Higher Education, 69*, 384-405. doi:10.1080/00221546.1998.11775141

Jacobs, S. R., & Dodd, D. (2003). Student burnout as a function of personality, social support, and workload. *Journal of College Student Development, 44*, 291-303. doi:10.1353/csd.2003.0028

Karp, D. A., & Yoels, W. C. (1976). The college classroom: Some observations on the meanings of student participation. *Sociology and Social Research, 60*, 421-439.

Kerlinger, F. N. (1986). *Foundations of behavioral research* (3rd ed.). New York, NY:Holt, Rinehart & Winston.

Kim, B., Jee, S., Lee, J., An, S., & Lee, S. M. (2018). Relationships between social support and student burnout: A meta-analytic approach. *Stress Health, 34*, 127-134. doi:10.1002/smi.2771

Kuh, G. D. (2009). The National Survey of Student Engagement: Conceptual and empirical foundations. In R. Gonyea & G. Kuh (Eds.), *Using student engagement data in institutional research* (New Directions for Institutional Research Series, no. 141, pp. 5-20). San Francisco: Jossey-Bass.

Lin, S. H., & Huang, Y. C. (2012). Investigating the relationships between loneliness and learning burnout. *Active Learning in Higher Education, 13*, 231-243. doi:10.1177/1469787412452983

Linvill, D. (2014). Student interest and engagement in the classroom: Relationships with student personality and developmental variables. *Southern Communication Journal, 79*, 201-214. doi:10.1080/1041794X.2014.884156

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior, 2*, 99-113. doi:10.1002/job.4030020205

Maslach, C., Jackson, S. E., & Leiter, M. (1996). *Maslach Burnout Inventory: Test manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Mazer, J. P. (2012). Development and validation of the student interest and engagement scales. *Communication Methods and Measures, 6*, 99-125. doi:10.1080/19312458.2012.679244

Mazer, J. P. (2013a). Associations among teacher communication behaviors, student interest, and engagement: A validity test. *Communication Education, 62*, 86-96. doi:10.1080/03634523.2012.731513

Mazer, J. P. (2013b). Student emotional and cognitive interest as mediators of teacher communication behaviors and student engagement: An examination of direct and interaction effects. *Communication Education, 62*, 253-277. doi:10.1080/03634523.2013.777752

Mazer, J. P. (2017). Associations among classroom emotional processes, student interest, and engagement: A convergent validity test. *Communication Education, 66*, 350-360. doi:10.1080/03634523.2016.1265134

McCarthy, M., Pretty, G. M., & Catano, V. (1990). Psychological sense of community and burnout. *Journal of College Student Development, 31*, 211-216.

Morrison, T. L., & Thomas, M. D. (1975). Self-esteem and classroom participation. *The Journal of Educational Research, 68*, 374-377.

Mottet, T. P., Frymier, A. B., & Beebe, S. A. (2006). Theorizing about instructional communication. In T. P. Mottet, V. P. Richmond, & J. C. McCroskey (Eds.), *Handbook of instructional communication: Rhetorical and relational perspectives* (pp. 255-282). Boston, MA: Allyn & Bacon.

Myers, S. A. (2010). Using the Perry Scheme to explore college student classroom participation. *Communication Research Reports, 27*, 123-130. doi:10.1080/08824091003738016

Myers, S. A., Goldman, Z. W., Atkinson, J., Ball, H., Carton, S. T., Tindage, M. F., & Anderson, A. O. (2016). Student civility in the college classroom: Exploring student use and effects of classroom citizenship behavior. *Communication Education, 65*, 64-82. doi:10.1080/03634523.2015.1061197

Myers, S. A., Martin, M. M., & Mottet, T. P. (2002). Students' motives for communicating with their instructors: Considering instructor socio-communicative style, student socio-communicative orientation, and student gender. *Communication Education, 51*, 121-133. doi:10.1080/03634520216511

National Center for Educational Statistics. (2016). *The condition of education*. Retrieved from http://nces.ed.gov/programs/coe.

Plax, T. G., Kearney, P., McCroskey, J. C., & Richmond, V. P. (1986). Power in the classroom VI: Verbal control strategies, nonverbal immediacy and affective learning. *Communication Education, 35*, 43-55. doi:10.1080/03634528609388318

Rocca, K. A. (2010). Student participation in the college classroom: An extended multidisciplinary literature review. *Communication Education, 59*, 185-213. doi:10.1080/03634520903505936

Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology, 33*, 464-481. doi:10.1177/0022022102033005003

Stoeber, J., Childs, J. H., Hayward, J. A., & Feast, A. R. (2011). Passion and motivation for studying: Predicting academic engagement and burnout in university students. *Educational Psychology, 31*, 513-528. doi:10.1080/01443410.2011.570251

Stoliker, B. E., & Lafreniere, K. D. (2015). The influence of perceived stress, loneliness, and learning burnout on university students' educational experience. *College Student Journal, 49*, 146-160.

Titsworth, B. S. (2001). Immediate and delayed effects of interest cues and engagement cues on students' affective learning. *Communication Studies, 52*, 169-180. doi:10.1080/10510970109388552

Trice, A. D., Ogden, E. P., Stevens, W., & Booth, A. (1987). Concurrent validity of the academic locus of control scale. *Educational and Psychological Measurement, 47*, 483-486. doi:10.1177/0013164487472022

Weaver, R. R., & Qi, J. (2005). Classroom organization and participation: College students' perceptions. *The Journal of Higher Education, 76*, 570-601. doi:10.1080/00221546.2005.11772299

Weber, K. (2003). The relationship of interest to internal and external motivation. *Communication Research Reports, 20*, 376–383. doi:10.1080/08824090309388837

Weber, K. (2004). The relationship between student interest and teacher's use of behavior alteration techniques. *Communication Research Reports, 21*, 428-436. doi:10.1080/08824090409360007

West, R. W., & Pearson, J. C. (1994). Antecedent and consequent conditions of student questioning: An analysis of classroom discourse across the university. *Communication Education, 43*, 299-311. doi:10.1080/03634529409378988

Gossip via Text Message: Motivation for Using Text Messaging to Share Gossip

Samantha Quinn

Gossip is common in human communication as individuals are constantly sharing information with and about others. Yet, how we gossip to share information in a technologically advanced world is ever-changing. The present study takes a novel approach to studying gossip by focusing on gossip taking place via text messaging (short message service; SMS), namely, examining individuals' experiences and motivations for sharing gossip over SMS. Little research exists on gossiping via SMS. Using a functional approach and an online questionnaire the study investigated motivations for and functions of gossip over text message. Additionally, the impact of gossiping via SMS on the quality of the relationships is considered. Findings suggest most individuals conceptualize gossip as a common communication event, that is not necessarily positive or negative, yet involves sharing information about someone without their knowledge. Findings demonstrate that individuals share gossip via SMS because of the ease, convenience, and accessibility of the technology. Additionally, users are likely to gossip about a friend's behavior and use gossip as a form of connection and emotional expression. Implications and directions for future research are discussed.

Introduction

"Did you hear what happened? As social beings, humans communicate to create connections and a sense of belonging with others. Our social interactions are shaped by our moral concerns (Hitlin & Vaisey, 2010). In other words, how we engage with one another shapes our reasoning, reactions, judgements, and gives us a sense of what is right and wrong (Hitlin & Vaisey, 2010). Gossip is a common occurrence in interpersonal communication revealing our judgements of others. Foster (2004) defines gossip as, "in a context of congeniality, the exchange of personal information (positive or negative) in an evaluative way (positive or negative) about absent third parties" (p. 83). Gossip plays an important role in delineating group boundaries and maintaining social cohesion (Dunbar, 2006; Gluckman, 1963). The present study investigates gossip as it occurs over text message, the function that gossiping via SMS serves, and its impact on interpersonal relationships.

New communication technologies, such as smartphones and social networking websites (SNS), have increased the ways individuals share gossip (Ellwardt, 2019). Interacting parties do not have to occupy the same time and space to share information. The aim of the study is to examine individuals' use of SMS to share gossip. Scant research investigates gossip shared in this manner. Gaining a better understanding of what drives people to gossip via SMS will help scholars understand current communication trends and

the effect of technological advances on human communication. Additionally, findings will give researchers a better understanding of how peer groups function in a virtual space, perhaps regarding issues such as group boundaries, privacy concerns and social cohesion. By discovering what motivates individuals to gossip via text, we can better acknowledge their communication needs and educate media savvy users on effective communication techniques when using SMS. Theoretically, the functional perspective allows for an investigation of the motivations for using SMS to share gossip. As an exploratory study, a basic understanding is needed to create a conceptual model of this communication phenomenon. Research provides an understanding of gossip in general, but not as it occurs over SMS. The saliency of the current investigation is evident in the gap in the research, leaving the question of why people gossip over SMS and its effect on their interactions and relationships unanswered.

Past research on communication via cell phones has focused on expectancy violations (Kelly, Miller-Ott & Duran, 2017; Miller-Ott & Kelley, 2015), cyberbullying (Abeele & de Cock, 2013), sexting (Drouin & Landgraff, 2012; Drouin, Vogal, Surbey & Stills, 2013), group text messaging (Farnham & Keyani, 2006), and the social nature of texting (Harrison & Gilmore, 2012; Holtgraves, 2011; McDonald, Putallaz & Grimes, 2007). A clear void exists regarding gossiping via communication technologies, namely, SMS. Perhaps, gossip via SMS functions differently in interpersonal relationships, creating unique advantages and challenges for the maintenance of such relationships. The following literature review defines and explores key concepts related to text messaging as a primary form of interpersonal communication, the motivations and functions of gossip, and gossiping via SMS.

Literature Review

Gossip

Gossip is a universal component of human communication and stands as a complex communication phenomenon (Brown, 1991) and much debate surrounds accurately defining gossip (Gabriels & De Backer, 2016). Despite its prevalence, gossip has a negative connotation, adding to the confusion over its definition. Gossip is often seen as a self-serving behavior aimed at manipulating others and is condemned by many societies (Beersma & Van Kleef, 2012). Recent research argues for a more positive view of gossip, claiming its importance in social functioning (Beersma, Van Kleef, & Dijkstra, 2019; Dunbar, 2004) As previously mentioned, Foster (2004) created a comprehensive definition of gossip as the exchange of personal information in an evaluative way about third parties that are not present. Defining and examining gossip occurring via SMS is useful

in understanding additional channels through which gossip occurs and why individuals chose certain media to share gossip.

Debate also exists about who and/or what is the subject of gossip. Some researchers do not believe people who are unfamiliar to us (e.g. celebrities) can be the subject of gossip. However, Ben-Ze've and Goodman (1994) argues that the objects of gossip fall into three groups: (a) people in our immediate surroundings, (b) famous people, and (c) people whose intimate and personal lives are distinctive or differ from typical human behavior. The aim of the study is to understand the purpose and function of gossip via SMS within interpersonal relationships, thus focusing on individuals gossiping about a friend, acquaintance or coworker rather than someone they do not know personally. Based on groups designated by Ben-Ze've and Goodman (1994), the present study will focus solely on the people in an individual's immediate surroundings.

Not all talk about other people constitutes gossip; gossip deals specifically with discrepancies (Gabriels & De Backer, 2016; Hannerz, 1967). In other words, gossip occurs when a person behaves differently from how they usually behave (Gabriels & De Backer, 2016). When an individual behaves out of the ordinary, the deviant behaviors become more noticeable to those close to them. For example, if a person who normally dresses conservatively comes to work wearing a revealing or extravagant outfit, the individual is likely to be talked about by their coworkers. The comments that make an evaluation about the person's outfit are considered gossip. The distinction between gossip and everyday talk is key for the present study, as the misunderstanding about what constitutes gossip plays directly into gossip's negative reputation. Though gossip involves making an evaluation about another's behavior, it does not mean the evaluation is a negative one. Shedding light on the distinction between gossip and everyday talk provides a better understanding of gossip as a communication event.

Finally, researchers and practitioners must understand what motivates individuals to talk about others in their absence and potential implications to better understand and promote constructive human communication. People are motivated to gossip for a variety of reasons: to share information, group cohesion and protection, entertainment, and the manipulation of reputations (Foster, 2004). Some argue gossip evolved as a tool for controlling free-riders or those who take advantage of being the member of a group (Dunbar, 2004). In other words, gossip is a prosocial act used for gathering and sharing reputational information about others with group members and is a technique for protecting the group (Feinberg, Willer, Stellar & Keltner, 2012; Beersma & Van Kleef, 2012). Additionally, gossip can serve as a tool for social bonding because it strengthens the relationships between both friends and strangers (Dunbar, 2004,

McAndrew, 2019). People relate and bond over the sharing or disclosing of information. The act of gossiping about others also serves as entertainment, providing satisfaction and amusement (Beersma & Van Kleef, 2012; Lyons & Hughes, 2015). Although gossip is not necessarily destructive communication, gossip can become malicious. False information can be used to bully, isolate, and ostracize third parties (McAndrews, 2014). Past research on the motivations for gossip mainly focus on face-to-face (FtF) gossip, therefore, a few questions remain, why do individuals gossip via SMS? What purpose does sharing gossip via text message serve? What impact does gossip via text messaging have on relationships?

Technology in Relationships

Technology, namely computer-mediated communication (CMC), permeates interpersonal relationships and acts as an integral part of how individuals communicate and relate to one another. Research demonstrates that young adults use social media in their daily lives; the use of smartphones allows for nearly constant communication with others (Birnholtz, Hancock, Smith & Reynolds, 2012). Due to CMC's asynchronicity, users are afforded more time to consider what they want to say (Walther, 1996). In short, CMC provides the ability to communicate and maintain relationships in ways that were not plausible a few decades ago. For this reason, researchers must understand how aspects of interpersonal communication translate to new communication technologies and how new technologies may alter communication and relationship maintenance. The present study assists by investigating one type of CMC (e.g. text messaging or SMS) playing a significant role in interpersonal communication.

Additionally, past research notes negative aspects of using CMC and potential negative relational impacts including spreading of rumors (Juvonen, Wang & Espinoza, 2013; Wang, Iannotti, Luk & Nansel, 2010), social anxiety (Pierce, 2009), privacy issues (Horstmanshof & Power, 2005), and interpersonal conflict (Caughlin, Basinger, & Sharabi, 2016). The current study recognizes that gossiping via SMS may have negative relational implications, therefore, individuals' perceptions of gossip and the impact on one's relationship will be considered to understand the motivations and functions of SMS for sharing gossip.

Text messaging

Mobile phones have become an extension of oneself and, thus, and integral tool for interpersonal communication. Specifically, text messaging provides individuals the opportunity to stay connected with their social network across space and time (Skierkowski & Wood, 2012). Text messaging is the use of a mobile phone to access a short-message service (SMS) to send and receive brief messages directly with other users (Horstmanshof & Power, 2005). The

availability, affordability, and popularity of mobile phones has drastically increased in the last decade, making SMS one of the primary means of communication among younger generations (Skierkowski & Wood, 2012). Beyond the traditional telephone call and text-only SMS, smartphone users can send picture messages, video chat (e.g. FaceTime, Skype, etc.), send emails, and browse social media websites, among other activities. Due to the popularity of mobile phones and SMS, gossip via SMS is likely a common occurrence.

Contradictory to earlier beliefs that CMC is less rich than FtF interactions due to the lack of nonverbal cues, recent research indicates CMC conveys subtle interpersonal information and may be more effective than FtF communication (Antheunis, Schouten, & Walther, 2019; Gunraj, Drumm-Hewitt, Dashow, Upadhyay & Klin, 2016, Walther, Van Der Heide, Ramirez, Burgoon & Peña, 2015). Specifically, text messaging allows for socially oriented communication as it mimics FtF communication due to the rapid, reciprocal exchange between the texters (Gunraj et al., 2016). Research indicates younger generations do not use socially interactive technologies, such as SMS, to develop new relationships, but instead to reinforce and strengthen already existing social bonds (Skierkowski & Wood, 2012). In comparison to other forms of CMC, SMS remains unique in that texting requires knowing the other person's phone number to have an interaction. Therefore, users are communicating with their existing social network. The fact that texting typically occurs within one's social network is relevant because the present study focuses strictly on gossip between friends.

Text Messaging and Gossip

Research exists on text messaging as a form of human communication; however, little examines the sharing of gossip via SMS. Stoup (2008) and Long (2012) published research on norms and gossip in Second Life, a virtual world (e.g. video game) created by Linden Lab in 2003 (Linden Lab, 2020); however, no empirical data was collected. Cherny (1999) examined online gossip through ethnographic fieldwork in a text-based virtual world called ElseMOO. Findings revealed a close link between gossip and moral understandings, meaning individuals gossip to check their understanding of how to behave in the online community (Cherny, 1999). In an exploratory study about SMS, Faulkner and Culwin (2005) investigated the types of communicative activities done via text message. Results indicated various classifications for messages sent via SMS including, questions, instructions, reminders, jokes, and gossip, among others (Faulkner & Culwin, 2005). Results indicated that gossip is occurring via SMS but did not go further than a simple classification.

Bailey, Schroeder and Sims (2015) investigated unsafe and socially problematic texting habits to understand who is more likely to engage in such practices and what underlying personality traits might drive these behaviors. Results indicated that certain texting behaviors are inversely related to an individual's need for cognition (e.g. the extent to which a person enjoys and engages in thinking; Bailey et al., 2015). In other words, those who engage in more cognitive processing are less likely to gossip or insult someone via SMS (Bailey et al., 2015). Such findings suggest individuals with a low need for cognition may engage in socially problematic behaviors without considering the consequences and may experience social ramifications such as interpersonal tension in a group setting at school or in the workplace (Bailey et al., 2015). The results provide significant insight for the present study, highlighting that gossiping via text may simply be an act individuals engage in without fully considering potential negative consequences, which may play into society's view of gossip as a harmful communicative event. Further research is needed to determine motivations for gossiping via SMS and how gossip functions in interpersonal relationships.

Communication technologies have fundamentally changed how individuals communicate, allowing constant connectivity across space and time. Past research demonstrates that we rely on the ease and convenience of our cellular phones to stay connected, cultivate social bonds, and share information. As communication technologies have become an integral part of our daily lives, so is gossip. Due to the lack of research on gossip via SMS, the following research questions are asked to determine if and how individuals use text messaging to share gossip.

RQ1: How do individuals use text messaging to gossip about a friend?

RQ2: Under what circumstances do individuals gossip via text message?

A Functional Approach

The present study uses a functional approach as a sensitizing concept through which to view and understand the use of SMS to share gossip. The approach focuses on the motivations and reasons individuals communicate and behave in particular ways. What function(s) does the behavior serve in our interpersonal relationships? For example, a functional approach to nonverbal communication looks at what specific nonverbal communication behaviors do; what purpose do the behaviors serve? What are the behaviors attempting to communicate? The functional approach is applicable to the use of SMS in interpersonal relationships as well. Individuals use text messaging as a communication tool; therefore, SMS serves a specific purpose or function.

Research using a functional approach to study gossip argues that gossip exists as a group-level phenomenon and one of the main functions of gossip is to protect the group against those who violate or do not live up to group norms. Gluckman (1963) proposed that the threat of group members gossiping about someone if that person does not abide by group norms is enough to keep members' behavior in check. As previously noted, gossip serves as a mechanism ensuring behaviors adheres to social norms and, therefore, promotes common good (Keltner, Van Kleef, Chen, & Kraus, 2008; Wilson, Wilczynski, Wells, & Weiser, 2000). Despite such claims, skepticism about the function of gossip exists. Paine (1967) argued that group-level functional analysis is problematic as it is not the group, but the individuals who comprise the group, who are doing the gossiping. Therefore, to gain a thorough understanding of gossip researchers should investigate the individual motives of gossipers. Perhaps SMS gossip holds specific functions unique to group or interpersonal communication.

Based on past research and the lack of empirical studies on the function of gossip via text, the following research questions seek to determine what motivates individuals to gossip via SMS and how gossiping via text functions in individuals' relationships.

RQ3: Why do individuals text gossip rather than share it face-to-face?

RQ4: What motivates individuals to use text messaging to gossip about a friend?

RQ5: How does gossip via SMS impact the quality of interpersonal relationships?

Method

Participants

For the study, I recruited participants who met the following criteria: (a) at least 18 years old, (b) English speaking, (c) and used text messaging as an integral part of their communication with friends. The sample included 233 participants, 68.2% identified as female (n = 159) and 31.7% identified as male (n = 74). Participants ranged in age from 18-53 years old, with an average age of 23.3 years. Additionally, respondents were asked their race or ethnicity; 79.4% of participants identified as Caucasian or White (n = 185), 6.8% identified as Hispanic or Latino (n = 16), 6% identified as African American or Black (n = 14), 6% identified as Asian or Indian (n = 14), and 1.8% of respondents reported "Other" or chose not to identify (n = 4). Of the 233 participants, 70.8% (n = 165) were graduate or undergraduate students, 11.6% were non-students, employed full-time (n = 27), 14.2% identified as non-students, employed part-time (n = 33), and 0.03% of participants identified as non-students, unemployed or other (n = 8).

Procedure

Participants were recruited from undergraduate communication courses at a large Midwestern university, as well as through network sampling from my online social networks and special interest pages on Reddit.com (i.e. subreddits). Recruitment messages were distributed by email to communication instructors who agreed to award extra credit to student participants. Then, instructors emailed the recruitment message to their students. The recruitment message included information about the study, eligibility requirements, and a link to the online questionnaire. I also posted the recruitment message on my personal Facebook and Twitter accounts, calling for participants and inviting friends to share the recruitment message with their online social networks. Finally, subreddits were utilized to recruit participants. The subreddits were discussion forums on gossiping, spreading rumors, and text messaging. Online communities, such as Reddit, invite people identifying as a member of a certain community or who are interested in a specific topic into a virtual safe space for interacting, asking questions, sharing information, and so on. Thus, by posting to topic-specific subreddits I could reach individuals who gossiped via SMS. My recruitment method sampled from three significantly different populations, making repeat participants highly unlikely.

Data was collected through an online questionnaire containing both closed- and open-ended questions regarding participants' use of text messaging to communicate with friends, including when and why they use text messaging to gossip (See Appendix). The survey began with a virtual informed consent page, after which participants were instructed to answer the survey questions to the best of their ability. Respondents could skip any question or leave the study at any time. Data collection occurred over a two-week period; due to the asynchronous nature of completing an online survey, participants responded at their convenience. All procedures were approved by the university's Institutional Review Board.

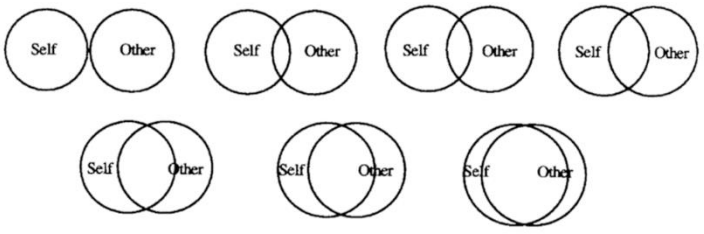
The first set of open- and closed-ended questions was used to gauge participants' conceptualization of gossip, asking each participant to define the term "gossip" in their own words. Next, individuals were asked if they had ever gossiped about a friend. The second set of questions asked participants to disclose if they have ever gossiped about a friend by sending a text message. If the response to the previous question was "yes," participants were asked what they gossiped to that friend about, who the friend was that they shared the gossip with, and their reason(s) for gossiping. Third, participants were asked about their perceptions of sharing gossip via text message. This section included questions asking if the participant had ever been gossiped about, how it made them feel and the impact

it had on their relationship with the person that gossiped about them. Demographic questions were asked at the end of the questionnaire.

In addition to the survey questions, participants were asked to assess the closeness of their relationships with the individuals they gossiped with and gossiped about using the Inclusion of the Other in the Self (IOS) Scale (see Figure).

Figure

Please circle the picture below which best describes your relationship



Inclusion of the Other in the Self (IOS) measure (Aron et al., 1992). The pair of circles represents the participant and a designated other person. The overlap, or lack thereof, for each pair of circles represents the closeness of the relationship between the participant and a designated other person.

IOS is primarily used in social psychology and is a single-item, pictorial measure of perceived emotional closeness between individuals (Aron, Aron, & Smollan, 1992). The scale typically assesses the closeness in romantic relationships but has been applied to a variety of non-romantic interpersonal relationships (Li, Zhang, Bhatt, & Yum, 2006). IOS was used to help determine the impact of gossiping via text message on interpersonal relationships.

Data Analysis

Thematic analysis was performed to identify and analyze the patterns or themes found within the data set regarding each research question (Creswell, 2007; Saldaña, 2009). Within the first cycle of coding, an initial reading was performed to become familiar with the data and to begin making notes about major topics. The initial coding allowed for the use of descriptive and in-vivo coding to begin to tease out reoccurring themes (Saldaña, 2009). Descriptive coding assigns labels to the data to summarize responses in a word or short phrase, while in-vivo coding uses words or short phrases from the participant's own language in the development of codes (Saldaña, 2009). Both coding methods are salient as the research questions and questionnaire inquired about the participant's perceptions and experiences; attention to participant-specific language can highlight how individuals understand gossip in relation to their lives and relationships. Additionally, the survey asked participants to provide

their own definition of gossip and in-vivo coding upheld the integrity of the participants' language use.

Next, I examined the data a second time, allowing for any additional topics to emerge and to create a running tally of how many times each general topic occurred. Doing so allowed me to clearly determine what specific terms were expressed most frequently. Finally, during a third cycle of coding, major topic areas were sorted by similarity to begin to generate themes. Once prominent themes emerged, each was defined using common participant language regarding their experiences and motivations for gossiping via SMS. Each of the themes obtained through the thematic analysis is explored in detail, followed by discussion and implications.

Findings

The beginning of the online questionnaire asked participants to define, in their own words, gossip. The purpose was to orient participants to the topic and focus of the study. The following discusses the themes uncovered for each research question, as well as the findings regarding relational quality and the IOS measure.

Text Message Gossip

Research questions 1 and 2 asked how individuals use SMS to gossip about a friend, acquaintance or coworker and under what circumstances the gossip occurs. Eighty-eight percent of participants (n = 205) reported they had gossiped about a friend via text message. The online questionnaire asked respondents to recall the most recent time they gossiped about a friend by sending a text message. Participants reported the gossip was typically about an individual's behavior. Three main themes emerged regarding individual's behavior including poor judgement, misconduct, and unreliability.

Poor Judgement

Theme one was poor judgment exhibited by the subject or target of the gossip. Poor judgement behaviors were based on the perception of the gossiper and the events gossiped about ranged in severity. Behaviors included issues regarding living situations, money management, incidents of infidelity, and divorce, among others. One respondent shared,

> The topic was about our third roommate and why he was going home this weekend. He was telling me it was because he is running out of money to pay rent and pay other expenses. We talked about how he isn't smart with his money in the first place so we didn't really feel bad for him.

Another participant stated, "My friend who is being divorced. It was about how much of a knucklehead he is being and should not try to back out of the marriage so soon." Additionally, another participant shared, "The gossip was about a mutual female friend who recently made poor decisions that included alcohol and poor drinking habits." In many cases respondents made a general statement about the

subject's behavior. One participant put it simply, "The gossip was about a friend who had made poor decisions in a previous night."

Misconduct

Theme two was misconduct, specifically, the poor treatment of the participant and mutual friends. Misconduct included behaviors such as being rude, disrespectful, unexpected personality changes, and intentionally excluding others. In other words, participants admitted gossiping about someone who behaved poorly. One participant stated, "My buddy, and how he ditched us at the bar for other people." Another participant shared, "The gossip was to one friend about our mutual friend who we are having problems with. The gossip was about how she was being disrespectful to us." Another respondent stated, "It was about a friend that was being extremely rude towards me for no apparent reason. When I asked him if he could do me a favor he told me that he doesn't really do favors anymore." Similar to theme one, some participants shared a general statement about the misconduct or poor treatment they were experiencing. For example, one participant shared, "The gossip entailed a close friend of mine who was treating me poorly due to relationship choices, and I was discussing how I felt and how she was treating me to a separate close friend."

Unreliability

The third and final theme was unreliability. The theme included not completing duties, tasks, and responsibilities in one's personal or professional life. Participants reported gossiping about friends, roommates, and coworkers who were not doing chores, helping around the house, completing job duties in a timely manner, as well as overall poor job performance. One participant shared, "One of my roommates, it was about how annoyed I was with her not doing the dishes/cleaning up her mess." Another respondent stated, "Talking to a friend about how this person did on a presentation, generally how this person is doing at work, frustrations about this person riding everyone's coat tails." Finally, one expressed that they do not typically gossip but, "…recently I sent a message to a co-worker about another co-worker who didn't do their job."

But, Why?

Research questions 3 and 4 asked why individuals specifically use SMS to gossip and reasons for gossiping via text message instead of sharing the information FtF. Nearly 73% of participants (n = 169) reported using SMS to share gossip because texting is the easiest and quickest way to communicate with friends. Participants commented that texting is convenient, and their cell phone is always easily accessible. Responses highlighted that they enjoy texting over FtF communication because of the constant contact with friends, even when users are in class or at work, are geographically separated, or simply do not want to talk on the phone or FtF.

Research question 4 asked why individuals gossip through text messaging. First, respondents were asked who they gossiped about and why they gossiped about that person. Four main themes emerged and reflected how gossip functions in participants' lives and relationships. Themes included: emotional outlet, feedback, create connection, and to give notice. The following unpacks each theme and provides salient examples from the participant responses.

Emotional Outlet

The most prominent theme was gossiping as an emotional outlet. Many respondents reported gossiping via text because they were angry, frustrated, annoyed, concerned, worried, or needed "to vent" or "blow off steam." Participants typically experienced these emotions in reaction to the behavior of the subject of the gossip. For instance, one participant stated, "I gossiped about this person because I was upset with their actions. I gossiped to feel better." Another respondent said, "The gossip occurred because her actions were hurtful and embarrassing to us as her friends. Her poor actions have negatively impacted our friendship with her, and we discussed the reasoning behind it." Another participant shared, "It has gotten to the point that it is a daily reoccurrence and it makes the rest of the girls I live with very aggravated." Other respondents expressed their reasoning more concisely, saying, "I needed to vent" and "Because they were annoying me."

Feedback

The second theme and function for gossiping via text was to receive feedback. In other words, individuals gossiped to get feedback or to seek input from another person. Participants expressed sharing gossip because they wanted to get another person's opinion on the situation and needed assistance in deciding what to do or how to deal with the information. One participant shared that the reason they gossiped was "to see what we both thought about it and give our opinions about it." Another respondent expressed, "I wanted to get the opinion of another close friend because if I can put myself in a position to help the first friend I want to but I do not want to overstep my boundaries." Another participant stated that they gossiped "to share info to see if we could figure out what was going on with our friend's private life based on what the other person thought was happening." Finally, one responded gossiped "Because I wanted to talk something through with my friend to see if I was being paranoid or not."

Create Connection

Gossiping as a strategy for creating a connection with another person constituted the third theme. Participants reported sharing gossip with someone who had a similar experience or could relate to what participants were going through. Some individuals felt that sharing the information with the other person brought them closer

together. For example, one participant expressed, “I was half expressing my concern to the friend and also bonding over our shared observation.” Another respondent shared, “I gossiped about this person because between the three of us, it is something that we are all involved in and is a common topic of conversation lately.” Another participant stated, “So I could know that others felt the same way as me.” Finally, one responded wanted to talk to the individual they gossiped about but could not, instead the individual used it as an opportunity to connect with others. The participant shared, “She is too immature to talk about it with me so I talk to other people about it and talk through my problems.”

To Give Notice

The fourth and final theme regarding the motivations for and functions of gossiping via SMS was giving notice. In other words, the participant gossiped via text to give the receiver information that was important or significant to that person; the topic of the gossip directly affected the receiver. One participant stated, “I wanted my best friend to be aware that the guy she likes might be talking to a girl. Naturally, I assumed she would want to know.” Another respondent shared:

> The person that I sent it to is a mutual friend and we've had ongoing issues relating to infidelity for several years. I wanted to give her a heads up that something may be happening again and to see if the person involved needed any support. She is married and discussing separation.

Impact of Gossip on Interpersonal Relationships

Finally, I investigated the impact of gossip via SMS on interpersonal relationships in RQ5. Four questions asked respondents to gauge the closeness of their relationships with the person they gossiped with and the person they gossiped about and reflect on how gossiping affected their relationship with each person. The IOS measure was used to determine relationship closeness (Aron et al., 1992; See Figure). The pair of circles represents the participant and a designated other person (i.e. person they gossiped with or person they gossiped about). The overlap, or lack thereof, for each pair of circles represents the closeness of the relationship between the participant and the designated other person. Of the participants that responded to this set of questions, 80% percent of participants (n = 155) reported a close or very close relationship (circles 4-7) with the person they shared the gossip with, while 20% (n = 39) rated the relationship between not close to somewhat close (circles 1-3). Additionally, respondents indicated that sharing gossip either had no effect or a positive effect on their relationship with that person. Participants were then asked to reflect on their relationship with the person they gossiped about. Forty-eight percent of participants (n = 93) rated the relationship as close to very close, while 52% of respondents (n =

101) rated the relationship between not close to somewhat close (circles 1-3), while. Participants reported that gossiping about this person had no effect on their relationship; in most cases the person did not know they had been gossiped about. Finally, respondents reflected on a time they had been gossiped about and assessed the impact learning about the gossip had on their relationship with the gossiper. Of the participants that responded, 12.9% stated that the gossip very negatively affected the relationship (n = 30), 26.2% reported a negative effect (n = 61), 26.2% reported no effect (n = 61), 0.9% reported a positive effect (n = 2), and 0.4% reported a very positive effect on the relationship (n = 1).

Discussion

The present study investigated individuals' experiences and motivations for gossiping over text message. A thematic analysis uncovered themes regarding how participants conceptualize gossip, individuals' experiences sharing gossip, and the motivations for or functions of sharing gossip via text message. The study used a functional approach as a sensitizing concept through which to view and analyze the data. The following discusses the study's findings in relation to past research and implications for future inquiry.

Research questions 1 and 2 asked how and under what circumstances individuals use SMS to gossip about a friend. Most participants admitted gossiping via text. The questionnaire asked respondents to recall the most recent time they gossiped by sending a text. Overwhelmingly, participants reported the gossip was about someone's behavior and the themes of poor judgement, misconduct, and unreliability emerged. The findings of the present study align with the research of Gabriels and De Backer (2016) who argued that gossip occurs when a person behaves differently from how they usually behave. When an individual acts out of the ordinary their behavior become more noticeable to those they have close relationships with. In turn, individuals discuss such discrepancies with others to make meaning of the situation. Further, according to Foster (2004), people are motivated to gossip to share information, group cohesion and protection, entertainment, and the manipulation of reputations. Participants responses clearly reflect the notion of group cohesion and protection as they gossiped about behaviors that could threaten the well-being of their peer group, such as being untrustworthy or irresponsible. The findings are significant in demonstrating the similarities between gossip via text and gossip via FtF communication. Regarding the circumstances under which individuals' gossip, results are consistent between the two modes of communication. Perhaps the fundamental components of gossip remain the same, regardless of the channel used to share the information.

Research questions 3 and 4 asked why individuals use text messaging to gossip about the people in their life and motivations for gossiping via text instead of FtF. The majority of participants reported using SMS to share gossip because texting is an easy way to communicate. Respondents commented that texting is convenient, and their phone is constantly easily accessible. Participants responses demonstrated they enjoy texting over FtF communication because they can stay in constant contact with friends regardless of their circumstances. Additionally, the data revealed that gossip via text holds important functions in interpersonal relationships, including functioning as an emotional outlet, a method for seeking feedback, to create connections with others, and to share information. Such findings are significant as supporting evidence for a comprehensive definition of gossip. Gossip is not simply something individuals do for entertainment or to intentionally harm others; gossip serves an essential role in self-expression and in the maintenance of relationships. As argued by Dunbar (2004), gossip strengthens the intimacy of social bonds. Text messaging has merely made this type of communication simpler. A recent study on texting and romantic relationships highlights how texting can be used as a relationship maintenance strategy with the potential to increase relational satisfaction and closeness (McEwan & Dakota, 2016). The results of my study reflect both those of Dunbar (2004) and McEwan and Dakota (2016), demonstrating the social connection that can be formed through gossip. Furthermore, the present findings align with Paine's (1967) argument that group-level analysis is problematic because it is individuals who are doing the gossiping, the present study highlights the individual motives of gossipers. Themes such as gossip as an emotional outlet and creating connections, directly address individual needs and highlight the importance of viewing gossip as both a group-level and individual-level phenomenon.

Finally, research question 5 investigated the impact of gossip via text on interpersonal relationships. Overall, participants reported that whether they were gossiping with a friend or about a friend, the gossip did not significantly affect the relationship. Friend-on-friend gossip is often not intended to harm but to maintain the relationship or address an area of concern in the relationship. The data supports this notion as participants expressed worry or concern regarding a friend's behavior or poor decision making. However, because gossip and rumors are often conflated, individuals may lack the understanding that gossip, in many cases, is not meant to harm. From a practical perspective, scholars and practitioners should work to reframe gossip as a positive, or not negative, communication event by highlighting the healthy aspects of gossip such as emotional expression, concern for others, and social bonding (Dunbar, 2004).

Another issue for consideration is the instantaneous nature of sharing gossip via SMS. Arguably, gossip shared in a text message travels faster and may have quicker implications or consequences than gossip shared Ftf. Future research should investigate the speed, accuracy, and breadth of gossip shared via SMS. In other words, how quickly is gossip shared within a close group of individuals, how accurate is the information after it has been shared several times, and with how many close others is a piece of gossip shared? Such information could be used to determine at what point the information changes and how it impacts interpersonal relationships. Furthermore, when does a piece of gossip become a rumor? Perhaps once the gossip is shared beyond the gossiper's close social network and the content of the gossip changes significantly, it can no longer be classified as gossip. Again, such information would provide a clearer distinction and more accurate definition of gossip and rumors.

Sharing gossip via SMS may provide the gossiper with the illusion of privacy. Users may perceive that because they are not sharing the gossip in-person or verbally, it is somehow private. Additionally, sharing gossip via SMS while in the presence of the subject of the gossip may also appear more private (e.g. texting about someone in the room). Furthermore, because an individual is not gossiping in the presence of another person, they may be likely to be more intense if their intentions are malicious or jump to conclusions. Gossipers may forget that sending text messages still leaves a record or paper trail of the interaction which could lead to negative outcomes such as miscommunication, conflict, and relationship termination. A study by Debatin, Lovejoy, Horn, and Hughes (2009) supports this misconception of privacy. The study investigated Facebook users' awareness of privacy issues and perceived benefits and risks of using Facebook. Research found that Facebook is deeply integrated into individuals' daily lives and although they understand privacy issues, they still reported uploading a large amount of personal information to the SNS (Debatin et al., 2009). Results indicated that the relaxed attitude toward Facebook privacy issues may be due to a combination of high gratification, usage patterns, and the third person effect which states people expect mass media to have a greater effect on others than on themselves (Debatin et al., 2009). Perhaps the same is true for sharing gossip via SMS. Gossipers understand that texting is not private, yet the instant gratification afforded by SMS and the total integration of SMS into individuals' daily lives and communication practices override potential privacy issues. Future research should investigate texters' perceptions of privacy when sharing gossip via SMS and inquire as to what would cause them to change their communication practices.

Overall, individuals are motivated to gossip via text because it serves as a convenient method for sharing information and relating

to peers. Gossiping via SMS demonstrates similar characteristics to FtF gossip, yet the advent of new communication technologies has increased the ease and likelihood of individuals sharing gossip. Additionally, the findings highlight an individual-level perspective of gossip. However, the study does not discount gossip as a group-level phenomenon, the results simply draw attention to significant individual-level components. The present study and its findings are significant because they support the notion that new communication technologies are fully integrated into every day human communication and function as a method for social bonding, information sharing, and relationship maintenance.

Limitations and Directions for Future Research

Although the study provides valuable information regarding the functions of gossip via SMS, limitations exist. One limitation is the retrospective nature of participants' responses, as well as the focus on one instance of gossip. Because participants reflected on past experiences, their reaction and perceptions may not have been as intense as when the gossip initially occurred. Furthermore, the explanation of why individuals shared the gossip may not have been as clear in the moment. For instance, an individual might share gossip for the simply purpose of sharing and come up with a reason after the fact, thus, making the accuracy of that reason unknown. Future research employing a longitudinal study design could observe individuals through an entire gossip event. A gossip event might include learning the information about a friend, deciding to gossip or share the information with another person, and the repercussions, or lack of repercussions, of sharing the gossip. Keeping a diary of each gossip event or simply each time they gossiped with or about a friend would be an appropriate and arguably more accurate data collection method. Such information could provide richer data about individuals' experiences and motivations for gossiping via text message.

Another limitation of the study presented in the demographic information of the participants. Although participants ranged in age from 18-53 years old, most respondents were undergraduate students with an average age of 23 years old. Future studies should work to obtain a sample more representative of the general population. Additionally, future investigation should compare the experiences and motivations of individuals from different generations and/or cultures; are experiences similar or different? Additionally, does gossiping via text have different functions for different generations or cultures? Does gossiping have different functions for cultures that are more familial or collectivistic? Determining generational and cultural differences is important because it would highlight notable differences in communication styles, affording scholars and

practitioners a broader understanding of communication via new communication technologies.

The questionnaire asked participants to share the reason for choosing to gossip via text message instead of FtF. A few participants stated that they used text messaging to gossip because the person they were talking about was present. For this reason, the participant was unable to share the gossip FtF. Such a finding points to the dialectical tension between gossiping in the public or private sphere. Most FtF gossip remains public in nature, as it occurs orally and has the potential to be overheard by outsiders. However, SMS gossip allows for more privacy between communicators. Individuals can share information about others regardless of where they are or who they are with. Future research should investigate the use of text messaging to talk about a person who is present. For example, a group of friends are having lunch together and one person sends a text to another person at the table about how loudly a third friend is slurping their soup. In this example two friends are talking about a third friend in their presence but without their knowledge. Text messaging appears to be a virtual way to talk behind someone's back. Although not the primary purpose of texting, such as occurrence demonstrates how individuals adapt communication technologies to fit their needs. Additionally, researchers should examine the type of gossip shared via text about someone who is present. Is the gossip negative or ambivalent? What is the gossip about? Such findings could provide a better understanding of the many functions gossiping via text serves in human communication.

Furthermore, Petronio's (2002) Communication Privacy Management (CPM) theory may be at work regarding the private nature of gossip shared over text message. Individuals sharing gossip via SMS, in the presence of the target of the gossip, may be violating the privacy boundaries set by the target about such information. In other words, if the target of the gossip is the owner of the information, the person sharing the information is creating boundary turbulence; a failure in rule coordination between co-owners of private information (Petronio, 2002). However, does a privacy violation occur if the owner of the private information does not know the gossip is occurring? Future research should investigate gossipers perceptions of privacy for sharing gossip via text message, why they gossip via text in the presence of the person, and if gossipers fear getting "caught in the act." Perhaps those sharing gossip via text are less concerned than those who gossip in person because the gossip takes place on their own personal device. Future research would provide a better understanding of how individuals view communication done through technology, if they consider it more or less private, and potential concerns or implications of a virtual paper trail.

Conclusion

The present study examined individuals' experiences and motivations for gossiping via SMS. Additionally, the study examined the function that text messaging plays in gossip as a communication event. Why do individuals choose to gossip via text message instead of FtF? Findings suggest most individuals conceptualize gossip as a common occurrence involving sharing of information about someone without their knowledge. Individuals share gossip over SMS because of the ease, convenience, and accessibility of the technology. Furthermore, individuals are likely to gossip via text about a friend's behavior and chose to do so for emotional expression and to bond with others. The study's findings are both theoretically and practically significant. Theoretically, the study applies a functional approach to a unique context to further understand gossiping via text. A practical application of the study's findings would provide professionals greater understanding of interpersonal communication taking place over SMS and the potential for various outcomes such as emotional expression and relationship maintenance. Although not all individuals chose to gossip via text message, the results provide information about the experiences and motivations for communicating through this channel, therefore making the findings of the study transferable to real-life application and practice.

References

Abeele, M. V., & De Cock, R. (2013). Cyberbullying by mobile phone among adolescents: The role of gender and peer group status. *Communications, 38*, 107-118. doi:10.1515/commun-2013-0006

Antheunis, M. L., Schouten, A. P., & Walther, J. B. (2019). The hyperpersonal effect in online dating: effects of text-based CMC vs. videoconferencing before meeting face-to-face. *Media Psychology*, 1-20. https://doi.org/10.1080/15213269.2019.1648217

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*, 596–612.

Bailey, S. K. T., Schroeder, B. L., & Sims, V. K. (2015). Unsafe texting and socially problematic texting: Need for cognition as an underlying predictor. *Proceedings of the Human Factors and Ergonomics Society 59th Annual Meeting*, 971–975. https://doi.org/10.1177/1541931215591279

Beersma, B., & Van Kleef, G. A. (2012). Why people gossip: An empirical analysis of social motives, antecedents, and consequences. *Journal of Applied Social Psychology, 42*, 2640–2670. doi: 10.1111/j.1559-1816.2012.00956.x

Beersma, B., Van Kleef, G. A., & Dijkstra, M. T. (2019). Antecedents and consequences of gossip in work groups. *The Oxford Handbook of Gossip and Reputation*, 417.

Ben-Ze'ev, A., & Goodman, R. F. (Eds.). (1994). Good gossip (p. 15). University Press of Kansas.

Birnholtz, J., Hancock, J., Smith, M., & Reynolds, L. (2012). Understanding unavailability in a world of constant connection. *Interactions, 19*, 32-35. doi: 10.1145/2334184.2334193

Brown, D. (1991). *Human universals*. New York, NY: McGraw Hill.

Caughlin, J. P., Basinger, E. D., & Sharabi, L. L. (2016). The connections between communication technologies and relational conflict: A multiple goals and communication interdependence perspective. In J. A. Samp (Ed.), *Communicating interpersonal conflict in close relationships: Contexts, challenges and opportunities*. New York, NY: Routledge.

Cherny, L. (1999*). Conversation and community: Chat in a virtual world*. Stanford, CA: Center for the Study of Language and Information.

Creswell, J. (2007). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage Publications, Inc.

Debatin, B., Lovejoy, J. P., Horn, A., & Hughes, B. N. (2009). Facebook and online privacy: Attitudes, behaviors, and unintended consequences. *Journal of Computer-Mediated Communication, 15*, 83-108. doi: 10.1111/j.1083-6101.2009.01494.x

Dunbar, R. I. (2004). Gossip in evolutionary perspective. *Review of general psychology, 8*, 100-110.

Dunbar, R. (2006). *Grooming, gossip and the evolution of language*. London, UK: Faber & Faber.

Drouin, M., & Landgraff, C. (2012). Texting, sexting, and attachment in college students' romantic relationships. *Computers in Human Behavior, 28*, 444-449. https://doi.org/10.1016/j.chb.2011.10.015

Drouin, M., Vogal, K., N., Surbey, A., & Stills, J. R. (2013). Let's talk about sexting, baby: Computer-mediated sexual behaviors among young adults. Computers in Human Behavior, 29, A25-A30. https://doi.org/10.1016/j.chb.2012.12.030

Ellwardt, L. (2019). Gossip and reputation in social networks. *The Oxford Handbook of Gossip and Reputation*, 435.

Faulkner, X., & Culwin, F. (2005). When fingers do the talking: a study of text messaging. *Interacting with Computers, 17*, 167-185. doi:10.1016/j.intcom.2004.11.002

Farnham, S., & Keyani, P. (2006). *Swarm: Hyper awareness, micro coordination, and smart convergence through mobile group text messaging*. Proceedings of the 39th Hawaii International Conference on System Sciences.

Feinberg, M., Willer, R., Stellar, J., & Keltner, D. (2012). The virtues of gossip: Reputational information sharing as prosocial behavior. *Journal of Personality and Social Psychology, 102*, 1015–1094. http://dx.doi.org/10.1037/a0026650

Foster, E. K. (2004). Research on gossip: taxonomy, methods, and future directions. *Review of General Psychology, 8*, 78-99.

Gabriels, K., & De Backer, C. J. S. (2016). Virtual gossip: how gossip regulates moral life in virtual worlds. *Computer in Human Behavior, 63*, 683-693. http://dx.doi.org/10.1016/j.chb.2016.05.065

Gluckman, M. (1963). Gossip and scandal. *Current Anthropology, 4*, 307-315.

Gouran, D. S. (1999). Communication in groups: The emergence and evolution of a field of study. Frey, L. R., Gouran, D. S., & Poole, M. S. (Eds.), *The Handbook of Group Communication Theory & Research* (3-36). Thousand Oaks, CA: Sage.

Gunraj, D. N., Drumm-Hewitt, A. M., Dashow, E. M., Upadhyay, S. S. N., & Klin, C. M. (2016). Texting insincerely: The role of the period in text messaging. *Computer in Human Behavior, 55*, 1067-1075. http://dx.doi.org/10.1016/j.chb.2015.11.003

Hannerz, U. (1967). Gossip, networks and culture in a black American ghetto. *Ethnos, 32*, 35-60.

Hirokawa, R. Y. (1980). A comparative analysis of communication patterns within effective and ineffective decision-making groups. *Communication Monographs, 47*, 312-321.

Hirokawa, R. Y., & Salazar, A. J. (1999). Task-group communication and decision-making performance. Frey, L. R., Gouran, D. S., & Poole, M. S. (Eds.), *The Handbook of Group Communication Theory & Research* (167-191). Thousand Oaks, CA: Sage.

Hitlin, S., & Vaisey, S. (2010). Back to the future. In S. Hitlin, & S. Vaisey (Eds.), *Handbook of the sociology of morality* (pp. 3-14). New York, NY: Springer.

Holtgraves, T. (2011). Text messaging, personality, and the social context. *Journal of Research in Personality, 45*, 92-99.

Horstmanshof, L., & Power, M. R. (2005). Mobile phones, SMS, and relationships. *Australian Journal of Communication, 32*, 33-52.

Juvonen, J., Wang, Y., & Espinoza, G. (2013). Physical aggression, spreading rumors, and social prominence in early adolescence: Reciprocal effects supporting gender similarities? *Journal of Youth Adolescence, 42*, 1801-1810. doi: 10.1007/s10964-012-9894-0

Kelly, L., Miller-Ott, A. E., & Duran, R. L. (2017). Sports scores and intimate moments: An expectancy violations theory approach to partner cell phone behaviors in adult romantic relationships. *Western Journal of Communication, 81*, 619-640. https://doi.org/10.1080/10570314.2017.1299206

Keltner, D., Van Kleef, G. A., Chen, S., & Kraus, M. (2008). A reciprocal influence model of social power: Emerging principles and lines of inquiry. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 40, pp. 151–192). New York, NY: Academic Press.

Li, H., Zhang, Z., Bhatt, G., & Yum, Y. (2006). Rethinking culture and self- construal: China as a middle land. *The Journal of Social Psychology, 146*, 591–610.

Linden Lab. (2020, September). *About Linden Lab*. https://www.lindenlab.com/about

Long, L. (2012). The prospect of social norms as a governing mechanism of virtual worlds. *European Journal for Law and Technology, 3*, 1-17.

Lyons, M. T., & Hughes, S. (2015). Malicious mouths? The Dark Triad and motivations for gossip. *Personality and Individual Differences, 78*, 1-4. http://dx.doi.org/10.1016/j.paid.2015.01.009

McAndrew, F. T. (2014). The ‘‘sword of a woman’’: Gossip and female aggression. *Aggression and Violent Behavior, 19*, 196–199. http://dx.doi.org/10.1016/j.avb.2014.04.006

McAndrew, F. T. (2019). Gossip as a Social Skill. *The Oxford Handbook of Gossip and Reputation*, 173.

McDonald, K. L., Putallaz, M., Grimes, C. L., Kupersmidt, J. B., & Coie, J. D. (2007). Girl talk: Gossip, friendship, and sociometric status. *Merrill-Palmer Quarterly*, 381-411.

Miller-Ott, A., & Kelly, L. (2015). The presence of cell phones in romantic partner face-to-face interactions: An expectancy violation theory approach. *Southern Communication Journal, 80*, 253-270. https://doi.org/10.1080/1041794X.2015.1055371

Paine, R. (1967). What is gossip about? An alternative hypothesis. *Man, 2*, 272–285.

Petronio, S. (2002). *Boundaries of privacy: Dialectics of disclosure*. Albany, NY: Suny Press.

Pierce, T. (2009). Social anxiety and technology: Face-to-face communication versus technological communication among teens. *Computers in Human Behavior, 25*, 1367-1372. doi:10.1016/j.chb.2009.06.003

Saldana, J. (2009). *The Coding Manual for Qualitative Researchers*. Thousand Oaks, CA: Sage.

Skierkowski, D., & Wood, R. D. (2012). To text or not to text? The importance of texting among college-aged youth. *Computer in Human Behavior, 28*, 744-756. doi:10.1016/j.chb.2011.11.023

Stoup, P. (2008). The development and failure of social norms in second life. *Duke Law Journal, 58*, 311-344.

Sunstein, C. R. (2009). *On Rumors: how falsehoods spread, why we believe them, what can be done*. New York, NY: Farrar, Straus and Giroux.

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*, 3-43. doi:10.1177/009365096023001001

Walther, J. B., Van Der Heide, B., Ramirez, A., Burgoon, J. K., & Peña, J. (2015). Interpersonal and hyperpersonal dimensions of computer-mediated communication. *The handbook of the psychology of communication technology*, *1*, 22.

Wang, J., Iannotti, R. J., Luk, J. W., & Nansel, T. R. (2010). Co-occurrence of victimization from five subtypes of bullying: physical, verbal, social exclusion, spreading rumors, and cyber. *Journal of Pediatric Psychology, 35*, 1103-1112. doi:10.1093/jpepsy/jsq048

Wilson, D. S., Wilczynski, C., Wells, A., & Weiser, L. (2000). Gossip and other aspects of language as group-level adaptations. In C. Heyes & L. Huber (Eds.), *The evolution of cognition* (pp. 347–365). Cambridge, MA: MIT Press.

Appendix

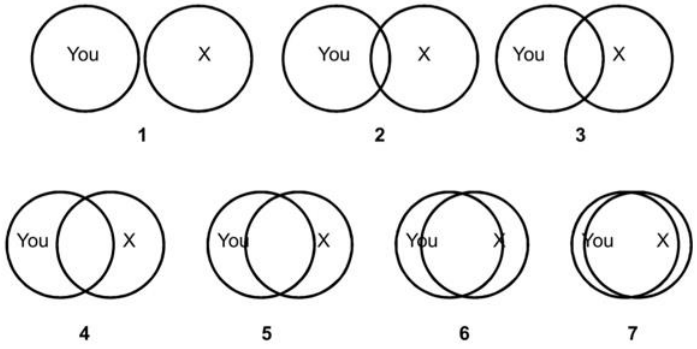
Online Questionnaire
Gossip via Text Message: Motivations for Using Text Messaging to Share Gossip

Initial Survey Questions:

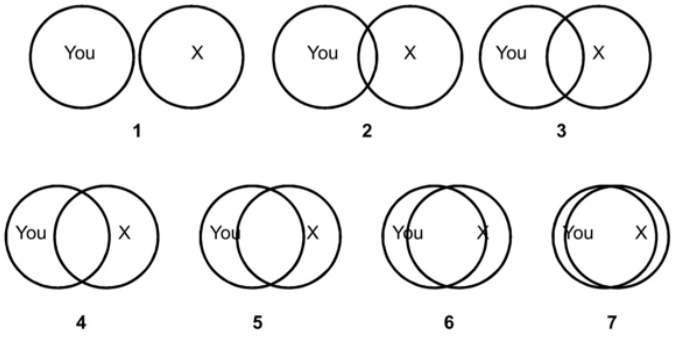
1. In your own words, what is gossip? Please define it. (text box)
2. Have you ever gossiped about a friend? (yes/no – "no" response is redirected to end of survey)

Gossip and Text Messaging:

3. Have you ever gossiped about a friend by sending a text message to another friend? (yes/no – "no" response is redirected to end of survey)
4. If so, think about the most recent time you gossiped about a friend to another friend by sending a text message. Who was the gossip about? What was the gossip about? (text box)
5. Why did you gossip about this person? (text box)
6. Who did you gossip with? How did they react to the gossip? (text box)
7. How would you describe your relationship with **the person you gossiped with**? Please indicate which pair of circles best represents your relationship with that person.



8. What kind of effect do you think gossiping with your friend had on your relationship with them, if any? Why? (text box)
9. Why did you decide to gossip by sending a text message, instead of doing it face-to-face or through another channel? (text box)
10.. How would you describe your relationship with **the person you gossiped about**? Please indicate which pair of circles best represents your relationship with that person.



11. What is the relationship between the person you gossiped with and the person you gossiped about? Do they know each other? If so, how do they know each other? (text box)
12. What kind of effect do you think gossiping about this person had on your relationship with them, if any? Why? (text box)

Perceptions of Gossip via Text:
13. What are your feelings about gossiping over text message? (text box)
14. Have you ever found out that someone gossiped about you via text message? (yes/no – "no" response is redirected to demographics section of the survey)
15. If so, who gossiped about you? How did it make you feel? What was the gossip about? (text box)
16. How did it affect your relationship with the person(s) who gossiped about you?
Very Positively, Positively, No effect, Negatively, Very Negatively

Demographics:
17. What is your age? (text box)
18. What is your gender? (text box)
19. What is your race/ethnicity? (text box)
20. What is your employment or student status? (employed full-time, employed part-time, unemployed, undergraduate student, graduate student)
21. If you are in school, what is your major or intended major? (text box)
22. What is your relationship status? (married, long-term, committed relationship, seriously dating, casually dating, single, I choose not to disclose)

"I Never Did Those Things They Said!": Image, Coercive Control, and Intrusion From Former Partners' Technology-Mediated Abuse

Katie Lever & Jessica Eckstein

The pervasive nature of the internet and social media presents new dynamics for abuse perpetrators engaging in obsessive relational intrusion practices. Drawing on Katz and Aakhus's (2002) Theory of Apparatgeist, we explore how abuse victims understand the "spirit" of technology when used against them. Victims' (N = 187) qualitative responses were analyzed to uncover meanings attributed to technology-mediated abuse after leaving their violent partners. Primary themes of harassing intrusion and coercive control were understood by participants in a number of ways – both overlapping and distinct. We discuss these findings in terms of victims' primary identity concerns related to presenting versus perceived selves.

Introduction

Because intimate partner violence (IPV) research in the U.S. began in the 1970s, increased availability of and access to interactions afforded by internet and other technologies have altered the nature of these interpersonal relationships. And, although specific platforms vary over time, online social networks remain a significant attraction. The contemporary infrastructure of mobile technologies gives users constant access to these networks as well as various other means (e.g., synchronous text messaging, emailing) of contact with others (Lepp et al., 2013).

Clearly, the pervasive nature of technology allows users – particularly those desiring constant contact – to reach receivers in ways never before possible (see Eckstein, 2020 for an exhaustive typology of current IPV technology practices). However, the point at which this ubiquitous contact crosses a line for current and former relational partners, particularly those with a violent history, remains vague. Outside of interpretations of known harassment, when a target is *un*aware of technologies being used against them, how and when does monitoring and/or regulating someone's mediated communication constitute ongoing abuse? In this study, we draw on traditional media theorizing and more current IPV constructs to ground our study of that technology usage. We then examine victims' qualitative reports of abusive, technological communication with/from former[i] abusers post-relational dissolution.

Traditional Understandings of Communication and Abusive Relationships

Who and What: Coercive, Intrusive Communication in Relational Dissolution

Who is Involved?

A plethora of research exists on negative relational dissolution practices both in married and unmarried relationships, with a large focus on how control is used during romantic relationships (e.g., Feeney & Noller, 1992; Harvey & Karpinski, 2016; Kellas et al., 2008; Lee & Sbarra, 2013; Roberts, 2005; Sahlstein & Dun, 2008; VanderDrift & Agnew, 2011). However, fewer studies in interpersonal, relational fields examine how ex-partners maintain control after the relationships ends; such work tends to be the domain of violence-based scholars (especially those focusing on coercive control and/or intrusion; Langhinrichsen-Rohling et al., 2000).

With the understanding that abuse in any form is grossly underreported, prevalence meta-analyses have shown at least 23.1% of women and 19.3% of men in global English-speaking nations alone had experienced physical violence from a romantic partner (Desmarais et al., 2012). In the U.S., over 45 million people (35.6% of all women, 28.5% of all men) will experience physical abuse from a romantic partner at least once in their lifetime (Black et al., 2011). Physical violence, psychological abuse, and coercive control often go hand-in-hand (Tanha et al., 2010), even in online contexts (Yahner et al., 2015). Further, whereas control tactics exist in a majority of ongoing abusive relationships, even absent physical violence, the inverse is not typically true; where physical violence occurs, it is rare to not also see coercive control tactics present (Johnson, 2008; Stark, 2009). Thus, psychological abuse (including coercive control tactics) is one of the most commonly experienced forms of violence in abusive relationships – affecting at least 113 million people in the U.S. alone (Black et al., 2011). The prevalence of this abusive communication is especially disturbing in light of the fact that abuse recipients consistently report the psychological trauma from intrusive coercion (i.e., *not* physical violence) as a worst aspect of their victimization (Crossman et al., 2016; Williamson, 2010).

What is Involved?

IPV relationships are characterized by varying levels of physical and/or psychological abuse tactics. *Physical abuse* involves behaviors intended to injure or otherwise harm; it can also be used to (intentionally or as a side-effect) control. *Psychological abuse* includes a wide variety of sub-categories such as verbal abuse (i.e., communication intended to directly attack), emotional abuse (i.e., communication intended to harm, scare, and/or control), and economic abuse (i.e., limiting or controlling resources necessary for

functioning). Common to all of these abuse tactics is the element of control or exerting power over another, whether through actual communication or the threat of such.

In the IPV field, *coercive control* is typically characterized as patterned behaviors used by a perpetrator to dominate and manipulate a (current or former) partner (Stark, 2009). Implicit in this abuse strategy is the perpetrator's constant contact and/or monitoring of the victim because constant monitoring is necessary to plan and implement control of a partner's everyday activities, interactions with friends and family, access to education, and economic resources. For IPV victims, these behaviors often continue even after relational dissolution (Crossman et al., 2016; Davis et al., 2012).

Continued contact between ex-partners is common among many types of romantic partnerships (Dardis & Gidyc, 2017). Described in both abusive and non-abusive contexts as *unwanted pursuit behaviors* (UPBs) or *persistent pursuit* (Davis et al., 2012; Langhinrichsen-Rohling et al., 2000), this non-consensual contact intended to renew a romantic relationship may be used to re-institute both explicit, official and/or implicit, unsanctioned "relationships" with a former partner. UPBs are particularly prevalent among partners who wish to control and/or gain some form of retaliation against the other (Mumm & Cupach, 2010), often for leaving them. Partners are much more likely to use UPBs following relational termination if they engaged in abusive behaviors during the relationship (Dardis & Gidyc, 2017).

When any continual communication is perceived as persistent or invasive, it becomes known as (obsessive relational) *intrusion*, or control/interference "that demands attention, diverts energy…from priorities, and limits choices" (Wuest et al., 2003, p. 600). Beyond being monitored/stalked[ii], intrusion also includes intentional strategies to make a target feel threatened or uneasy and/or behaviors to make their life more difficult. Intrusive communication may involve a former partner's continued abusive behaviors, the health outcomes resulting from that abuse (and from prior violence in the relationship), the accompanying help-seeking costs (e.g., money, time, effort, interference, stress), and all other resulting "undesirable changes to patterns of living" (p. 600).

This interference may occur as *unknown intrusion*, when the recipient finds their life made more difficult but is unaware the abuser is the one facilitating it. For example, Eckstein (2020) detailed cases such as third-parties (both human and technological) reaching out to invade the lives of the victim (e.g., spamming, group-facilitated attacks) or to frame him/her for illegal activities (e.g., false reports, "swatting"). This type of intrusion is perhaps more prominently perpetrated with the use of new technologies than it was prior to these mediated tools. In contrast, interference may also occur

in the form of *harassing intrusion*, when the recipient is aware of the sender. Examples include someone constantly contacting a victim via email or phone, sending them messages, or posting about them in online social networks (Eckstein, 2020).

Perhaps most important for victims' lives, recipients consistently report intrusion as one of the worst experiences of IPV victimization and one of the greatest barriers to obtaining help and truly getting "out" of their abusive situation (Sheridan et al., 2019; Wuest et al., 2003). Its effects on victims' lives are amplified by the fact that, although stalking is but one comparatively minor aspect of intrusion, stalking is illegal (although its definition and the promise of consistent prosecution vary tremendously) in many U.S. states whereas intrusion is not[2].

Further, victims of these UPBs are often advised by well-meaning others to not let the abuser see that they are affected by the behaviors. Victims – who are often admonished by professionals, friends, and family to "not give them the satisfaction," "don't let them see it hurts you," or "rise above it and it won't bother you that much" – may attempt to show they are unaffected by UPBs (Muldoon et al., 2016; Scarduzio et al., 2017; Tanha et al., 2010). However, when faced with victims' disinterestedness, perpetrators often begin to engage in "rumination" and subsequent "flooding," which can provoke perpetrators' anger and/or jealousy, in turn leading to an increase of even more UPBs (Spitzberg et al., 2014). Unsurprisingly, the still-legal act of intrusion is today facilitated by media in previously unheard-of ways and levels (Chaulk & Jones, 2011; Norton et al., 2018).

Where and When: Mediated Contexts

Where it Occurs

Contemporary mediated technologies afford perpetrators a multitude of ways in which to engage in abusive communication. In the first fully comprehensive study of the topic, Eckstein (2020) detailed all of the means/methods and tactics of technology-mediated abuse (TMA) in IPV contexts, including: preventing or prohibiting a partner's access to technology (and as such, communication with others – effecting both isolation and limitation of economic and support resources), humiliating or damaging their reputation via social media, and engaging in monitoring/stalking behaviors that may (not) include threats and attacks. Although we now have a more complete understanding of the full range of IPV abusers' practices, a necessary next step is to understand how victims actually understand and frame the receipt of such TMA communication tactics when used to facilitate coercive control and intrusion in post-dissolution contexts. Understanding how victims perceive and manage coercive, intrusive TMA may shed light on the ongoing efficacy of traditional communication theories of perceived media use.

Katz et al. (1973) argued that media use can largely be understood by looking at the individual needs of users. Uses and Gratifications Theory emphasizes audiences are active and thus, goal directed; people react to media based on their perceptions of its effectiveness in meeting (or hindering) their personal media goals. This theory also accounts for the fact that people's varying needs may not always be met by media; in some cases, media may even be an obstacle to meeting goals throughout life. Supplementing these premises, Apparatgeist Theory (Katz & Aakhus, 2002) provides additional insight into the role of technology in people's lives. Essentially, technology is much more than its design and its affordances – it instead takes on a "spirit" of its own that is simultaneously socially constructed. Users create specific meanings and norms which govern how they use the technology and serve to create its patterns of behavior.

Research applying these theories has demonstrated a multitude of reasons people use technology. One such motivation salient to current purposes is that of constructing and controlling identities or projected images. Technology users construct social identities varying in the degree to which they entail what Goffman (1959, 1967) called *perceived* (who we feel we "truly" are) and *presenting* (how we want others to see us) selves.. Extending Goffman's principles to online contexts, the ubiquitous nature of the internet has made it such that individuals "need to strategically control the information they display" (Yang & Brown, 2016, p. 403) as they present their *face*, the interacting performance of both perceived and presenting selves (Goffman, 1967). Although people typically present the most positive aspects of their lives for others to see (and use technology best aiding those presentational face needs), they may not always be able to control their public performance, given others' freedom online. In other words, what happens when a user's "need" is to surveil and/or manipulate the presenting self of another, or to *altercast* another publicly? Further, in what ways do these actions play out in a highly mediated world?

When it Occurs

Harassing intrusion and coercive control clearly occur online and may be particularly prominent in IPV contexts in the form of technology-mediated abuse. As noted by Eckstein (2020), the fact that such behaviors occur publicly means the otherwise-hidden nature of abuse is made doubly stigmatizing. Victims must then balance not only the repercussions of direct psychological abuse, but also the shame, embarrassment, and social fallout associated with those behaviors becoming public (Eckstein, 2016a; Goffman, 1963). Because of technologies' ubiquity, the victim often lacks a space to which they can retreat, away from the abuser. Thus, a system of badgering and abuse, devoid of an escape route, is created.

As cyberbullying, trolling, doxxing, and other online attacks (e.g., swatting, happy slapping) in general have increased, the way internet and mobile technologies are perceived by users is equally affected. The Theory of Apparatgeist (Katz & Aakhus, 2002) suggests this is a function of both the users' (and community-built) perceptions and the nature of the technology itself (i.e., online social networks' public, ubiquitous, and pervasive presence). Through their interactions with this media form, users create a sense of what are normative and non-normative behaviors as they relate to their mediated interactions. These norms govern how and when technology should be used. The infrastructure of modern technologies allows for communication on a consistent, and perhaps, potentially intrusive basis. Ubiquitous media (such as that created by smartphones containing social media apps) can "severely erode privacy at both the individual and societal levels" (Katz & Aakhus, 2002, p. 301). In other words, evolving technologies (and changing uses of/for it) necessitate a re-examination of what users consider appropriate or normative contact.

Modern users exist within a system of *perpetual contact*, whereby one is always accessible (Katz & Aakhus, 2002). This perpetual contact can lead to unexpected and inappropriate modes of interaction, especially when occurring in the already invasive, persistent, and coercive context of abusive relationships – whether with current, ongoing, and/or "former" partners. Relational partners create norms for interaction during the course (and during potential dissolution) of their relationship which undoubtedly include mediated channels (Kellas et al., 2008; Sahlstein & Dun, 2008). These patterns and norms may extend beyond relational dissolution or, alternatively, communication otherwise considered "acceptable" in a current relationship may be perceived as a violation after the relationship has ended (Roberts, 2005). The face threat of being shunned, as happens with ex-partners, can lead rejected partners to seek ways to recapture their perceived self-image. One way to potentially address face needs in a romantic dyad is to attack or modify the "self" presented by the ex-partner.

A common normative practice in post-relationship dissolution is the use of social media to express oneself and manage identities (Wilcox & Stephen, 2013; Slater, 2007). When done in terms of a presenting relational identity, this "self" presentation (implicitly or explicitly) involves a partner. In other words, public audiences naturally assume someone's status post-breakup is directly related to (and thus, tied up in the identity of) the other person in that relationship (Muise et al., 2009). In order to frame their own relational identities, people must necessarily altercast their partner's identity (Weinstein & Deutschberger, 1963). A by-product of this supposed "self"-expression is that both users *and* their implicit

targets (i.e., ex-partners) can receive negative feedback on their performance. Although even seemingly non-attacking messages can have detrimental effects when posted without context and/or displayed publicly, ex-partners' messages intended to attack or control are particularly effective via social media.

Some research examines how social media image-presentations affect victims, but these studies have largely looked at the direct effects of intentional, obvious attacks (e.g., cyberbullying; Brody & Vangelisti, 2016; Kowalski et al., 2018; Martinez-Pecino & Duràn, 2019). Therefore, research to date primarily focuses on mediated psychological abuse in its directly communicated "verbal abuse" form. The more implicit tactics technologically communicated to coercively control and/or harassingly intrude on victims' lives remain largely unexamined. People in partners' shared social networks may not be privy to hidden meanings or shared understandings of communication between former partners; thus, abusers often perpetrate these covertly abusive tactics publicly without any repercussions to themselves (Eckstein, 2020). In light of these practices, looking only at the surface-value or content-level-meaning of messages posted online would not reveal how the prior (or changing) norms within a couple's relationship influence the actually harmful relational-level-meaning of that ostensibly innocuous message. To fully understand the "spirit" or apparatgeist of social media technology as constructed in such IPV contexts, we proposed the following research question:

> RQ: How (and why) are technology-mediated messages from former partners perceived by IPV victims as intrusive and/or controlling when communicated publicly and/or privately?

Methods

Sampling & Participants

We sent out social network emails and posted online solicitations in general and violence-related web forums to recruit people who self-reported experiencing physically and/or psychologically abusive behaviors while with (and from) a current or former romantic partner. Part of a larger data collection project obtaining 495 respondents, a subsample of individuals (N = 187; n = 67 men, 120 women) indicated having experienced their abuse via technological means and provided open-ended data regarding the nature of this abuse. Our study's primary sample, this responding group ranged in age from 18 to 56 years (M = 39.42, SD = 13.16); were primarily White (85.6%), multi-racial (5.9%), or Latinx (4.8%); and mainly reported having completed some college (36.4%) or an earned bachelor's degree (28.3%).

These participants' abusive relationships, consisting of both male (n = 123) and female (n = 64) perpetrators, lasted from less than

one month to 36 years (*M* = 6.88 years, *SD* = 6.89, *Mdn* = 5.00). Victims reported having been "out" of this relationship, on average, 7.14 years (*SD* = 7.11; *Mdn* = 5 years), although this ranged from still being "with" their abusive partner to having been out of the relationship up to 33 years. All but one of these participants indicated they were still in contact with their abusive partners via various technologies.

Procedures & Analyses

Data were derived from an open-ended inquiry regarding ways a romantic partner used technology to "threaten, accuse, or hurt" them during and/or after their relationship. Each person's response was examined in terms of the participants' larger experiences, detailed by them in other qualitative and quantitative responses related to their victimization (see Eckstein, 2016b, 2016c for more info on those data). We chose to focus on each participant's responses as a whole – rather than solely using data from that one question on its own – to understand the larger context of each person's interpretation.

Further, contextualizing these responses amidst the other patterns and norms of their abusive relationship (á la Garfinkel, 1967), aligns particularly well with an Apparatgeist theoretical foci on socially constructed meanings of/by technologies. People engage in many practices to manage their identities and exert social control over their environment as they see it. Garfinkel (1967) argued that to understand others' social construction processes, it is necessary view messages as *indexical*, or subject to divergent meanings across different circumstances. Therefore, we employed (and report results based on) Glaser's (1978) methods which embed *axial* analyses within critical or *theoretical* analyses (Strauss & Corbin, 1998). Basically, our analysis process examined victims' words not only according to their literal, content-level meanings, but also according to the person-specific contexts (situated within the "whole picture" of their survey data) in which they were used.

Data revealed several ways IPV victims experienced TMA from former, abusive partners. Because the nature and full range of these tactics/behaviors mirrors what is already extensively detailed elsewhere (e.g., see Eckstein, 2020; Matthews et al., 2017; Sheridan et al., 2019), we focus here on the *interpretation by victims* of those tactics.

Findings

Participants discussed technology-mediated abuse (TMA) abuse behaviors as occurring both during the relationship and continuing post-relational dissolution. Previous research confirms that abusers who perpetrate during the relationship are significantly more likely to engage in such behaviors post-relational dissolution

(Dardis & Gidyc, 2017). In our study, intrusion and coercive control experienced during their relationship did not end post-dissolution.

We found that victims across our sample constructed similar narratives related to intrusion and control of ongoing (i.e., post-dissolution) abuse tactics in terms of an overall "image" the abuser attempted to create and foster. According to these victims, abusers were able to construct victims' self-image both publicly and privately. Due to the high degree of saturation achieved in these reports, in the following sections, we rely on exemplar quotes to represent key ideas expressed by a majority of respondents, with any exceptional cases described accordingly.

How: Public Image Control and Victims' Presenting versus Altercast Selves

A majority of responses spoke to the face concerns of TMA. Victims felt their abusers attempted to construct particular identities for them via public altercasting. Social media was a primary mechanism for these attempts, which simultaneously served as coercive control via direct and indirect manipulation. As these tactics are not new or exclusive to IPV victims, we direct our focus to interpreting how respondents perceived/understood them by emphasizing *their* (i.e., the victims') social construction of the Apparatgeist.

One common direct tactic involved abusers using the public nature of online forums as a way to blackmail respondents. For example, when participants reported former partners who "threatened to put up nude pictures…in embarrassing situations on the internet," they largely perceived these tactics (depending on the context) as the abuser seeking compliance (a) to exert power and/or (b) as a means of harassingly intruding, when it was repeatedly threatened. This latter method was felt by victims to be highly effective in instilling ongoing fear and uncertainty in their lives, as it was something that could be "held over" them and revealed publicly at any future point.

A second form, one that victims interpreted as direct coercion, was shown when abusers, in efforts to control victims' post-relationship lives, used technological surveillance against them. This was perceived as accomplishing both harassing intrusion and coercive control simultaneously. For example, ex-partner/s "created a shadow account on my computer" or "required me to get online with AIM when home, so I couldn't get on computer without him knowing." Because IPV victims (like everyone) lean on technology to maintain contact with family members, friends, or supportive others, a common way for abusers to control the victim *and* their relational identity narrative is to control the technology (e.g., see Edwards et al., 2015).

A third TMA behavior was felt by victims as both intrusion *and* an effective indirect form of image control. Again exemplifying

many reports, victims reported their ex-partners posted "all over the internet that" they (i.e., the victims) were "hiding money, cheating, and abusing [them] when I wasn't." As one respondent mentioned, "We went to counseling 4 times in 11 years, the last 3 times I had to beg her to go, and every time we went to counseling they told her I was not abusive but she told people [online] I was anyway." Technological platforms hide (and frequently lack repercussions for) nonverbal deception cues (Walther, 1996). Abusers harness this aspect of technology to maintain a particular narrative about their victim. These victims viewed this tactic as particularly effective because any response to these messages on their part was believed to be "sinking to their level," "engaging with someone I didn't want to have in my life, giving him what he wanted [i.e., ongoing relational ties]," or felt to be perceived by an online audience as "just exes bickering, not the actual abuse or lies it was."

Even when they did attempt to respond or "clear my name," victims encountered replies from the social network – or even from the abuser who initiated the topic – to not "air their dirty laundry" or "defame me [the abuser] or else." Such responses not only silenced the victim, but also then appeared to increase any stigma they felt for having been involved in an IPV relationship. Indeed, prior studies show that it is when IPV victims attempt to disclose "their side" of an abusive relationship that they encounter the most stigmatization – a factor many victims report as a reason for having stayed with their abusive partners in the first place (Eckstein, 2011, 2019).

A fourth tactic, communicated indirectly online but having direct effects perceived by participants, used technology to get the victim in trouble with third parties (e.g., authorities, employers, social network). For example, one partner "used my [the victim's] position as webmaster who has done adult sites to accuse me (to the police) that I had 'child porn' on my computer, so it may be confiscated/examined." Other victims mentioned similar tactics, such as when an ex "stole equipment, put defamatory information on it and turned over to lawyer" or another abuser infiltrated a social media account to implicate the victim in a crime: the abuser "hacked my MySpace account, sending herself an email, to violate a restraining order. MySpace deleted the account when she stated I'd violated the restraining order, and MySpace will not give ANY evidence of what happened, because the account was deleted, per policy." Because these people, like many in our study, relied on their technologies *and* other people (e.g., clients, professional networks) as primary sources of income, the effects of this tactic on the lives of victims were multiplied such that emotional or verbal attacks became coercively controlling and economically abusive. Even the messages posted by victims during this fraught time became ammunition for abusers. In addition to creating false narratives, abusers

(un)intentionally formed arguments based on messages taken out of context, as one woman's soon-to-be-ex-spouse would accuse her "of cheating *because of* [emphases added] Facebook wall posts/messages" – a tactic that became more severe (than "mere" verbal abuse) because she was going through a child-custody battle at the time.

Finally, similar tactics were used to harm people's potential support resources by alienating members of their shared social networks – both directly and indirectly. A frequent occurrence, former partners "used my cell phone to send demeaning and inappropriate messages to random people in my address book." Ultimately, respondents demonstrated that an ex-partner's public posting of "defamatory blog posts" or "abusive messages that others could see" were the norm rather than the exception. It is possible that this TMA tactic was a by-product of the rumination and flooding emotions that some rejected partners experience (Spitzberg et. al., 2014), whereby they try to resuscitate their own self-image both for themselves and (intrinsically) to the public. However, having dealt with these types of tactics (or threats of such) throughout their IPV relationship, victims in this study tended to interpret this practice as intentionally abusive in a controlling manner – not as a mere ego-remedy for the abuser.

Not just IPV relationships are constrained by social norms for appropriate public disclosures post-dissolution (Harvey & Karpinski, 2016). Victims in this study perceived that these social constraints facilitated continued abuse from their partners when they either had no means of contradicting the narrative or when their supportive network's "bridges had been burned." In the end, because this defamatory communication came from their ex-partner – a person audiences view as having intimate knowledge – victims were exponentially worried, felt there was the potential for others to pay greater attention and to give more credence to the communication than if it had been posted by someone else (e.g., stranger, disgruntled employee).

Further, these types of comments, beyond being merely personally hurtful, manipulated an identity that victims had worked carefully to construct – publicly and privately, both during and after the relationship. Indeed, "the *process through which individuals communicate* an image of themselves to others is a central element in the construction of one's self and efforts to establish a reputation within a social context" (Yang & Brown, 2016, p. 402, emphases added). Abusers and victims used the same tool for image construction, with competing narratives and often differential effectiveness. Because of this, technology that can allow users to "perform optimized self-presentation" (Yang & Brown, 2016, p. 403; Walther, 1996) may work for some better than others.

The Apparatgeist is shaped not only by active users, but by passive interactants as well. When an audience projects their own relational understandings onto the messages communicated by/between ex-partners in abusive contexts, otherwise "healthy" norms can become abusive. Even if messages are obviously attacks on another, the fact that they are posted to large audiences may mitigate bystanders' responses (Brody & Vangelisti, 2016), increasing the likelihood that target-recipients will feel unsupported and alone in their victimization.

Chat rooms, message boards, and social network sites all offer social support to users who can share intimate details, which also makes them prime tools for those wishing to distort intimate impressions (Nosko et al., 2013). If users rely on technology to "escape from the constraints of routine and the burdens of problems and emotional release;" to form and maintain "personal relationships (including substitute companionship as well as social utility);" and to manage "personal identity (including personal reference, reality exploration, and value reinforcement)" (McQuail et al., 1972, p. 515), then IPV victims' uses (and personal gratifications) otherwise derived from technology can *all* be attacked with just one post.

Technology-mediated communication, when used (or threatened to be) publicly, was overwhelmingly perceived by post-dissolution IPV victims in this study as abusive in coercively controlling ways, due to its effect on their presenting self-image. Unsurprisingly, it was difficult for victims in this study to separate those presenting or altercast selves from their perceived selves.

Why: Private Identity Control, Intrusion, and Perceived Selves

Another element in this study involved the rationale victims gave for perceiving abusers' technology usage as harmful. They frequently commented on the severity of its impact when used to intentionally, directly facilitate abuse – not only as they had previously experienced it in their IPV relationship, but also in new, amplified ways brought about by post-dissolution norms. Our findings suggest these mediated interactions affected victims' sense of private, perceived selves – and thus, their corresponding interpretation and subsequent use of that same technology – in multiple ways.

First, direct emotional attacks were common; respondents mentioned these instances as examples of an ongoing pattern (continued from when "together" with their partner) of abuse intended to hurt and psychologically degrade. They frequently mentioned both direct verbal and emotional attacks, exemplified by one woman's partner sending direct messages and leaving comments on Facebook "making fun" of her, saying that she should "go kill [her]self." In most cases, abusive norms for communication via technological contexts were created during the course of the victim's

relationship, which further served to influence their own self-perceptions via diminished self-esteem.

Importantly, these attacks – although direct – were not always communicated in ways obvious to an outsider, which speaks to the role of shared relational history affecting perceptions of online messages. For example, one respondent described her partner's frequent "helpful" messages (i.e., informational websites) as actually intended to demean her: "The most distinctive way technology was used was when he would give me a website to go to that'd tell me about a new weight loss product or exercise. He constantly was telling me I was fat, and he would look up web info on what I should do." Adding to victims' sense of helplessness or feelings that *they* are the ones being unreasonable or "over-reacting" (in cases where they "argue back" online, for example) was the lack of control they felt over these technologies, particularly public ones such as online forums. Victims saw this tactic's emotional abuse as compounded by technology to also be harassing intrusion when done repeatedly.

A second way technology affected victims' own perceptions of reality (e.g., crazy-making or gaslighting behaviors; Sweet, 2019) was when used as another form of harassing intrusion – either by its direct use or through its strategic removal/absence:

> …during the divorce process when he would call our home phone and leave screaming demanding messages about what he wanted me to do or not do. He acted the same way when we actually talked so I almost preferred the voice mails. I could just delete him. However, he did use technology frequently during our marriage to convey messages to avoid confrontations. He would always leave voice mail messages on our home phone, not on my cell which he knew I would answer during the day. For example, he would leave town on a regular basis without my knowledge and would just leave me a voice mail at home on a Friday while I was at work. I would get the message and call him on his cell but he would never answer. Other than what he told me when he came back on Sunday, I never really knew the truth of where he was during that weekend. He also "left" me four times during the course of our marriage and never once told me to my face. I would come home and see the message light blinking on the phone, get his message, open his drawers and see his clothes were gone. Again. I was always shocked. It was always devastating.

She was kept always uncertain; her abuser used a strategy of constant intrusion (notably, across multiple media tools, strategically chosen for particular uses) coupled with periods of intense, manipulative withdrawal. Of course, these methods are commonly used by abusers to coercively control victims (Follingstad & Rogers, 2014), but the

presence of myriad technologies further intensified victims' perceived severity of practices previously limited to in-person contacts.

Perpetual contact among partners, during and after relationships dissolve, is not unusual. But in any romantic situation (and many general, interpersonal ones), the exact same communication considered appropriate while "together" takes on an entirely different meaning post-dissolution. The pervasive nature of technology, an essential part of its apparatgeist in this context, facilitates not only an additional means of perpetration, but also modifies (i.e., increases *and* changes) the effects of that TMA.

Conclusion

Clearly, perpetrators use technology in myriad ways, both during and after the dissolution of a relationship. This study showed how victims interpret mediated communication from their former abusive partners to be an extension and amplification of norms established during the abusive relationship. In this way, not only abusers and their victims but also their online public audiences create meaning from and *for* the technologies used.

Technology is a constantly evolving landscape, and as such, needs continual exploration as it pertains to IPV. Mentioned previously, individuals are not lawfully barred from engaging in relationally intrusive behaviors. The ever-present nature of technologies, including but not limited to social media, makes this threat even more pervasive. Of course, users have power to sculpt their own performances (i.e., self-image); they can control their own social media pages' content. But they cannot control others. Until researchers, and subsequently the public and lawmakers, fully understand the breadth and depth of abusers' *and* victims' constructed apparatgeist in this context, technology-mediated abuse will remain legal.

References

Black, M. C., Basile, K. C., Breiding, M. J., Smith, S. G., Walters, M. L., Merrick, M. T., Chen, J., & Stevens, M. R. (2011). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 summary report.* National Center for Injury Prevention & Control, CDC. http://www.cdc.gov/violenceprevention/pdf/nisvs_report2010-a.pdf

Brody, N., & Vangelisti, A. L. (2016). Bystander intervention in cyberbullying. *Communication Monographs, 83*, 94-119. https://doi.org/10.1080/03637751.2015.1044256

Chaulk, K., & Jones, T. (2011). Online ORI: Further concerns about Facebook. *Journal of Family Violence, 26*, 245-254. https://doi.org/10.1007/s10896-011-9360-x

Crossman, K., Hardesty, J., & Raffaelli, M. (2016). He could scare me without laying a hand on me: Mothers' experiences of nonviolent coercive control during marriage & after separation. *Violence Against Women, 22*, 454-473. https://doi.org/10.1177/1077801215604744

Dardis, C. M., & Gidycz, C. A. (2017). Reconciliation or retaliation?: An integrative model of postrelationship in-person & cyber unwanted pursuit perpetration among undergraduate men and women. *Psychology of Violence, 9*, 328-339. https://doi.org/10.1037/vio0000102

Davis, K. E., Swan, S. C., & Gambone, L. J. (2012). Why doesn't he just leave me alone? Persistent pursuit: A critical review of theories and evidence. *Sex Roles, 66*, 328-339. https://doi.org/10.1007/s11199-010-9882-3

Desmarais, S. L., Reeves, K. A., Nicholls, T. L., Telford, R. P., & Fiebert, M. S. (2012). Prevalence of physical violence in intimate relationships, Part 1: Rates of male and female victimization. *Partner Abuse, 3*, 140-169. https://doi.org/10.1891/1946-6560.3.2.140

Durante, M. (2011). The online construction of personal identity through trust and privacy. *Information, 2*, 594-620. https://doi.org/10.3390/info2040594

Eckstein, J. J. (2020). What is violence now?: A grounded theory approach to conceptualizing technology-mediated abuse (TMA) as spatial and participatory. *The Electronic Journal of Communication, 29*(3-4). http://www.cios.org/www/ejc/v29n34toc.htm

Eckstein, J. J. (2019). "I'm strong for her" versus "I rely on him": Male and female victims' reasons for staying reflect sex-gender conflations. *Journal of Applied Communication Research, 47*, 216-235. https://doi.org/10.1080/00909882.2019.1584403

Eckstein, J. J. (2016a). IPV stigma and its social management. *Journal of Family Violence, 31*, 215-225. https://doi.org/10.1007/s10896-015-9752-4

Eckstein, J. J. (2016b). Is love blind to abuse?: Factors affecting victims' preferences for love-communication from abusive partners. In L. Olson & M. Fine (Eds.), *The darker side of family communication* (pp. 175-197). Peter Lang.

Eckstein, J. J. (2016c). "The more things change…?": Technology and abuse for intimate partner violence victims. In E. Gilchrist-Petty & S. D. Long (Eds.), *Contexts of the dark side of communication* (pp. 255-268). Peter Lang.

Eckstein, J. J. (2011). Reasons for staying in intimately violent relationships: Comparisons of men and women and messages communicated to self and others. *Journal of Family Violence, 26*, 21-30. https://doi.org/10.1007/s10896-010-9338-0

Edwards, K. M., Dardis, C. M., Sylaska, K. M., & Gidycz, C. A. (2015). Informal social reactions to college women's disclosure of intimate partner violence: Associations with psychological and relational variables. *Journal of Interpersonal Violence, 30*, 25-44. https://doi.org/10.1177/0886260514532524

Feeney, J., & Noller, P. (1992). Attachment style & romantic love: Relationship dissolution. *Australian Journal of Psychology, 44*, 69-74. https://doi.org/10.1080/00049539208260145

Follingstad, D., & Rogers, M. (2014). The nature & prevalence of partner psychological abuse in national adult sample. *Violence & Victims, 29*, 3-23. https://doi.org/10.1891/0886-6708.09-160

Garfinkel, H. (1967). *Studies in ethnomethodology.* Prentice Hall.

Glaser, B. G. (1978). *Theoretical sensitivity.* Sociological Press.

Goffman, E. (1959). *The presentation of self in everyday life*. Prentice Hall.

Goffman, E. (1963). *Stigma: Notes on management of spoiled identity*. Simon & Schuster.

Goffman, E. (1967). *Interaction rituals: Essays in face-to-face behavior.* Taylor & Francis.

Harris, S. (2000). The social construction of equality in everyday life. *Human Studies, 23*, 371-393. https://doi.org/10.1023/A:1005684130032

Harvey, A., & Karpinski, A. (2016). The impact of social constraints on adjustment following a romantic breakup. *Personal Relationships, 23*, 396-408. https://doi.org/10.1111/pere.12132

Johnson, M. P. (2008). *A typology of domestic violence: Intimate terrorism, violent resistance, and situational couple violence*. Northeastern University Press.

Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The Public Opinion Quarterly, 37*(4), 509-523. https://doi.org/10.1086/268109

Katz, J., & Aakhus, M. (2002). Making meaning of mobiles: A theory of apparatgeist. In J. Katz & M. Aakhus (Eds.), *In perpetual contact: Mobile communication, private talk, public performance* (pp. 301-320). Cambridge University Press.

Kellas, J., Bean, D., Cunningham, C., & Cheng, K. (2008). The ex-files: Trajectories, turning points, & adjustment in the development of post-dissolutional relationships. *Journal of Social & Personal Relationships, 25*, 23-50. https://doi.org/10.1177/0265407507086804

Kowalski, R., Toth, A., & Morgan, M. (2018). Bullying & cyberbullying in adulthood & the workplace. *Journal of Social Psychology, 158*, 64-81. https://doi.org/10.1080/00224545.2017.1302402

Langhinrichsen-Rohling, J., Palarea, R., Cohen, J., & Rohling, M. L. (2000). Breaking up is hard to do: Unwanted pursuit behaviors following the dissolution of a romantic relationship. *Violence & Victims, 15*, 73-90. https://doi.org/10.1891/0886-6708.15.1.73

Lee, L., & Sbarra, D. (2013). Predictors & consequences of relationship dissolution. In C. Hazan & M. Campa (Eds.), *Human bonding: Science of affectional ties* (pp. 308-341). Erlbaum.

Lepp, A., Barkley, J. A., Karpinski, A. C. (2015). The relationship between cell phone use and academic performance in a sample of U.S. college students. *SAGE Open*. https://doi.org/10.1177/2158244015573169

Martinez-Pecino, R., & Durán, M. (2019). I love you but I cyberbully you. *Journal of Interpersonal Violence, 34*, 812-825. https://doi.org/10.1177/0886260516645817

Matthews, T., O'Leary, K., Turner, A., Sleeper, M., Woelfer, J. P., Shelton, M., Manthorne, C., Churchill, E. F., & Consolvo, S. (2017, May). *Stories from survivors: Privacy & security practices when coping with intimate partner abuse.* Paper presented at Proceedings of Computer-Human Interaction, Denver, CO. https://doi.org/10.1145/3025453.3025875

McQuail, D., Blumler, J. G., & Brown, J. (1972). The television audience: A revised perspective. In D. McQuail (Ed.), *Sociology of mass communication* (pp. 135-165). Penguin.

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does Facebook bring out the green-eyed monster of jealousy? *Cyberpsychology & Behavior, 12*, 441-444. https://doi.org/10.1089/cpb.2008.0263

Muldoon, S., Taylor, S. C., & Norma, C. (2016). The survivor master narrative in sexual assault. *Violence Against Women, 22*, 565-587. https://doi.org/10.1177/1077801215608701

Mumm, S., & Cupach, W. (2010). Turning points in progression of obsessive relational intrusion & stalking. *Violence & Victims, 25*, 707-727. https://doi.org/10.1891/0886-6708.25.6.707

Norton, A. M., Baptist, J., & Hogan, B. (2018). Computer-mediated communication in intimate relationships: Associations of boundary crossing, intrusion, relationship satisfaction, and partner responsiveness. *Journal of Marital and Family Therapy, 44*, 165-182. https://doi.org/10.1111/jmft.12246

Nosko, A., Wood, E., Zivcakova, L., Molema, S., De Pasquale, D., & Archer, K. (2013). Disclosure and use of privacy settings in Facebook profiles: Evaluating the impact of media context and gender. *Social Network, 2*, 1-8. https://doi.org/10.4236/sn.2013.21001

Phillips, M., & Spitzberg, B. (2011). Speculating about spying on MySpace & beyond: Social network surveillance & obsessive relational intrusion. In K. Wright & L. Webb (Eds.), *Computer-mediated communication in personal relationships* (pp. 344-367). Peter Lang.

Roberts, K. A. (2005). Women's experience of violence during stalking by former romantic partners: Factors predictive of stalking violence. *Violence Against Women, 11*, 89-114. https://doi.org/10.1177/1077801204271096

Sahlstein, E., & Dun, T. (2008). "I wanted time to myself and he wanted to be together all the time": Constructing breakups as managing autonomy-connection. *Qualitative Research Reports in Communication, 9*, 36-45. https://doi.org/10.1080/17459430802400340

Scarduzio, J., Carlyle, K., Harris, K., & Savage, M. (2017). "Maybe she was provoked": Exploring gender stereotypes about male & female perpetrators of intimate partner violence. *Violence Against Women, 23*, 89-113. https://doi.org/10.1177/1077801216636240

Sheridan, L. P., Scott, A. J., & Campbell, A. M. (2019). Perceptions and experiences of intrusive behavior and stalking: Comparing LGBTIQ and heterosexual groups. *Journal of Interpersonal Violence, 34*, 1388-1409. https://doi.org/10.1177/0886260516651313

Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory, 17*, 281-303. https://doi.org/10.1111/j.1468-2885.2007.00296.x

Spitzberg, B., & Cupach, W. (2014). *The dark side of relationship pursuit* (2nd ed.). Routledge.

Stark, E. (2009). *Coercive control.* Oxford University Press.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research* (2nd ed.). Sage.

Sweet, P. L. (2019). The sociology of gaslighting. *American Sociological Review, 84*, 851-875. https://doi.org/10.1177/0003122419874843

Tanha, M., Beck, C., Figueredo, A., & Raghavan, C. (2010). Sex differences in intimate partner violence & use of coercive control as motivational factor for IPV. *Journal of Interpersonal Violence, 25*, 1836-1854. https://doi.org/10.1177/0886260509354501

VanderDrift, L. E., & Agnew, C. R. (2011). Need fulfillment and stay-leave behavior: On the diagnosticity of personal and relational needs. *Journal of Social and Personal Relationships, 29*, 228-245. https://doi.org/10.1177/0265407511431057

Walther, J. (1996). Computer-mediated communication: Impersonal, interpersonal, & hyperpersonal interaction. *Communication Research, 23*, 3-43. https://doi.org/10.1177/009365096023001001

Weinstein, E. A., & Deutschberger, P. (1963). Some dimensions of altercasting. *Sociometry, 26*, 454-466. https://doi.org/10.2307/2786148

Wilcox, K., & Stephen, A. (2013). Are close friends the enemy?: Online social networks, self-esteem & self-control. *Journal of Consumer Research, 40*, 90-103. https://doi.org/10.1086/668794

Williamson, E. (2010). Living in the world of the domestic violence perpetrator: Negotiating the unreality of coercive control. *Violence Against Women, 16*, 1412-1423. https://doi.org/10.1177/1077801210389162

Wuest, J., Ford-Gilboe, M., Merritt-Gray, M., & Berman, H. (2003). Intrusion: Central problem for family health promotion among children & single mothers after leaving abusive partner. *Qualitative Health Research, 13*, 597-622. https://doi.org/10.1177/1049732303013005002

Yahner, J., Dank, M., Zweig, J. M., & Lachman, P. (2015). The co-occurrence of physical and cyber dating violence and bullying among teens. *Journal of Interpersonal Violence, 30*, 1079-1089. https://doi.org/10.1177/0886260514540324

Yang, C., & Brown, B. (2016). Online self-presentation on Facebook & self-development during college transition. *Journal of Youth Adolescence, 45*, 402-416. https://doi.org/10.1007/s10964-015-0385-y

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[1] Acknowledging that abuse does not necessarily end when victims leave abusive partners, we use the term "former" throughout to refer only to the "official" romantic relationship status of that couple, typically when the victim chooses to "finally" (again, a fluid concept in IPV relationships) leave their abusive partner.

[2] Stalking, which is seemingly acknowledged much more frequently in society than intrusion or UPBs (see Spitzberg & Cupach, 2014), is actually "merely the tip of a much bigger iceberg entailing a broad range of unwanted relationship pursuit experiences" (Mumm & Cupach, 2010, p. 707; Phillips & Spitzberg, 2011).

The Impact of Virtual Connectedness on Boundary Management Choices

Kim Smith

Technological innovation has created countless opportunities for employees to complete their work anytime, anywhere using nontraditional work arrangements. The proliferation of communication technology use, along with organizational responses to the COVID-19 pandemic, challenge the traditional types of boundaries that employees typically create around their work and home roles. This study connects boundary management profiles developed by Kossek, Ruderman, Braddy, and Hannum in 2012 to the concept of virtual connectedness, suggesting that the extent to which an employee is virtually tied to their organization may influence the amount of control that individual has over their work-nonwork boundaries. Findings suggest that, while virtual connectedness may impact the ways in which boundaries are enacted, individuals who are more connected and prefer to use communication technologies to integrate their work and home lives may actually gain more control over that process. Implications for trends in generational behaviors and the COVID-19 crisis are discussed.

Introduction

Disconnecting in the contemporary working world is difficult. Communication technologies easily facilitate communicating across boundaries, which means employees must make decisions about allowing work responsibilities to enter their home domain, and vice versa (Wiesenfeld, Raghuram, & Garud, 1999). Opportunities for nontraditional and virtual work arrangements are increasing, often removing employees from traditional spatial and temporal boundaries of the workplace (Nansen, Arnold, Gibbs, & Davis, 2010). Scholars have noted that being removed from workplace cues may blur the boundaries between home and work, as well as create challenges in developing healthy workplace behaviors (Kossek, Lautsch, & Eaton, 2006; Walzenegger, McKenna, Cai, & Bendz, 2020). Maintaining boundaries between work and home has become increasingly more difficult within the current landscape of the working world at large, further complicated by the COVID-19 pandemic. Researchers have traditionally studied the ways in which individuals manage boundaries between work and home, with specific styles of boundary management studied at length by Kossek, Ruderman, Braddy, and Hannum (2012). When work and life domains converge, boundaries become increasingly difficult to manage, and narratives about autonomy and choice begin to shift for employees navigating their work-life boundaries.

This study presents telework as an alternative work model offering flexibility to both employers and employees, which became invaluable when organizations were forced to reconsider how to safely accomplish work tasks in the wake of the COVID-19

pandemic; overwhelmingly, organizations in industries where work could be completed at a distance chose to utilize teleworking. Boundary theory is used to explore how employees who complete work from their own home or from various mobile locations navigate the blended spaces that characterize alternative work arrangements. The literature review builds on boundary theory to consider the ways in which teleworkers interact with boundaries in one of three distinct ways, identified and described by Kossek et al. (2012). The present study further explores boundary management processes through a virtual connectedness lens, assessing the impact and challenges of working in a technologically innovative and increasingly virtual world.

Telework and COVID-19

Nontraditional work arrangements, such as teleworking, were introduced to the working world in small numbers in the 1970s (Qvortrup, 2002) and became more commonplace as technological advancements created additional opportunities for employees to perform work tasks outside of physical office buildings. Initially, organizations were drawn to telework because of its potential cost-saving benefits and the opportunity to modify traditional workplace structures. When flexibility in work hours and formats were linked to increases in employee satisfaction and commitment, telework policies rose in popularity (Mello, 2007). Flexibility became a top priority when many organizations across the United States were forced to rapidly implement alternative work arrangements in response to the COVID-19 pandemic. According to Brenan (2020), a Gallup panel poll that tracked worker experiences in the United States during the early days of the pandemic reported that, in mid-March of 2020, 31% of respondents indicated they had worked remotely. By April 2, 2020, that number had doubled to 62%. As employers in the United States worked to adjust organizational practices, the country was also experiencing its first wave of employment loss. According to Kochhar and Passel (2020), a Pew Research Center analysis of federal government data found that between February and March of 2020 approximately 90% – roughly 2.6 million – of the jobs lost during this first economic downturn were in industries where the work could *not* be done via telework. Teleworking became a "financial lifeline" for organizations that could be sustained by employees working from home, suddenly making nontraditional work arrangements commonplace across many industries (Kochhar & Passel, 2020).

Though alternative work arrangements have traditionally benefitted organizations in myriad ways, perhaps the biggest advantages during the COVID-19 pandemic became convenience and safety. Organizations that were able to implement and utilize telework policies found themselves in alignment with the Centers for

Disease Control and Prevention's (CDC) recommendation to use teleworking as a strategy for protecting employee health, and for reducing the risks associated with the spread of COVID-19 (Centers for Disease Control and Prevention, 2020). For many companies, using alternative work arrangements was the difference between keeping workers employed and their organization open or being forced to close. The prevalence of teleworking practices in the wake of the COVID-19 crisis creates a sense of urgency to understand the teleworker experience. For years, teleworkers have navigated managing work and personal spaces outside of traditional work boundaries. Though convenient, sudden shifts toward more virtual work formats upsets organizational landscapes that have existed in the same way for years. Now, social distancing standards and swiftly implemented work-from-home policies have created challenges for many employees forced to adjust their everyday work practices and to manage the boundaries that surround their work and home lives.

Boundary Theory

Boundaries have been described as "physical, temporal, emotional, cognitive, and/or relational limits that define entities as separate from one another" (Ashforth, Kreiner, & Fugate, 2000, p. 474). Boundary theory, first developed by Nippert-Eng (1996), describes how individuals negotiate and create the different domains that exist in their lives (e.g., work or family domains). In the workplace, boundaries are often used as a perimeter around a particular role (Ashforth et al., 2000). Kossek, Noe, and DeMarr (1999) defined boundary management strategies as the way one organizes and separates role demands or expectations into specific domains of work and home. In addition, Kossek et al. (2006) described boundary management strategies as "the degree to which one strives to separate boundaries between work and home roles" (p. 350). Boundaries provide a way to identify, establish, and delineate various domains, which influences how employees choose to communicatively manage their lives. In the workplace, employees traditionally created boundaries around work and personal or home life in order to keep each domain distinct (Hecht & Allen, 2009). From this perspective, maintaining a distinction between work and home allows individuals to identify the cognitive, behavioral, and communicative components of a particular domain; for example, each domain likely has separate role responsibilities (e.g., the role of a parent at home, the role of a graphic designer at work) and necessary behaviors, attitudes, and priorities that are enacted within each sphere. Delineating boundaries around different roles can make fulfilling role responsibilities in each domain more manageable or less overwhelming.

Several researchers developed the concept of boundary delineation by suggesting that individuals differ in the ways they

manage boundaries between work and home (Kreiner, Hollensbe, & Sheep, 2009), are more proactive than previously thought in defining work and family lives (Clark 2000), and have certain preferences for the strength of their boundaries (Ashforth et al., 2000). Strong boundaries are constructed to keep work and home domains separate, while weak boundaries allow and facilitate interaction between domains. Interaction between domains depends on level of permeability, or the extent to which a boundary allows psychological or behavioral aspects of one domain to communicatively enter another (Desrochers & Sargent, 2004), and flexibility, or the extent to which boundaries can expand or contract to accommodate role demands (Ashforth et al., 2000; Clark, 2000; Hall & Richter, 1988).

Kossek et al. (2012) identified and defined specific types of boundary management profiles among employees. According to Kossek et al., "Boundary management styles are defined as the approaches individuals use to demarcate boundaries and attend to work and family and other nonwork roles, given identity centralities and perceived boundary control" (p. 112). Through a series of quantitative analyses, Kossek et al. (2012) identified six boundary management profiles: Work Warriors, Reactors, Family Guardians, Fusion Lovers, Dividers, and Nonwork-eclectics. Work Warriors are characterized by low boundary control and asymmetrical interruption behaviors (higher work interrupting nonwork but not the reverse), and individuals who fall into this cluster are work-centric. Reactors are also characterized by low boundary control, experiencing high symmetry of cross-role interruption behaviors, and are dual-centric with equal focus on their work and family identities. Four clusters are characterized by high boundary control, and vary in identity centrality and interruptions. Family Guardians are family-centric and experience asymmetrical interruptions (nonwork interrupts work, but not the reverse). Fusion Lovers are dual-centric and are integrators, experiencing high interruption behaviors in both directions. Dividers are also dual-centric, but are separators, and have low cross-role interruptions. Finally, Nonwork-eclectics have high identity with other life pursuits not including family or work, and have high symmetry of cross-role interruptions (Kossek et al., 2012). See Table 1 for profile descriptions.

Table 1. Cluster descriptions

Cluster	Name	Profile	Description
1	Work Warrior	Low boundary control, work centric, high work interrupting nonwork behaviors, average nonwork interrupting work behaviors	This cluster reports the lowest boundary control mean (M = 2.29). They also have lower family identity (M = 3.25) ratings and the highest work identity (M = 4.39) ratings. This group tends to exhibit relatively average nonwork interrupting work behaviors (M = 3.66) and engage more in work interrupting nonwork behaviors (M = 3.85). This group allows work to interrupt nonwork time more than the reverse.
2	Reactor	Low boundary control, dual centric, high interruption behaviors in both directions (nonwork to work and work to nonwork)	This cluster reports low boundary control (M = 3.78). They report relatively low scores on both work identity (M = 3.32) and family identity (M = 2.83) so they can be considered dual centric. They tend to engage in above average work interrupting nonwork (M = 3.49) and nonwork interrupting work behaviors (M = 3.88). Thus, they integrate in both directions.
3	Fusion Lover	High boundary control, dual centric, integrator interruption behaviors	This cluster has high boundary control (M = 4.05). They have a high family identity (M = 4.24) and they also identify strongly with work (M = 4.20). They have high means in terms of work interrupting nonwork behaviors (M = 3.65) and nonwork interrupting work behaviors (M = 3.75), suggesting that they prefer integration between work and personal life in both directions.
4	Family Guardian	Average boundary control, dual centric (but higher on family), asymmetric interruption behaviors favoring nonwork	This cluster experiences an average degree of boundary control (M = 3.80). They have slightly lower scores for work identity (M = 3.45) and nearly average scores for family identity (M = 3.71). They have a high mean rating of nonwork interrupting work behaviors (M = 3.67) and lower ratings of work interrupting nonwork behaviors (M = 2.18), demonstrating an asymmetric pattern of interruption behaviors.
5	Divider	High boundary control, dual centric, separator interruption behaviors	This cluster reports a high level of control; they have the highest control score of any of the clusters (M = 4.59). They are dual-centric (work identity M = 4.21, family identity M = 4.42). They have the lowest scores on both work interrupting nonwork behaviors (M = 1.73) and nonwork interrupting work (M = 3.20), indicating they separate work and family.

Linking Boundary Management and Virtual Connectedness

Interest in employee boundary management styles has grown in both the academe and professional settings, and a renewed focus on boundaries emerged in the wake of the organizational shifts caused by COVID-19. Kossek and Distelberg (2009) attribute interest in boundary management styles to such societal shifts, which re-shape the borders of work arrangements. Kossek et al. (2012) connect advancements in wireless technology and connectivity to the rise in implementation of nontraditional work arrangements. Technological advancements provide opportunities for individuals to be connected 24/7, which create new norms and expectations surrounding employee availability and access. A sudden shift in the teleworking landscape, such as the one propelled by the COVID-19 crisis, places more people outside of traditional workplace

boundaries, working under myriad conditions (e.g., setting up makeshift home offices or working from home with many family members present). Brazeau, Frenzel, and Prescott (2020) explored how the COVID-19 pandemic introduces new levels of stress and concerns about well-being in higher education, stating it "has clouded the distinction of our work, how we work and study, and when we work and study" (p. 688). Stress and well-being have been studied across industries for years, and are increasingly concerning in light of the challenges presented by COVID-19. Communication and employee behaviors change when organizations take different shapes; investigating and understanding boundary management practices that must shift along with nontraditional work arrangements is important. From a managerial perspective, understanding the challenges faced by employees and the management strategies that may shape employee behaviors and influence an organization's bottom line is imperative.

According to Major and Germano (2006), communication technologies enable workers to connect to work and family regardless of physical location, and this connection blurs the boundaries between work and home domains. Before the influx of communication technologies, the possibilities for work to enter the home were limited. Now, alternative work arrangements (e.g., telework) and technological advances (e.g., Internet) provide opportunities for work to enter a nonwork domain, which may result in one domain interfering with another (Hecht & Allen, 2009) and perhaps more frequently than in the past. Research suggests teleworking does and can blur the boundaries between work and personal life (Kossek & Lautsch, 2008; Major & Germano, 2006). Simply using technology to regularly perform work tasks can inadvertently erase domain distinctions (Charalampous, Grant, Tramontano, & Michailidis, 2019). Walzenegger et al. (2020) report early evidence of blurred work-life boundaries and increased role conflict for employees who were forced to work from home as a result of the COVID-19 crisis. Expectations that employees should be always be connected and accessible, at all hours of the day, were common before the pandemic in both traditional, brick-and-mortar jobs and nontraditional teleworking roles. The influx of telework as a result of the pandemic will continue to fuel expectations of connectedness, reinforcing those expectations as norms; when connectedness is a norm, the idea of choice, and the way boundaries are managed, can shift radically.

Technology has been consistently and deeply rooted in personal and professional spaces for years, and Park and Jex (2011) speculate individuals may develop their own strategies for using technology to engage in roles across domains. For example, an individual might use a personal home computer to respond to work

emails. Communication technologies are represented as a component of virtual connectedness in several iterations of research. Being virtually connected means that people often use communication technology to remain socially connected to work and other employees after hours (Li & Yuan, 2018). Working virtually allows for employees to be completely removed from physically shared workspaces but entirely connected at the same time. Prior to the COVID-19 crisis, many employees regularly chose to use communication technologies to stay connected to work or deal with personal matters; employees working virtually, and especially during a global pandemic, may become caught in a new set of standards where boundaries are perpetually nonexistent, challenging the notion of a "healthy" work-life balance.

As connectedness demands on employees continue to increase, sustaining – or even surviving – such expectations is a very real concern. An employee who can or must exist in virtual connection to their organization may be inherently unable to truly make a choice about their boundary management. Expectations for connectedness are creating new standards for employees responding to work and life demands. Employees looking to survive and thrive in their careers may feel forced to conform to the connectivity standards of their industry or organization. Therefore, individuals who traditionally cluster into one of Kossek et al.'s (2012) boundary management profiles, focusing primarily on the importance of work – Fusion Lovers, Work Warriors, and Reactors – may experience difficulties in maintaining those boundaries if they are also highly virtually connected. Individuals who cluster into profiles of lower virtual connectedness – such as Dividers and Family Guardians - may have the ability to be very intentional in protecting their personal and family life.

RQ: How do work and family role preferences cluster to form distinct boundary management profiles?

H1: Individuals who cluster into the Reactor and Work Warrior boundary management profiles will report high levels of virtual connectedness.

H2: Individuals who cluster into the Divider, Family Guardian, and Fusion Lover boundary management profiles will report low levels of virtual connectedness.

Methods

To achieve the objectives of this study, participants were recruited from both an undergraduate student population and a population of working professionals with a range of teleworking experience. Several pre-existing quantitative measures were borrowed and developed to achieve the objectives of this study. Items borrowed from Kossek et al. (2012) represented subcategories of boundary management profiles, while two separate measures of

virtuality (Chudoba, Wynn, Lu, & Watson-Manheim, 2005; Gibson & Gibbs, 2006) were integrated to create a scale to measure virtual connectedness.

Participants

The sample consisted of 242 participants over the age of 18 and presently employed full-time. Informed consent was obtained from all participants. Individuals who were self-employed or independent contractors were not eligible to participate. The average age of the participants was 28.38 years old (*SD* = 9.34), and 64% of the participants identified themselves as female with 36% identifying as male. Respondents reported working for privately owned companies (48%), publicly owned organizations (23%), and nonprofits (11%). An additional eight percent of respondents worked in public education, while five percent reported working in public sector/government, and a final five percent represented "other" types of organizations. Participants reported an average of 3.89 (*SD* = 4.77) years working in their current organization, and an average of 2.77 (*SD* = 3.78) years in their current position within the organization. In addition, participants worked from home an average of 3.87 (*SD* = 6.76) days per month, and ranged from those who did not work from home at all to those who worked from home full-time. Data collection occurred prior to the COVID-19 pandemic.

Procedures

Sample recruitment occurred online. A survey link with a recruitment message was distributed to professional contacts via email and posted to social media websites. Instructors of undergraduate communication courses at a large, diverse Midwestern university offered students extra credit to participate in the study. In addition, representatives from a telework advocacy group and an entirely virtual organization (without brick-and-mortar locations) were contacted and asked to distribute the survey link among organizational members.

Measures

A pre-existing instrument measuring boundary management was used. Participants were asked to self-report their perceptions of cross-role interruptions, boundary control, and role identity centrality. Two existing instruments of virtuality were combined to create a virtual connectedness measure. Participants were asked to self-report their experiences with virtual work and electronic dependence. Responses to the items in each scale were summed and averaged.

Boundary Management Profiles

Kossek et al.'s (2012; see for measure) research suggests boundary management profiles can be derived from clusters of three variables: cross-role interruptions, boundary control, and role centrality. The variables, according to Kossek et al., are expected to

cluster together to represent different approaches to boundary management. Participants completed measures of the three variables using a 5-point Likert rating scale (1 = *strongly disagree* to 5 = *strongly agree*). In total, the measure consisted of 17 items.

Cross-Role Interruption Behaviors. Cross-role interruption behaviors are characterized by two types of interruptions; nonwork interrupting work behaviors (five items), and work interrupting nonwork behaviors (five items). Participants responded to items such as "I take care of personal or family needs during work" (nonwork interrupting work; $\alpha = .74$) and "I regularly bring work home" (work interrupting nonwork; $\alpha = .85$).

Boundary Control. Boundary control considers the extent to which individuals perceive control over the way they manage work and home domains. Kossek et al. (2012) modeled their scale after existing measures, such as Kossek et al.'s (2006) psychological job control scale. Participants responded to three items such as "I control whether I am able to keep my work and personal life separate" ($\alpha = .89$).

Role Centrality. Role identity centrality concerns the extent to which an individual identifies with work roles (two items) and family roles (two items). Participants responded to items from Kossek et al.'s (2012) original measure, such as "I invest a large part of myself in my work" (work identity; $\alpha = .73$) and "I invest a large part of myself in my family life" (family identity; $\alpha = .87$).

Virtual Connectedness

Two existing instruments were used to create a virtual connectedness measure for this study. Very few measures exist to examine employee virtual connectedness. Chudoba et al.'s (2012) 12-item measure of virtuality is cited frequently but the measure itself has not been extensively tested. Chudoba et al.'s measure was used in the present study because it provided a comprehensive representation of several different components of virtual work. Specific types of communication technologies were not considered in Chudoba et al.'s (2005) measure. Gibson and Gibbs' (2006) measure of electronic dependence, which includes email, teleconferencing, and collaborative software, was added to Chudoba et al.'s existing measure to provide a more thorough representation of virtual connectedness. In addition, several additional types of electronic media (one-on-one phone conversations, videoconferencing, text messaging, and instant messaging) were added to those already present in the measure to represent various types of technology used in the workplace. The measure utilized a 6-point Likert scale representing frequency of experiences and use of communication technologies (1 = *never* to 6 = *daily*).

Items measuring virtual connectedness represented issues such as collaborating across time zones, working at home during

business hours or while traveling, and working with different types of people on different projects, in addition to considering the extent to which participants used various communication technologies to conduct their work. A principle components analysis was conducted with varimax rotation. Criteria for factor extraction included an eigenvalue > 1.00 with items loading at .60 or greater and not cross-loading at .40 or greater on another factor. Six items loaded onto the first factor and together accounted for approximately 35% of the variance. These factors included: collaborating with people in different time zones, working with people via Internet-based conferencing applications, working at home during normal business days, working while traveling, and use of teleconferencing and videoconferencing. This factor is labeled virtuality. Three additional items loaded on a second factor at .60 and above and accounted for eight percent of the variance. These items included working on projects that have changing team members, working with teams that have different ways to track their work, and working with people that use different collaboration technologies. This factor is labeled variety of practices. Both factors are reliable (α = .82 and .85, respectively). Three other two-item factors had factor loadings at $\geq$ .60, but were not reliable. Four items failed to load on any factor; those items were therefore dropped from the scale. The two factors representing virtuality and variety of practices were used in study analyses and referred to as virtual connectedness. See Table 2 for items and factor loadings.

Table 2. Factor analysis results

Factors	1	2	3	4	5
Virtuality					
Collaborating with people in different time zones	**.616**	.295	.291	.142	-.144
Working with people via Internet-based conferencing applications	**.709**	.213	.319	.207	.001
Working at home during normal business days	**.699**	.179	-.227	-.012	.303
Working while traveling (e.g., at airports or hotels)	**.685**	.241	.021	-.085	.341
Teleconferencing	**.612**	.264	.222	.380	-.020
Videoconferencing	**.657**	-.024	.295	.171	.164
Variety of Practices					
Working on projects that have changing team members	.159	**.802**	.145	.051	.060
Working with teams that have different ways to track their work	.225	**.768**	.226	.188	.121
Working with people that use different collaboration technologies	.309	**.695**	.237	.199	.244
Collaborating with people you have never met face-to-face	.195	.293	**.660**	.250	-.030
Collaborating with people who speak different native languages or dialects from your own	.076	.141	**.787**	-.215	.037
Email	.184	.007	-.007	**.800**	.158
One-on-one phone conversations	.062	.241	.072	**.760**	.082
Text messaging	.029	.064	.077	.095	**.862**
Working at different sites	.202	.248	.397	.127	.315
Having professional interaction with people outside the organization	.173	.344	.531	.395	.021
Working with mobile devices	.203	.417	-.042	.102	.590
Collaborative software	.433	.241	.240	.351	-.017
Instant messaging	.304	-.120	.440	.210	.401
Eigenvalue	6.66	1.55	1.29	1.28	1.09
% of Variance	35.05	8.18	6.83	6.74	5.74

Results and Discussion

Boundary Management Profiles

A K-means cluster analysis was conducted with *six* clusters as identified by Kossek et al. (2012) to explore the relationship between boundary management profiles and virtual connectedness. The results were not easily interpretable. The cluster analysis was conducted again specifying *five* clusters; this test converged at 11 iterations and was easily interpretable, representing a clear match to five boundary management profiles identified by Kossek and colleagues (2012). To be sure a five-cluster solution was appropriate, the analysis was run again with four clusters specified. Results of the K-means clustering with four clusters were not as easily interpretable and did not provide a good match to Kossek et al.'s (2012) proposed clusters. A decision to use five clusters was made based on an analysis of how closely those clusters aligned with those proposed by Kossek et al. (2012), including Work Warriors, Reactors, Fusion Lovers, Family Guardians, and Dividers. A sixth cluster originally identified by Kossek et al. was characterized by individuals with high identity with other life pursuits unrelated to work and family. The cluster was not clearly defined in Kossek et al.'s original work and also was not represented in the current study data. The five boundary management profiles that emerged are important to note, as they provide support for research question one and the applicability of the distinct profiles.

Weak Boundaries and Virtual Connectedness

Hypothesis one predicted that individuals who cluster into the Reactor and Work Warrior boundary management clusters would report high levels of virtual connectedness. A Pearson's correlation analysis revealed significant relationships between virtual connectedness and Reactors, $r(239) = .167$, $p < .01$, Work Warriors, $r(239) = .188$, $p < .01$ *and* Fusion Lovers, $r(239) = .215$, $p < .01$. Results for the Reactors and Work Warriors indicate that a certain type of employee who works under more virtual conditions may experience less control over managing their work-life boundaries, suggesting that some participants who scored higher on the virtual connectedness scale perceived that they did not have a choice in separating their work and home role domains. Based on the qualities of the Reactor and Work Warrior clusters, these results partially support the hypothesis. Reactor and Work Warrior profiles are both comprised of individuals who struggle to demarcate specific boundaries between their home and personal lives, which are likely further exacerbated by the notion of being constantly connected through communication technologies. Struggling to maintain boundaries aligns with more recent research that has suggested that virtual work blurs the boundaries of work and home, making it difficult to keep the two separate.

Extant literature suggests that organizational trends in telework and technology use continue to influence, and are influenced by, societal trends and expectations, indicating that the increasing connectivity of our world may be transcending boundaries in many different ways. Since individuals with a typical Reactor or Work Warrior profile tend to struggle to maintain distinct and separate work and life spaces, they are likely to similarly struggle navigating work and life in the COVID-19 era. From some perspectives, technology replaces human beings in workplace roles, leading to overconnected, hyper-stimulated, impersonal interactions in everyday and workplace encounters. The COVID-19 pandemic presents a contrasting narrative of technology and telework as a lifeline for companies and employees. The Reactor and Work Warrior perspective provides insight into the ways in which technology and connectedness can create challenges for those struggling to maintain boundaries around work and home, despite the convenience or useful aspects of telework flexibility.

Integrated Boundaries and Virtual Connectedness

Results of hypothesis one also provide evidence to suggest that there may be conditions where virtual connectedness may *not* necessarily make keeping home and work domains separate more difficult. Interestingly, those in the Fusion Lovers profile also reported high levels of virtual connectedness, but such individuals are typically classified as having high levels of boundary control. Fusion Lovers use this control, however, to integrate work and home life. In this case, communication technologies may actually provide additional agency for those who are very connected and prefer autonomy in the way that they allow their work and personal lives to interact. In this case, technology seems to facilitate higher levels of boundary control experienced by Fusion Lovers, rather than negatively influencing one's ability to meaningfully enact any boundaries. Hypothesis one was partially supported.

Fusion Lovers tend to actively integrate their work and home life, so it is not entirely surprising that those individuals report a positive relationship with virtual connectedness. Fusion Lovers likely regularly utilize communication technologies to complete their work and manage their families across domains. Reactors and Work Warriors, however, do not typically prefer to integrate and instead allow work to bleed into their personal life domain. Those who fall into these two clusters likely do not control when and where they complete their work, taking work phone calls at home or working from the road, or dealing with family while they are at work. Fusion Lovers, Reactors, and Work Warriors all scored similarly in the work interrupting nonwork category (M = 3.65, 3.49, 3.85, respectively), in that they all allow such interruptions to a fairly large extent, and far above the average of the five profiles. A Pearson's correlation

analysis shows that virtual connectedness is positively correlated with work interrupting nonwork behaviors, $r(240) = .509$, $p < .01$, indicating that the more virtually connected an individual is, the more likely they are to allow work to interrupt their personal lives, and the less control they have over managing their boundaries. Importantly, Fusion Lovers perceive themselves to have control over *how* they integrate those interruptions. In a sense, communication technologies allow Fusion Lovers further autonomy in the way that they choose to allow work and home life to interact.

Strong Boundaries and Virtual Connectedness

Significant negative relationships were also identified between virtual connectedness and control over maintaining boundaries between work and home for Dividers, $r(239) = -.274$, $p < .01$ and Family Guardians, $r(239) = -.231$, $p < .01$. Individuals in these clusters prefer to maintain separation between their work and their personal lives, and those who reported less virtual connectedness often had more control in doing so. Comparing results from Dividers and Family Guardians to those profiles reporting more virtual connectedness suggests that those who do not *intentionally* separate their work and personal lives struggle more when they are very virtually connected. A condition of virtual connectedness in general may be that the more virtually connected an individual is, the more they perceive challenges in controlling when and how work interrupts home life, and vice versa – with the exception of Fusion Lovers. Hypothesis two was supported.

As the workplace continues to seep into the personal lives of many, actively choosing when and how to enact boundaries appears to become increasingly more difficult. As expectations for individuals to be regularly available via some form of communication technology continue to grow, so do the challenges of maintaining a healthy balance between work and home. Such an assumption could, however, be a bit nearsighted. The Millennial generation officially became the largest generation in the United States labor force, at 56 million in 2017 (Fry, 2018). Generation Z will soon follow. Millennials, often referred to as “digital natives”, use communication technologies differently than other generations, easily surpassing Generation X, Baby Boomers, and the Silent Generations in social media use and ownership of smartphones and tablet computers (Vogels, 2019). The Millennial generation (and those that will come after) grew up learning how to use technology in a way that may allow them to more easily integrate their home and work life by the time they enter the working world. According to Gong, Ramkissoon, Greenwood, and Hoyte (2018), Millennials are wired to be adaptable, preferring flexibility in the way that they manage their work, and operating as innovators where they introduce new behaviors into pre-existing roles. The sense of empowerment

and autonomy that Millennials likely feel from their lived experiences may lead to a shift in the way that the majority of boundaries are managed in the future working world.

The results of this research provide evidence that distinct boundary management profiles exist, but that virtual connectedness may impact the ways in which boundaries are maintained. Determining whether boundary management styles are a condition of connectedness, or even if boundaries are truly enacted, is difficult as some individuals may report preferences that they may or may not actually regularly enforce. Results point to an important consideration for the future of the labor force, emphasizing the role of context and societal and organizational conditions in managing work-life boundaries.

Conclusions and Future Directions

This research contributes to conversations about virtual connectedness and sheds light on the challenges of nontraditional work arrangements. Further describing and defining the potential influence of virtual connectedness on employee behaviors is important. The research represented in this study indicates that, when it comes to boundary management, virtual connectedness is a key factor in the choices and potential challenges an employee faces in managing work and home boundaries. Some employees may struggle with shifting expectations for connectivity across boundaries, while others may thrive.

Being virtually connected continues to evolve in concept and in practice, making measuring virtual connectedness difficult. Developing a measure for virtual connectedness that could evolve along with technological innovation and organizational and societal trends would be an incredibly useful tool to assess and understand the experiences of virtual employees. And, since the data collected for this study was collected prior to the COVID-19 pandemic, the reality of life as a teleworker in the wake of the crisis has likely shifted in important ways. Indeed, the level of virtual connectedness may not matter so much as the expectation of being constantly connected, available, and accessible. Managing boundaries in an increasingly boundaryless world presents unique challenges for employees and those who manage them.

In May of 2020, Facebook CEO Mark Zuckerberg announced that he and his leadership team will spend the next decade shifting half of the company to a remote workforce, and adjusting recruitment efforts to more broadly connect with potential employees around the world (Lerman & Dwoskin, 2020). Many organizations will likely consider similar shifts. Effects of the COVID-19 crisis will be felt throughout organizations around the world, and for years to come. Before the COVID-19 pandemic, workplace trends indicated organizations would continue to use technology and

alternative work arrangements to meet employee and societal demands. Post-pandemic, alternative work arrangements will become more commonplace. Technology will continue to both challenge and complicate the way human beings manage work and home boundaries, making boundary management research increasingly relevant. This study offers several important implications for boundary management and virtual connectedness, solidifying that boundary management preferences can be grouped into specific profiles and suggesting a *different* type of workforce and a different *type* of worker with different needs, preferences, and skills may also change the landscape of today's organizations and boundary management strategies. Determining how age and generational membership influences choice in the way boundaries are managed, and in a post-COVID-19-pandemic world, is a crucial next step in understanding employee experiences and well-being.

References

Ashforth, B. E., Kreiner, G. E., & Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review, 25,* 472-491. https://doi.org/10.5465.amr.2000.3363315

Brazeau, G. A., Frenzel, J. E., & Prescott, W. A. (2020). Facilitating wellbeing in a turbulent time. *American Journal of Pharmaceutical Education, 84*(6), 688-691. https://doi.org/10.5688/ajpe8154

Brenan, M. (2020, April 3). *U.S. workers discovering affinity for remote work.* Gallup. https://news.gallup.com/poll/306695/workers-discovering-affinity-remote-work.aspx

Centers for Disease Control and Prevention. (2020, May 6). *Interim guidance for businesses and employers responding to Coronavirus disease in 2019 (COVID-19).* https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html

Charalampous, M., Grant, C. A., Tramontano, C., & Michailidis, E. (2019). Systematically reviewing remote e-workers' well-being at work: A multidimensional approach. *European Journal of Work and Organizational Psychology, 28,* 51-73. https://doi.org/10.1080/1359432X.2018.1541886

Chudoba, K. M., Wynn, E., Lu, M., & Watson-Manheim, M. B. (2005). How virtual are we? Measuring virtuality and understanding its impact in a global organization. *Information Systems Journal, 15,* 279-306. https://doi.org/10.1111/j.1365-2575.2005.00200.x

Clark, S. C. (2000). Work/family border theory: A new theory of work/family balance. *Human Relations, 53,* 747-770. https://doi.org/10.1177/0018726700536001

Desrochers, S., & Sargent, L. D. (2004). Boundary/border theory and work-family integration. *Organizational Management Journal, 1,* 40-48. https://doi.org/10.1057/omj.2004.11

Fry, R. (2018, April 11). *Millennials are the largest generation in the U.S. labor force*. Pew Research Center. https://www.pewresearch.org/fact-tank/2018/04/11/millennials-largest-generation-us-labor-force/

Gibson, C. B., & Gibbs, J. L. (2006). Unpacking the concept of virtuality: The effects of geographic dispersion, electronic dependence, dynamic structure, and national diversity on team innovation. *Administrative Science Quarterly, 51,* 451-495. https://doi.org/10.2189/asqu.51.3.451

Gong, B., Ramkissoon, A., Greenwood, R. A., & Hoyte, D. S. (2018). The generation for change: Millennials, their career orientation, and role innovation. *Journal of Managerial Issues, 1,* 82-96.

Hall, D. T., & Richter, J. (1988). Balancing work life and home life: What can organizations do to help? *Academy of Management Executive, 3,* 213-223. https://doi.org/10.5465/ame.1988.4277258

Hecht, T. D., & Allen, N. J. (2009). A longitudinal examination of the work-nonwork boundary strength construct. *Journal of Organizational Behavior, 30,* 839-862. https://doi.org/10.1002/job.579

Qvortrup, L. (2002). From teleworking to networking: definitions and trends. In P. J. Jackson & J. M. van der Wielen (Eds.), *Teleworking: New international perspectives from telecommuting to the virtual organisation* (pp. 21-39). Routledge. https://doi.org/10.4324/9780203053089

Kochhar, R., & Passel, J. S. (2020, May 6). *Telework may save U.S. jobs in COVID-19 downturn, especially among college graduates.* Pew Research Center. https://www.pewresearch.org/fact-tank/2020/05/06/telework-may-save-u-s-jobs-in-covid-19-downturn-especially-among-college-graduates/

Kossek, E. E., & Distelberg, B. (2009). Work and family employment policy for a transformed work force: Trends and themes. In N. Crouter & A. Booth (Eds.), *Work-life policies that make a real difference for individuals, families, and organizations* (pp. 3-51). Urban Institute Press.

Kossek, E. E., & Lautsch, B. (2008). *CEO of me: Creating a life that works in the flexible job age.* Warton School Publishing.

Kossek, E. E., Lautsch, B., & Eaton, S. C. (2006). Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work-family effectiveness. *Journal of Vocational Behavior, 68,* 347-367. https://doi.org/10.1016/j.jvb.2005.07.002

Kossek, E. E., Noe, R., & DeMarr, B. (1999). Work-family role synthesis: Individual, family and organizational determinants. *International Journal of Conflict Resolution, 10,* 102-129. https://doi.org/10.1108/eb022820

Kossek, E. E., Ruderman, M. N., Braddy, P. W., & Hannum, K. M. (2012). Work-nonwork boundary management profiles: A person-centered approach. *Journal of Vocational Behavior, 81,* 112-128. https://doi.org/10.1016/j.jvb.2012.04.003

Kreiner, G. E., Hollensbe, E. C., & Sheep, M. L. (2009). Balancing borders and bridges: Negotiating the work-home interface via boundary work tactics. *Academy of Management Journal, 52,* 704-730. https://doi.org/10.5465/AMJ.2009.43669916

Lerman, R., & Dwoskin, E. (2020, May 21). *Facebook will now let some employees work from anywhere, but their paychecks could get cut.* The Washington Post. https://www.washingtonpost.com/technology/2020/05/21/facebook-permanent-remote-work/

Li, J., & Yuan, B. (2018). Smartphone intrusion: Has social interaction online blurred the work-life boundary of employees? *Cornell Hospitality Quarterly, 59,* 411-427. https://doi.org/10.1177/1938965518777217

Major, D. A., & Germano, L. M. (2006). The changing nature of work and its impact on the work-home interface. In F. Jones, R. J. Burke, & M. Westman (Eds.), *Work-life balance: A psychological perspective* (pp. 13-38). Psychology Press.

Mello, J. A. (2007). Managing telework programs effectively. *Employee Responsibilities and Rights Journal, 19,* 247-261. https://doi.org/10.1007/s10672-007-9051-1

Nansen, B., Arnold, M., Gibbs, M., & Davis, H. (2010). Time, space and technology in the working-home: An unsettled nexus. *New Technology, Work and Employment, 25,* 136-153. https://doi.org/10.1111/j.1468-005X.2010.00244.x

Nippert-Eng, C. (1996). Calendars and keys: The classification of "home" and "work". *Sociological Forum, 11,* 563-582. https://doi.org/10.1007/BF02408393

Park, Y., & Jex, S. M. (2011). Work-home boundary management using communication and information technology. *International Journal of Stress Management, 18,* 133-152. https://doi.org/10.1037/a0022759

Vogels, E. A. (2019, September 9). *Millennials stand out for their technology use, but older generations also embrace digital life.* Pew Research Center. https://www.pewresearch.org/fact-tank/2019/09/09/us-generations-technology-use/

Walzenegger, L., McKenna, B., Cai, W., & Bendz, T. (2020). An affordance of team collaboration and enforced working from home during Covid-19. *European Journal of Information Systems.* https://doi.org/10.1080/0960085X.2020.1800417

Wiesenfeld, B. M., Raghuram, S., & Garud, R. (1999). Communication patterns as determinants of organizational identification in a virtual organization. *JCMC, 4*, 1-24. https://doi.org/10.1111/j.1083-6101.1998.tb00081.x

Keeping it Casual or Lifelong Connection? The Effect of Digital Affordances on Attraction in an Online Dating Profile

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Dating has changed significantly in the past 30 years. New methods of finding a partner have evolved with the changing media and online dating sites influence these communication processes. In this experiment, we examined how digital affordances influenced attraction. Participants (n = 315) were randomly assigned to view an online dating profile from either eHarmony, Tinder, or Craigslist and asked to report their romantic, social, and physical attraction. Our results indicated the language, the website, and the sex of the profile owner influence romantic attraction. Additionally, the language and the website influence social attraction and the photograph influences physical attraction. We argue that digital affordances of disparate dating sites are not equal to one another, as design differences influence how users interpret the romantic, social, and physical attraction of online dating profiles; considering the recent closure of Craigslist's dating section, the future of romantic, social, and physical attraction may increasingly be bound to the technical pressures of an increasingly photo-centric online dating industry.

Introduction

U.S. experience with and public perception of online dating sites and applications (ODSAs) has improved significantly with 27% of all 18-24 years olds having used an ODSA and 59% of all U.S. adults holding a positive attitude towards online dating (Smith & Anderson, 2016). As Leigh Gallagher (2018) of Fortune Magazine notes, however, "for all the attention it garners, online dating is not a large industry—total U.S. revenue last year was $2.9 billion." To put this into perspective, Netflix earned $3.28 billion in the fourth quarter of 2017 alone (McAlone, 2018). Yet, it is precisely because of the comparatively small size of the industry in relation to its market potential that online dating and ODSAs in particular warrant study: "globally, there are 600 million singles online […] yet the industry's biggest player by far, Match Group is estimated to claim just 10% of that" and total "industry revenue is expected to grow 25% through 2020" (Gallagher, 2018). For a small industry, its ubiquity lends itself to potentially influencing users' relationship formation. As a common way of meeting a potential partner, understanding this industry, and more specifically, the digital affordances of the platforms, will aid users in more effectively designing their dating profiles in a way that accomplishes their personal dating goals.

The consequence of this market optimism is that, for an industry of its size, the online dating market is incredibly saturated with an estimated 2,500 ODSAs in the U.S. alone and 8,000 worldwide (Zwilling, 2013). Likewise, even though the industry is

highly profitable, startup costs are high in terms of economic, technical, and social capital, as "no one wants to use a dating site with only a few users" and "it's hard to invent and patent more 'scientific' methods on how to match people" (Zwilling, 2013). The consequence is that at the very same moment in which the proliferation of ODSAs have led to an increased need for online dating platforms to differentiate themselves, the industry has increasingly become heavily concentrated and is in fact dominated by a handful of key players (Niesen, 2016). Indeed, the largest online dating service provider, Match Group, owns over 40 ODSAs, such as Tinder, OkCupid, Plenty of Fish, and Match.com; likewise, the smaller Spark Networks owns a number of religious-oriented ODSAs, such as Jdate, Christian Mingle, Adventist Singles, and LDS Singles (see Spark Networks, 2019). The consequence of this market concentration *and* proliferation of ODSAs is that an increasing number of online dating sites rely on the same underlying algorithms and interfaces, meaning that the only substantial difference is the micro-targeting of and marketing to specific audiences (Niesen, 2016). In functional terms, what this suggests is that the ODSA rhetoric and relational formation process is becoming increasingly normative, with users being exposed to similar rhetoric *and* relational formation processes across a number of ODSAs.

As a result, although niche-markets exist, the ODSA market has begun to coalesce around particular online dating genres. Indeed, platforms like eHarmony, Tinder, and Craigslist have captured the online dating cultural imaginary—in terms of perceived purpose, safety, and legitimacy—and thus are representative of three distinct ODSA genres. eHarmony is recognized as one of the most popular subscription-based ODSAs, and is well-known for its emphasis on marriage (O'Brian, 2016; Niesen, 2016). Tinder is recognized as one of the most popular mobile dating ODSAs, and is considered a platform for casual sex (Niesen, 2016; Sales, 2015). Although Craigslist recently shut down its online dating services due to pressure from anti-online sex trafficking legislation (Pulliam-Moore, 2018), the site was an important, free and anonymous alternative ODSA for ostracized communities (Rosenbaum, Daunt, & Jiang, 2013) and for popularizing the stereotype of online dating as a dangerous space due to a series of high profile murders associated with the website (Dewey, 2016). For these reasons, we consider these three websites as representative of the anxieties and desires associated with online dating—and thus are interested in how these anxieties and desires are codified in their platform design and the consequences of this codification.

These platform design choices, we argue, can influence specific impressions formed about the online dater. For example, eHarmony emphasizes finding a long-term mate; therefore, romantic

attraction, defined as "the extent to which one evaluates a target as potential a romantic partner" (Campbell, 1999, p. 1259) would be a common impression of online daters on a traditional dating site. Additionally, physical attraction plays an important role when dating regardless if in person or when assessing an online dating profile. Byrne, Ervin, and Lamberth (1970) found physical attraction was significantly related to perceptions of desirability for a date between strangers. Websites that emphasize a photograph, such as Tinder, then would strongly affect perceptions of physical attractiveness. Another possible impression formed from an online dating profile is that of social attraction. McCroskey and McCain (1974) define social attraction as the "liking" component of interpersonal attraction. In other words, social attraction involves wanting to be friends and hang out with a person (McCroskey & McCain, 1974). Online daters might not have a specific goal of a long-term romantic commitment, but simply a desire to meet a new friend. Text-based platforms that have a reputation as a dangerous space, as Craigslist did, then, would influence impressions of social attraction such that individuals may judge profiles on Craigslist as not socially attractive.

To better explore how ODSAs influence individuals, we sought to test the effects of three specific platform design choices: language, photo, and platform aesthetics. These three design choices were selected as each item constitutes the most salient features of a given online dating platform. Although algorithmic matchmaking is another important feature of online dating platforms, algorithms are often opaque to users (Andrejevic, 2012), and the algorithmic effect in online dating platforms is on the backend (matches), whereas we are interested in frontend effects (desire). Understanding these frontend effects matters, for in spite of the industry rhetoric of micro-targeting, ownership concentration within the ODSA industry has often led to users being exposed to similar algorithmic *and* rhetorical relational formation processes. Indeed, the need to understand these effects has only increased over the course of this research, as the recent shutdown of Craigslist's personal section *and* growing prominence of image-centric ODSAs, combined with the increasing popularity and acceptance of online dating, suggest that the range of ODSA genres is becoming increasingly limited. Our interest, hence, is in understanding the normative effect of these design choices on the relational formation processes.

To understand the impact online dating sites and applications platforms may have on users' impressions of attraction, our paper is organized as follows. First, we discuss the literature on interface analysis so as to establish a theoretical foundation for understanding the mechanics by which platforms may affect user experience. Second, we discuss our study recruitment procedures, experimental design method, and measures. Third, we document and

elaborate on our findings in the results and discussion section. Fifth, we conclude by discussing the implications, limitations, and possible directions for future research.

Interface Analysis

Communication technologies attempt to impose a communicative mandate by virtue of how a respective platform is designed. This is done by creating affordances, which refers to what an interaction design feature "*offers* the user, what it *provides* or *furnishes*" (Hartson, 2003, p. 316). Hartson (2003) argues that these affordances can be thought of as operating across four non-hierarchal parameters: physical, functional, cognitive, and sensory. A physical affordance refers to how the materiality or immateriality of a platform affects user-engagement and operation (Hartson, 2003). Stanfill (2015) defines the remaining three affordances as: "'functional affordance'—what a site can actually do; 'cognitive affordance'—how Users know what a site can do; and 'sensory affordance'—which 'enables the user in sensing (e.g., seeing, hearing, feeling) something'" (p. 1063; see also Hartson, 2003, p. 322). As it pertains to online dating, although physical and functional affordances matter (see Banks, Westerman, & Sharabi, 2017), because our particular interest is in the frontend effects platform design may have on the romantic interests of ODSA users, our study emphasizes cognitive and sensory affordances.

Cognitive Affordances

Although the interface effect emerges from the overlap, intersection, tension, and contradiction between disparate affordances, the notion of norms speaks well to the domain of cognitive affordances. The reason is because "what the designer cares about is whether the user perceives that some action is possible (or in the case of perceived non-affordances, not possible)" (Norman, n.d.). Hence, Hartson (2003) defines a cognitive affordance as that "design feature that helps, aids, supports, facilitates, or enables thinking and/or knowing about something" (p. 319). How users come to recognize or misrecognize the functional purpose of a platform matters, for as Stanfill (2015) argues, "what a feature or menu or header is called matters, as these statements define what the user [believes they are doing] by selecting that feature or option" (p. 1063).

As it pertains to online dating platforms, it matters, for instance, that eHarmony's website header states "#1 Trusted Dating Site for Like-Minded Singles" or that "**RIGHT** FROM THE ***START*** [emphasis in original]" is prominently featured on the homepage. These two elements operate as cognitive affordances in that they are attempts to make it clear to the user the functional purpose of the website. Although one could utilize eHarmony for a variety of relational ends, eHarmony's cognitive affordances denote that the

only satisfactory outcome is a long-term, monogamous heterosexual relationship culminating in marriage.

In the current study, the cognitive affordances of interest are the style of language and photograph that is included with each profile. First, because *language* encourages a user to adopt a particular subject position (Althusser, 1970/2006), we follow Stanfill's (2015) lead and associate this variable as primarily about manipulating cognitive affordances. Second, we classify *photos* as a cognitive affordance because techniques of human representation are "fundamentally […] about the body and the operation of social power," and transformations of visuality are "inseparable from [broader reorganizations] of knowledge and social practices that [modify] in myriad ways the productive, cognitive, and desiring capacities of the human subject" (Crary, 1992, p. 3). Analyzing the effect of photographs, then, allows us to understand how these "images construct specific views of the social world" (Rose, 2012, p. 192). For instance, though Hitsch, Hortaçsu, and Ariely (2010) find that preferences for psychological and social similarity constrain the effects that physical attractiveness might otherwise have on decisions to initiate a romantic relationship, considering that "decades of psychology research" shows that "initial physical attractiveness is often associated with other positive attributes," for those platforms that can accommodate them, photographs play a central role in decisions to initiate romantic encounters (Tyson, Perta, Haddadi, & Seto, 2016, p. 2). Cognitive affordances influence users' experience with the platform; therefore, we predict:

> H1: Language use influences attraction towards an online dater such that language seeking a serious relationship results in higher a) romantic attraction and b) social attraction than language seeking a casual hook-up.
>
> H2: The photograph influences interpersonal impressions of an online dater such that a dressed up photograph results in higher physical attraction than a casually dressed photograph or no photograph.

Because cognitive affordances facilitate what users think and/or know within the website (Hartson, 2003), we can clearly hypothesize about the effects of language and a photograph on romantic and social attraction. However, it is unclear how the language used in the profile influences impressions of physical attraction, if at all. Similarly, it is not known how a photograph might directly affect impressions of romantic and social attraction. Therefore, we pose the following research questions:

> RQ1: How does language affect physical attraction?
>
> RQ2: How does the photograph affect (a) romantic and (b) social attraction?

Sensory Affordances

If functional affordances are about what a platform can do, and cognitive affordances are about what a user believes they are (or should be) doing, sensory affordances refer to those design decisions that communicate the value, attitude, or orientation one should adopt when engaging with this platform (Stanfill, 2015). For instance, though Craigslist and Tinder each have a reputation for being hookup platforms, their differences in sensory affordances marks them as starkly different platforms and would therefore influence impressions. Craigslist's aesthetics of blue hyperlinks, black text, expansive white background, and optional (but often not included) pictures communicates sexual desire in utilitarian, imperative terms: "Live out fantasies!!" "Pregnant and Fucking tonight…….!!!!" "Looking to fuck in [city] real person here" "If you like chubby bearded guys please read!!" "Friend and smoke buddy" "[City] Snapping." In contrast, Tinder's colorful and image-centric aesthetics communicates sexual desire in playful terms (David & Cambre, 2016).

In the current study, the sensory affordance of interest was the *platform aesthetics* of the dating profile, which can include items such as background color, font size and color, image size, and general item location, and platform layout. These manipulations were codified in terms of participants viewing one of three dating websites: Craigslist, eHarmony, or Tinder. These aesthetics from these three platforms served as models as they are popular dating platforms with a reputation for targeting distinct relational interests and practices (Costa, 2013; Niesen, 2016; Rosenbaum et al., 2013). Based on the sensory affordances of different dating platforms, we hypothesize:

H3: Platform aesthetics influence attraction towards an online dater such that:

a) eHarmony profile results in the highest romantic attraction of the three websites and the Craigslist profile results in the lowest romantic attraction of the three websites.
b) Tinder results in higher physical attraction than an eHarmony profile or a Craigslist profile.
c) Craigslist results in lower social attraction than eHarmony and Tinder.

However, since Craigslist emphasizes casual, usually sexual, outcomes but rarely includes a photograph, we do not know how the sensory affordances of Craigslist affect physical attraction. Additionally, the sensory affordances of Tinder and eHarmony do not guide us in predicting impressions of social attraction. Therefore, we pose the following research questions:

RQ3: What effect does Craigslist have on physical attraction as compared to eHarmony and Tinder?

RQ4: What effect does eHarmony and Tinder have on social attraction as compared to Craigslist?

Of course, digital affordances do not influence users' experience in isolation. Cognitive and sensory affordances interact together to influence impressions users might form. For example, since Tinder has a reputation as a "hook-up" website, casual language could lead to more positive impressions of the online dater because the casual language meets expectations of the Tinder user. On the other hand, eHarmony users would not expect to read a profile seeking a casual hook-up and therefore, they would evaluate a casual profile as less attractive. That is, the sensory affordance of platform aesthetics could interact with the cognitive and functional affordances of language and photographs to influence users' impressions of attractiveness. Therefore, we pose the following research question:

RQ5: In what ways do the digital affordances interact together to influence a) romantic, b) social, and c) physical attraction?

Method

The design of the experiment was a 3 (website: Tinder, Craigslist, eHarmony) x 2 (language: seeking casual or seeking serious) x 3 (photo: casual, dressed-up, or absent) between-subjects experimental design. Given the design of the websites, some conditions were not fully crossed. The Craigslist profile did not contain a photo and the Tinder profile did not contain full body text like the other profiles. This resulted in ten experimental conditions. Additionally, the number of profiles was doubled to account for sex of the profile owner.

Participants

Participants in the study were collected from Amazon's Mechanical Turk (MTurk). Three hundred fifty workers participated in this study originally. However, to ensure quality data, participant data were removed if they viewed the dating profile less than five seconds. Thirty-five participants' data were eliminated from analysis, resulting in 315 participants. Participants ranged in age from 20 to 73 years old (M = 37.38, SD = 10.41, $Med.$ = 35.00). Males made up 53.3% of the sample (n = 168) and females made up the remaining 46.3% (n = 146), with one participant indicating "Other" as their sex. Regarding sexual orientation, 281 participants identified as heterosexual, 10 as homosexual, 19 as bisexual, two identified as "Other" and one participant preferred not to indicate their sexual orientation. Two participants did not answer that question. Two hundred fifty-three were White/Caucasian, 31 were Black or African-American, 15 were Asian, 11 were Hispanic, two were American

Indian or Alaska Native, and three identified themselves as some other ethnicity. The sample, all residing in the United States, was dispersed geographically with 129 from the South, 39 from the West, 81 from the Northeast, and 66 from the Midwest. Forty-five participants had a high school degree or GED, 85 participants had completed some college, 39 completed a two-year degree, 116 had completed a four-year degree, 18 had a Master's degree, three had a doctoral degree, and nine reported having a professional degree such as a juris doctorate or a medical degree.

Concerning relationships and online dating, 129 participants were married, 59 were in a serious relationship, 13 were in a casual relationship, 25 were divorced, seven were separated, four were widowed, and 78 were single. When asked if they had ever dated someone they initially met online, our sample was pretty evenly divided with 52.4 percent (n = 165) indicating they had, and 46.7% (n = 147) indicating they hadn't. Three participants preferred not to answer. When asked how likely participants were to use online dating in the future, participant responses were spread. Forty-one said extremely likely, 70 were somewhat likely, 59 were neither likely nor unlikely, 63 were somewhat unlikely and 82 were extremely unlikely. And finally, when asked which type of online dating platform they would prefer to use, 106 participants indicated they would prefer a desktop-serious site, defined as a dating site that is primarily for use on your home computer, with a focus on finding your soul mate rather than just any person. Forty-nine participants indicated they would prefer a desktop-serious site that is primarily for use on your home computer, with a focus on finding any person rather than your soul mate. Seventy-nine participants said they would prefer a mobile-casual site that is primarily used on the mobile phone and uses your location to match you with singles in your area. Lastly, 81 participants said they would prefer a mobile-serious site that is primarily used on the mobile phone and helps you find your soulmate by using your location and a personality questionnaire.

Procedure

Information regarding the study, such as procedures and requirements, was posted in the Human Intelligence Tasks (HIT) description on MTurk. Workers who accepted the HIT were directed to an online survey hosted on Qualtrics.com. The first page of the study contained the consent form. If they agreed to participate, they were directed to items assessing their love style (not analyzed in this study). Next, respondents were asked to which sex they are primarily attracted, which determined if they were assigned a male or female profile to assess. They were then randomly assigned to view one of ten dating profiles. After viewing the webpage, participants completed items assessing the variables of interest. Participants who

completed the study were compensated $2.00. This study was approved by the researcher's Institutional Review Board.

Conditions

The context of the experiment was online dating profiles. Demographic information of the profile owner was kept consistent across conditions. Participants were advised they were viewing a screenshot of a dating profile so no hyperlinks were active. Dating profiles were varied across three independent variables: language, photo, and platform aesthetics.

The first variable of interest was *language* of the profile. This variable was dichotomized to indicate the profile owner was seeking either a casual hook-up or a committed relationship. In keeping with the affordances associated with each individual platform aesthetic, the Tinder condition does not contain any experimentally manipulated body text, though Tinder does allow for the presence of short bios. Tyson et al. (2016) found that 36% of users have no bio (42% female and 30% male) and most that do have bios with 100 characters or less (the maximum is 500). Hence, we follow Tyson et al.'s (2016) lead and limit our Tinder language manipulation design to a short header sentence.

The second independent variable was *photos*. Profiles included either a male or female photo in which the profile model was dressed casually or dressed more formally. Casual dress included un-styled hair and a simple gray sweatshirt for both male and female models. Formal attire included a dress and jewelry for the female and a suit and tie for the male. The female and male models were the same people in all photos. All photos were posed as a selfie in a vehicle, since a recent study showed the most popular selfie pose was in a vehicle (Deeb-Swihart, Polack, Gilbert, & Ess, 2017). Not all platforms accommodate or feature photographs; for instance, Rosenbaum et al. (2013) found that most Craigslist personals do not include pictures (23.5% include face pictures and 11% include genital pictures). Since Craigslist's platform aesthetic does not emphasize photographs, and due to our interest in understanding how affordances affect the romantic interests of users, the Craigslist condition does not include any experimentally manipulated photographs.

The third variable of interest was the *platform aesthetics* of the dating profile. Participants viewed one of three dating websites: Tinder, Craigslist, and eHarmony. These platforms aesthetics were designed from screenshots of current versions of each website to ensure external validity.

Measures

Physical attraction was measured using eleven items from McCroskey, McCroskey, and Richmond (2006). Participants rated their level of agreement on a seven-point Likert scale ranging from

strongly disagree to strongly agree. Items included statements such as I think he/she is handsome/pretty, he/she is nice looking, and he/she has an attractive face. The original scale had twelve items, but "I don't like the way this person looks" was dropped because "I don't like the way he/she looks" was retained. Higher numbers indicate greater attraction ($\alpha = .97$).

Romantic attraction was measured using five items on a seven point scale from Campbell (1999). These items assessed the extent to which participants would want a relationship with the profile owner. Items included "How attractive do you find this person?," "How desirable would you find this person as a dating partner?," and "How much would you actually like to date this person?," with scale anchors of not at all and very much. Participants then answered the question, "How would you feel about yourself if you were dating this person?," with scale anchors of very bad and very good. Finally, participants responded to the question, "How do you think your friends would feel about you if you were dating this person?," with scale anchors of disapproving of me and approving of me. Higher numbers indicate greater attraction ($\alpha = .94$).

Social attraction was measured using twelve items on a seven-point Likert scale from McCroskey et al. (2006). Higher numbers indicate greater attraction ($\alpha = .94$). Participants indicated their level of agreement with statements such as "I think he/she could be a friend of mine," "he/she is sociable with me," and "he/she would be pleasant to be with."

Results

To test the hypotheses and answer the research questions, three 3x2x3 ANOVAs were conducted with romantic, social, and physical attraction as dependent variables. Initially, the ANOVAs included sex of the profile owner as an independent variable. Sex of the profile owner was only significant for romantic attraction, $F(1, 295) = 3.95$, $p < .05$, $\eta_p^2 = .01$. The specific effects of profile owner sex are discussed in the results of RQ5. However, there was no significant effect of sex for social, $F(1, 295) = 1.30$, $p = .26$, or physical attraction, $F(1, 295) = 2.46$, $p = .12$, so it was removed from analysis for those two dependent variables.

H1(a) predicted a main effect for the language used in the profiles such that profiles seeking a serious relationship would be evaluated as more romantically attractive than profiles seeking a casual relationship. This hypothesis was supported, $F(1, 295) = 18.00$, $p < .001$, $\eta_p^2 = .06$. A post-hoc t-test indicates profiles seeking a serious relationship ($M = 4.94$, $SD = 1.47$) were evaluated as more romantically attractive than profiles seeking a casual relationship ($M = 4.30$, $SD = 1.59$), $t(313) = -3.70$, $p < .001$.

H1(b) predicted a main effect for the language used in the profiles such that profiles seeking a serious relationship would be

evaluated as more socially attractive than profiles seeking a casual relationship. The hypothesis was supported, $F(1, 305) = 15.56$, $p < .001$, $\eta_p^2 = .05$. A post-hoc t-test shows profiles seeking a serious relationship ($M = 5.46$, $SD = 1.07$) were more socially attractive than profiles seeking a casual relationship ($M = 4.96$, $SD = 1.24$), $t(313) = -3.81$, $p < .001$.

H2 predicted a main effect for the photograph such that a dressed up photograph results in higher physical attraction than a casually dressed photograph or no photograph. Results showed a significant main effect for the photograph, $F(1, 305) = 10.27$, $p < .01$, $\eta_p^2 = .03$. Post-hoc tests show the dressed up photograph ($M = 5.75$, $SD = 0.96$) to be higher in physical attractiveness than the dressed down photograph ($M = 5.33$, $SD = 1.20$, $p < .01$) and higher than no photo ($M = 3.90$, $SD = 0.89$, $p < .001$). Additionally, the dressed down photograph was more physically attractive than no photo ($p < .001$).

The first research question asked how language affected impressions of physical attraction. There was no significant effect of language on physical attractiveness, $F(1, 305) = 2.57$, $p = .11$.

The second research question asked how the photograph influences impressions of romantic and social attraction. Results indicated no significant effect of the photograph on romantic attraction, $F(1, 295) = 1.28$, $p = .26$. Additionally, results indicated no significant effect of the photograph on social attraction, $F(1, 305) = 0.68$, $p = .41$.

H3 predicted a main effect for the platform aesthetics operationalized as three different websites (eHarmony, Tinder, or Craigslist). H3(a) predicted eHarmony will have higher evaluations of romantic attraction than Tinder and Craigslist and that Craigslist will have lower romantic attraction than both eHarmony and Tinder. Results showed a significant main effect for the website, $F(1, 295) = 4.42$, $p < .05$, $\eta_p^2 = .02$. However, a simple one-way post-hoc ANOVA, $F(2, 312) = 35.70$, $p < .001$, indicates no significant difference between eHarmony ($M = 4.79$, $SD = 1.44$) and Tinder ($M = 5.14$, $SD = 1.35$), $p = .12$. However, eHarmony and Tinder were significantly higher in romantic attraction than Craigslist ($M = 3.36$, $SD = 1.45$), $p < .001$. Overall, H3(a) was partially supported in that eHarmony was higher in romantic attraction than Craigslist, but not higher than Tinder. Also, Craigslist was significantly lower in romantic attraction than both eHarmony and Tinder.

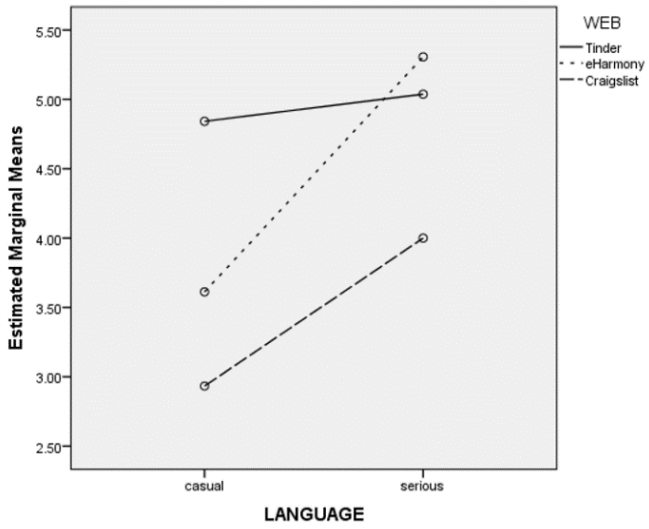
H3(b) predicted Tinder will be evaluated as having higher physical attraction than both eHarmony and Craigslist. Similarly, RQ3 asked what effect Craigslist has on physical attraction. Results showed no significant effect of the website on physical attractiveness, $F(1, 305) = 1.15$, $p = .29$. H3(b) was not supported.

H3(c) predicted Craigslist will have the lowest social attraction of the three websites. Similarly, RQ4 asked what effect eHarmony and Tinder had on social attraction. Results showed a significant main effect for the website, $F(1, 305) = 6.24$, $p < .05$, $\eta_p^2 = .02$. A simple one-way post-hoc ANOVA, $F(2, 312) = 24.42$, $p < .001$, shows a main effect for social attraction such that Craigslist ($M = 4.42$, $SD = 1.30$) has the lowest social attraction of the three websites ($p < .001$ for both Tinder and eHarmony). Tinder has the highest social attraction ($M = 5.60$, $SD = 0.97$) and was significantly higher than eHarmony ($M = 5.26$, $SD = 1.11$, $p < .05$). H3(c) was supported; all three websites differed from one another on social attraction with Tinder having the highest social attraction, eHarmony in the middle, and Craigslist having the lowest social attraction.

RQ5 asked in what ways the digital affordances interacted to influence a) romantic attraction, b) social attraction, and c) physical attraction. Regarding romantic attraction, the factorial ANOVA indicated significant two-way interactions between the website and the language used and between the language and the sex of the profile owner. Additionally, results showed a significant three-way interaction with the website, the language used, and the sex of the profile owner. To examine the three way- interaction in more detail, four ANOVAs were conducted split by the sex of the profile owner and the language used, with the website as the grouping variable and romantic attraction as the dependent variable. Post-hoc tests show the significant three-way interaction is driven by the male profiles (see Figure 1).

Figure 1

Significant Interaction between Language and Website on Romantic Attraction when Profile Owner is Male



For the male profiles seeking a casual relationship, there is a significant effect of the website, $F(2, 71) = 8.37$, $p < .01$. Examining this further, eHarmony ($M = 3.61$, $SD = 1.59$) and Craigslist ($M = 2.93$, $SD = 1.28$) do not differ in romantic attraction ($p = .33$). Tinder ($M = 4.79$, $SD = 1.53$) is significantly higher in romantic attraction than eHarmony ($p < .05$) and Craigslist ($p < .01$).

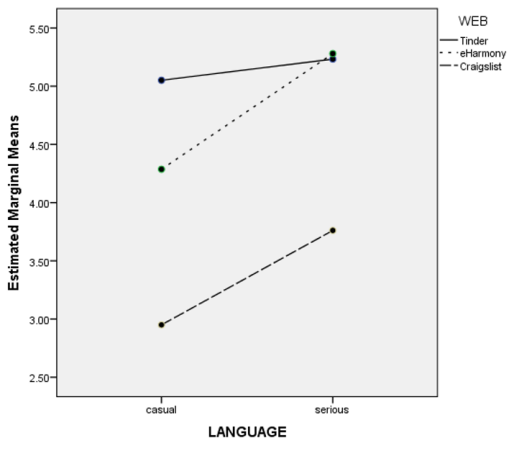
When the profile owner is male using serious language, there is still a significant effect for the website, $F(2, 71) = 4.14$, $p < .05$. However, different from the male profiles with casual language, Tinder ($M = 4.98$, $SD = 1.41$) and eHarmony ($M = 5.31$, $SD = 1.33$) do not differ from one another ($p = .69$), Tinder and Craigslist ($M = 4.00$, $SD = 1.89$) do not differ ($p = .10$), but eHarmony is significantly higher in romantic attraction than the Craigslist profile ($p < .05$). To put this more simply, for the male profiles using seeking a casual relationship, the Tinder profile was seen as more romantically attractive than the other profiles. When the male profiles are seeking a serious relationship, eHarmony is seen as more romantically attractive than Craigslist, but not more so than the Tinder profile. Tinder was also not different from the Craigslist profile.

For the female profiles, there was not a significant interaction between the website and the language used. Results showed a significant main effect for the website only, $F(2, 161) = 40.87$, $p < .001$. The main effect for the language used approached significance, $F(1, 161) = 3.38$, $p = .07$. Post hoc tests for the website showed that eHarmony ($M = 5.11$, $SE = 0.14$), and Tinder ($M = 5.36$, $SE = 0.15$) did not differ in romantic attraction ($p = .40$), but eHarmony and Tinder are both more romantically attractive than Craigslist ($M = 3.24$, $SE = 0.20$; $p < .001$). The main effect for language was only approaching significance for the female profiles, but the direction of the means show that the profiles seeking a serious relationship ($M = 4.74$, $SE = 0.13$) were slightly more romantically attractive than profiles seeking a casual relationship ($M = 4.40$, $SE = 0.13$).

RQ5(b) asked in what ways the affordances interacted to influence social attraction. Results show a significant interaction between the website and the language used, $F(1, 305) = 8.65$, $p < .01$, $\eta_p^2 = .03$ (see Figure 2)

Figure 2

Significant Interaction between Language and Website on Social Attraction



To examine the interaction in more detail, two post-hoc one-way ANOVAs were conducted, one with the serious language profiles and one with the casual language profiles, with website as the grouping variable and social attraction as the dependent variable. For the profiles seeking a casual relationship, $F(2, 155) = 17.61$, $p < .001$, results show a main effect with significant differences between all three websites. Tinder ($M = 5.57$, $SD = 1.08$) was evaluated as more socially attractive than eHarmony ($M = 4.85$, $SD = 1.15$, $p < .01$) and Craigslist ($M = 4.13$, $SD = 1.15$, $p < .001$). Additionally, eHarmony was more socially attractive than Craigslist ($p < .01$).

When the profiles were seeking a serious relationship, $F(2, 154) = 12.37$, $p < .001$, Tinder ($M = 5.63$, $SD = 0.85$) and eHarmony ($M = 5.70$, $SD = 0.88$) did not differ in social attractiveness ($p = .93$). However, both Tinder and eHarmony were more socially attractive than Craigslist ($M = 4.70$, $SD = 1.39$, $p < .001$ for both Tinder and eHarmony).

RQ5(c) asked in what ways the digital affordances interacted to influence physical attraction. Results showed no significant interactions influencing physical attractiveness.

Discussion

Overall, results show that platform design affects impressions of attraction. First, we predicted a main effect for the language used in the profile for the dependent variables of romantic and social attraction. Our first research question asked how the language of the profile influences physical attraction. Our hypotheses were supported; profiles that were seeking a serious relationship were evaluated as more romantically and socially attractive. The effect of the cognitive affordance of language aligns with goals of the dating profile, such that participants who viewed a profile seeking a serious, long-term relationship found the profile owner to be a suitable dating partner, whereas the profile owner seeking a casual hook-up was not viewed as a suitable dating partner. Additionally, participants indicated they could be friends with the profile owner seeking a serious relationship. Participants viewed the profile owner seeking a casual relationship in the same manner that the profile owner was seeking a relationship—temporary, not long-term, and not serious.

We also predicted a main effect of the photograph on impressions of physical attraction. That is, the way in which an online dater presents him/herself, if at all, influences individuals' impressions of how physically attractive that person actually is. We found that compared to a casually dressed profile photo, the photograph in which the dater was more formally dressed was more attractive. Perhaps more interesting is that the profile without a photograph was significantly less physically attractive than the profiles that contained a photo. That is, people still form impressions about the physical attractiveness of online daters without a

photograph, but because of limited information to inform that judgement, the online dater is evaluated as less attractive. The absence of a photograph on a dating profile could leave the impression that there is a reason the online dater did not include a photo—the online dater is unattractive and trying to hide that fact. Overall, our results found that when determining physical attractiveness of an online dater, the presence of any reasonable photograph is better than the absence of any photographs. Nonetheless, if an online dater includes a photograph, formal attire is evaluated better than casual attire. To the extent that text-based ODSAs are closing due to political and economic pressure *and* to the extent that photo-centric ODSAs are growing in market share, these findings suggest that the future of physical attraction will be increasingly contingent upon photogenic factors.

We also predicted a main effect for the website. Regarding romantic attraction, or viewing the profile owner as a suitable dating partner, Tinder and eHarmony did not differ from one another, but both were higher in romantic attraction than Craigslist. eHarmony is advertised and presented in a way that claims to find individuals their "soulmate" or "perfect partner." However, our results show that eHarmony is viewed no differently than Tinder in terms of finding a suitable dating partner. This speaks to the changing nature of dating sites. Although Tinder originally had, and continues to have, the reputation as a "hook-up" dating application (Robbins, 2015; Sales, 2015), Tinder is not viewed differently from eHarmony which is a serious dating site for long-term relationships. This resonates with Tyson et al., (2016) finding that "*both* genders frequently report using Tinder for finding a [long-term] partner" ([emphasis added] p. 7), and suggests that Tinder is becoming a more acceptable way to find a romantic partner. Additionally, our results showed that Tinder profiles were evaluated as the most socially attractive, higher than both eHarmony and Craigslist. Again, this speaks to the acceptability of Tinder as a dating site—participants viewed the Tinder profile owners as friendly and someone with whom they would like to socialize. As with our prior implication, the evolving attitudes towards Tinder suggests that photogenic factors will become increasingly important metrics for future formations of romantic relationships.

Because digital affordances are not viewed in isolation from one another, we asked in what ways the digital affordances interacted with one another. Perhaps most interesting, we found that regarding romantic attraction, the sex of the profile owner mattered. For profiles with a female, eHarmony and Tinder did not differ, but were higher than Craigslist, and (though only approaching significance) profiles seeking a serious relationship were higher than those seeking a casual relationship. The male profiles were a little more

complicated. When the profile sought a casual relationship, Tinder was more romantically attractive than both eHarmony and Craigslist. Craigslist and eHarmony did not differ. However, when the profile was seeking a serious relationship, eHarmony only differed from Craigslist. Tinder did not differ from eHarmony nor Craigslist on romantic attraction. This interaction indicates that for male profiles, eHarmony is seen as more romantically attractive when the profile owner is seeking a serious relationship, though Tinder is acceptable as well. If a male is seeking a hook-up, Tinder is the more romantically attractive than eHarmony and Craigslist. eHarmony perhaps was evaluated as less romantically attractive because the platform is not used for casual hook-ups; seeking a casual hook-up is a negative expectancy violation for the eHarmony platform and was thus evaluated more negatively. Tinder, however, has an expectation for casual hook-ups, though we argue the negative stereotype of Tinder is changing. Because the casual language meets expectations of the Tinder platform, it was evaluated more positively. That Tinder was received well, regardless of perceived sexual interests, perhaps speaks less to its evolution as a romantic platform but perhaps more to an increasingly casualization of romance (Griebling, 2012).

Regarding social attraction, we also found a significant interaction with the website and language used. When seeking a casual relationship, Tinder was the most socially attractive. Again, this aligns with the expectations of the platform. eHarmony was less socially attractive than Tinder, but more so than Craigslist. When seeking a serious relationship, Tinder and eHarmony did not differ from one another, but both were significantly higher than Craigslist.

Overall, our results indicate a changing view of Tinder. What once was known as a "hook-up" app, Tinder is now viewed as a more socially acceptable dating platform. Tinder consistently was evaluated more positively than, or at least no different from, eHarmony. Different from eHarmony and Tinder, Craigslist was consistently evaluated the lowest on all dependent variables. Rarely, eHarmony and Tinder were not statistically different from Craigslist, but overall, there seems to be a "Craigslist effect." Craigslist has the simplest platform aesthetics of the three websites. With fewer cognitive and sensory affordances, individuals were limited in the information they relied upon to evaluate the profiles and therefore, interpreted the Craigslist profiles more negatively.

Limitations and Directions for Future Research

This study was designed to understand the effects platform design had on romantic, social, and physical attraction. In terms of significance, we found our hypotheses regarding platform effects to be supported or partially supported with the exception of H3(b)—Tinder was not evaluated as having higher physical attraction than either eHarmony or Craigslist. Nonetheless, effect sizes were modest

at best. These small effect sizes are to be expected considering that perceptions of romantic, social, and physical attraction are part of larger social processes, of which online dating is a part. Indeed, media effects theorists have argued, "what some critics belittle as 'small effects' may have significant repercussions. It takes but a few degrees shift in the average temperature to have an ice age or global warming" (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002, p. 50). Likewise, of equal importance when interpreting effect sizes is an understanding of baseline values. As it stands, this study has demonstrated that platform design affects romantic, social, and physical attraction; it would thus be fruitful for future research to compare these effects against users' baseline romantic, social, and physical interests. That is, future research would benefit from understanding how users' initial desires for relationships affect their interpretation of and the influence from digital affordances. Doing so would give researchers a better understanding of (1) how we should interpret these effect sizes and (2) help give researchers an understanding of how online dating platforms affect romantic, social, and physical interests across time.

Future research would likewise benefit from controlling for age. On one hand, the average age of our sample (M = 37.38; *Med.* = 35.00) offered us a non-traditional research population for understanding the effects of online dating. On the other hand, it is possible that romantic, social, and physical interests stabilize with age and are resistant to external influence. Although traditional college-age populations are sometimes viewed as limitations with other studies, in the case of online dating this may in fact be an ideal population for studying influence, as young adults may be more susceptible to the effects of online dating platform design. Similar claims could be made about the need for more racial diversity, as 81 percent of our participants identified as White/Caucasian, and there may be cultural differences in attitudes towards the appropriateness of online dating that may mitigate or amplify platform design effect sizes. Our sample from Mechanical Turk was more diverse than many college student samples; however, it is still a convenience sample which limits our ability to generalize our findings.

Another limitation lies in the procedure of the experiment. Participants were timed on how long they spent viewing the profile, but they were only told to view the website long enough to form an impression of the profile owner. Responses from participants who spent fewer than five seconds viewing the website were eliminated from the dataset. However, much of the information individuals encounter online is processed peripherally. Even though participants spent a short, uncontrolled amount of time viewing the website, it is still possible they formed valid impressions of the profile owners.

Another potential limitation of the experiment is that all conditions were not fully crossed. The Tinder profiles contained a short header sentence instead of the complete language manipulation and the Craigslist profiles did not contain a photograph manipulation. This was to maintain external validity with our experimental material and test the platform aesthetics in ways that they are commonly used. Future research should examine the cognitive and sensory affordances with varying levels of manipulation to fully explore their effects on impression formation.

Conclusion

In this study, we examined in what ways cognitive and sensory affordances influenced impressions of an online dating profile. Our results indicated that when determining romantic attraction and the intentions of the online dater, platform design and the sex of the profile owner matter. When assessing social attraction, the perceived intentions of the online dater and platform design matter. Regarding physical attraction, individuals only relied upon the presence or absence of a photograph to determine the profile owner's physical attractiveness. If a photograph was present, a formally dressed photograph was more attractive than a casually dressed one. Simply put, the digital affordances of the platform influence our perceptions of online dating profiles. An online dater must consider how digital affordances such as the photograph, type of platform, and communicated intentions will influence their success at finding a partner. The results of our study adds to the literature on digital affordances and online dating. From our mixed methods perspective, we argue that the ostensibly functional user interest in ODSA platforms is critically affected by the technical design of these same platforms. The digital affordances of disparate types of ODSAs are not equal to one another, as design differences influence how users interpret the romantic, social, and physical attraction of online dating profiles. Considering the recent closure of Craigslist's text-based online dating service, the future of romantic, social, and physical attraction may increasingly be bound to the technical pressures of an increasingly photo-centric ODSA industry.

References

Althusser, L. (1970/2006). Ideology and Ideological State Apparatuses (Notes Towards an Investigation). In M. G. Durham & D. M. Kellner (Eds.), *Media and Cultural Studies: KeyWorks* (pp. 79-87). Malden, MA: Blackwell.

Andrejevic, M. (2012). Exploitation in the Data Mine. In C. Fuchs, K. Boersma, A. Albrechtslund, & M. Sandoval (Eds.), *Internet and Surveillance: The Challenges of Web 2.0 and Social Media* (pp. 71-88). New York: Routledge.

Banks, J., Westerman, D. K., & Sharabi, L. L. (2017). A mere holding effect: Haptic influences on impression formation through mobile dating apps. *Computers in Human Behavior, 76*, 303-311. doi:https://doi.org/10.1016/j.chb.2017.07.035

Byrne, D., Ervin, C. R., & Lamberth, J. (1970). Continuity between the experimental study of attraction and real-life computer dating. *Journal of Personality and Social Psychology*, *16*(1), 157-165. doi: 10.1037/h0029836

Campbell, W. K. (1999). Narcissism and romantic attraction. *Journal of Personality and Social Psychology, 77*(6), 1254-1270. doi:10.1037/0022-3514.77.6.1254

Costa, D. (2013). Becoming modular: The (re-)assembled queer "male" body and its digitally enabled sexual economy. In R. A. Lind (Ed.), *Race/Gender/Class/Media 3.0: Considering Diversity Across Audiences, Content, and Producers* (pp. 118-124). Boston: Pearson.

Crary, J. (1992). *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century*. Cambridge, MA: MIT Press.

David, G., & Cambre, C. (2016). Screened intimacies: Tinder and the swipe logic. *Social Media + Society, 2*(2), 2056305116641976. doi:doi:10.1177/2056305116641976

Deeb-Swihart, J., Polack, C., Gilbert, E., & Ess, I. (2017). Selfie-presentation in everyday life: A large-scale characterization of selfie contexts on Instagram. *Proceedings of the Eleventh International AAAI Conference on Web and Social Media*, ICWSM 2017, 42-51.

Dewey, C. (2016). Think twice before answering that ad: 101 murders have been linked to Craigslist. *The Washington Post.* Retrieved from https://www.washingtonpost.com/news/the-intersect/wp/2016/01/11/think-twice-before-answering-that-ad-101-killers-have-found-victims-on-Craigslist/?utm_term=.79ad1bd7eec8

Gallagher, L. (2018). Match Is the Sweetheart of Online Dating—But Can It Fend Off Facebook and Bumble? *Fortune.* Retrieved from http://fortune.com/2018/06/27/match-dating-tinder-facebook-bumble/

Gerbner, G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). Growing up with television: Cultivation processes. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 43–67). Mahwah, NJ: Erlbaum.

Griebling, B. (2012). *The Casualization of Intimacy: Consensual Non-Monogamy and the New Sexual Ethos.* (PhD Dissertation). University of Pennsylvania.

Hartson, H. R. (2003). Cognitive, physical, sensory, and functional affordances in interaction design. *Behavior & Information Technology, 22*(5), 315-338.

Hitsch, G. J., Hortaçsu, A., & Ariely, D. (2010). What makes you click?—Mate preferences in online dating. *Quantitative Marketing and Economics, 8*(4), 393-427. doi:10.1007/s11129-010-9088-6

McAlone, N. (2018). Netflix's Q4 Earnings: 'Highest Quarter in Our History'. *Inc.* Retrieved from https://www.inc.com/business-insider/netflix-fourth-quarter-earnings-2017-q417.html

McCroskey, J. C., & McCain, T. A. (1974). Measurement of interpersonal attraction. *Speech Monographs, 41*, 261-266. doi: 10.1080/03637757409375845

McCroskey, L. L., McCroskey, J. C., & Richmond, V. P. (2006). Analysis and improvement of the measurement of interpersonal attraction and homophily. *Communication Quarterly, 54*(1), 1-31. doi:10.1080/01463370500270322

Niesen, M. (2016). Love, Inc.: Toward structural intersectional analysis of online dating sites and applications. In S. Noble & B. Tynes (Eds.), *The Intersectional Internet* (pp. 161-178). New York: Peter Lang.

Norman, D. (n.d.). Affordances and Design. Retrieved from http://www.jnd.org/dn.mss/affordances_and.html

O'Brien, S. A. (2016). 81-year-old eHarmony founder on gay marriage and Tinder. Retrieved from http://money.cnn.com/2016/02/12/technology/eHarmony-neil-clark-warren/index.html

Pulliam-Moore, C. (2018). Craigslist Is Shutting Down Its Personals Section. *Gizmodo.* Retrieved from https://gizmodo.com/craigslist-is-shutting-down-its-personals-section-1824011480.

Rao, S. (2017). In the era of dating apps, who still posts on Craigslist's Missed Connections? *The Washington Post.* Retrieved from https://www.washingtonpost.com/news/soloish/wp/2017/08/21/in-the-era-of-dating-apps-who-still-posts-on-craigslists-missed-connections/?utm_term=.80e36cbb4338

Robbins, Mel. "Has Tinder Replaced Dating with Hookup Culture?" CNN 2015. Web. June 6, 2016.

Rose, G. (2012). *Visual Methodologies*. Thousand Oaks, CA: Sage.

Rosenbaum, M. S., Daunt, K. L., & Jiang, A. (2013). Craigslist exposed: The internet-mediated hookup. *Journal of Homosexuality, 60*(4), 505-531. doi:10.1080/00918369.2013.760305

Sales, N. J. (2015). Tinder and the Dawn of the "Dating Apocalypse". Retrieved from http://www.vanityfair.com/culture/2015/08/tinder-hook-up-culture-end-of-dating

Spark Networks. (2019).Company Story. Retrieved from http://www.spark.net/about-us/company-overview/

Stanfill, M. (2015). The interface as discourse: The production of norms through web design. *New Media & Society, 17*(7), 1059-1074.

Tyson, G., Perta, V. C., Haddadi, H., & Seto, M. C. (2016, August). A first look at user activity on tinder. In Advances in Social Networks Analysis and Mining (ASONAM), 2016 IEEE/ACM International Conference on (pp. 461-466). IEEE.

Zwilling, M. (2013). How Many More Online Dating Sites Do We Need? Retrieved from https://www.forbes.com/sites/martinzwilling/2013/03/01/how-many-more-online-dating-sites-do-we-need/#1647f32d7882

Discontinuance in Fitness Tracking Apps: An Analysis Using a Diffusion of Innovations Approach

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The diffusion of innovations (DOI) framework has been robust in predicting and explaining the dispersion of numerous innovations. However, despite the prominence of DOI within practical and academic research, discontinuation continues to be an understudied phenomenon. The present study aims to redress this void by examining discontinuation within the context of fitness apps. In addition to examining this construct, the theory of self-monitoring is included as a potential explanatory factor. The present study uses survey results from a sample of undergraduate students (N = 241). The data were analyzed with hierarchical logistic regression, with the results showing an association between discontinuance and socially-driven uses of the app, contrary to expectations. Self-monitoring was not associated with discontinuance. Future research may benefit from examining additional factors, such as extrinsic motivation.

Introduction

Technological tools have increasingly gained prominence as a mainstay in our culture. Indeed, mobile technologies have reached a point of saturation with 96% of adults in the United States possessing a cell phone and 81% of adults owning a smartphone; an increase from 77% in the previous year (Pew Research Center, 2019). These numbers reflect a continued increase; the number of adults with a smartphone has more than doubled from the 35% that was reported in the first Pew Research Center survey on smartphone ownership (Smith, 2011). Along with this saturation, a level of dependence has been reached. Currently, about 20% of adults rely on their smartphones for broadband service (Pew Research Center, 2019).

Although technology users have increased, the number of adults in the United States who reach the recommended amounts of aerobic and muscle-strengthening exercise is not as high. Specifically, according to the Centers for Disease Control and Prevention (2017), just over half (53.3%) of adults met the recommendations for aerobic exercise and far fewer (23.2%) met recommendations for strength training in recent estimates from national data. In response, several technological applications have been developed over the years to help assuage this shortcoming (Vickey, Breslin & Williams, 2012; West et al., 2012). With a plethora of options ranging from standalone gadgets to smartphone "apps" and Websites, there are tools available for both the technologically savvy and/or interested in specific types of workouts or nutrition features as well as those who simply want to monitor their activity level (Duffy, 2020).

Understanding psychological and social determinants of physical activity (PA) has held researchers' interest, with a focus in

topics such as goal-setting, motivation, and social influences (e.g., Bluemke, Brand, Schweizer, & Kahlert, 2010; Kwan, & Bryan, 2010; McAuley, & Courneya, 1992; Rhodes, Macdonald, & McKay, 2006). As technology has allowed new interventions and approaches to be undertaken, scholars have expanded their foci to both traditional and new settings. However, much is left unknown about what may be related to users' discontinuance of these tools. The present study helps fill a void in the literature by examining discontinuance of physical fitness apps through the lens of the diffusion of innovations (DOI) framework. This manuscript is organized as follows: First, an overview of the DOI and self-monitoring frameworks as well as germane existing research will be provided, followed by constructs of interest for this study. In the second section, the study's methodology will be introduced and discussed, along with the study's results. Third, the importance of this research for the field will be discussed.

Literature Review

Diffusion of Innovations Framework

The DOI framework offers insight into how ideas or technologies are incorporated into societies across time (Rogers, 2003). A strength of DOI research is that it can generalize across fields and as such, this framework lends itself to many applications that can adapt relatively easily from other contexts. In addition to its generalizability, DOI research has a practical focus and is readily applied to social issues within several areas (Rogers, 2003). Building upon its practicality, as evidenced in the agricultural field, the DOI framework has been widely used to by researchers in a health context (e.g., Bang, Chae, Lee, Yu, & Kim, 2018; Shah, Marciniak, Golden, Trogdon, Golin, & Brewer, 2018; Vishwanath & Scamurra, 2007).

A great deal of research has focused on innovation's attributes, adopters' characteristics, and network positioning in terms of adoption decisions and the diffusion process. For instance, researchers have examined the innovativeness of physicians in adopting mobile health monitoring (Okazaki, Castañeda, Sanz, & Mukherji, 2017). However, discontinuation has received significantly less attention (e.g., Black, 1983; Vishwanath & Barnett, 2011). According to Rogers (2003), discontinuation often occurs for one of two reasons: (1) the innovation is replaced with something that better fits the needs of the user, or (2) the user becomes disenchanted and determines that the innovation does not adequately suit the purpose for which it was adopted. It is important to note that discontinuance is distinct from non-adoption, in which an individual does not adopt the innovation at all. Non-adoption is typically due to perceiving negative attributes relating to the innovation; these may include incapability, lack of observability, relative disadvantage, and perceived complexity (Rogers, 2003; Vishwanath & Goldhaber, 2003).

Empirical evidence suggests that other factors such as social connections (Scheirer, 1990), compatible technology use (Parthasarathy, & Bhattacherjee, 1998), and cost of the innovation (Spiller, Vlasic, & Yetton, 2007) may influence users' decisions to discontinue use of an innovation. However, given the pro-innovation bias of most diffusion research (Rogers, 2003), relatively little attention has been paid to issues such as discontinuation (Chang, Lee, & Kim, 2006). Indeed, a great deal of diffusion research has focused solely on the adoption of ideas or technologies, leading to a void in knowledge surrounding reasons why an innovation may be tried and later discarded or not adopted (Vishwanath & Barnett, 2011). Nevertheless, discontinuance as a diffusion-related topic must be addressed. Discontinuance occurs in the *confirmation* stage of adoption (Rogers, 2003). The concept of discontinuance has been studied in a health-related context in various ways, but relatively sparingly (e.g., Black, 1983; Cohen, Sheeder, & Teal, 2019).

Result visibility. In an analysis of healthcare providers' perceptions and use of mobile apps for patient mental and behavioral health within a veterans' (VA) health system setting, result observability was positively associated with app recommendation and use (Miller et al., 2019). One of the reported top benefits of using mobile apps with patients is that it allows the ability to monitor, track progress, and see patients' feedback. Related, knowing other healthcare providers who recommend the apps to patients is associated with increased use (Miller et al., 2019).

Likewise, an examination of physical education teachers' ratings of comprehensive school physical activity programs compared the perceived attributes from adopters. The results of this study showed the highest rated item indicated an advantage for being able to see the effects of promoting physical activity (Webster, Mîndrilă, Moore, Stewart, Orendorff, & Taunton, 2020). The other top-rated responses included items such as "others in my school environment are (would be) aware that physical activity is being promoted," and "others in my school environment (would) notice the impact of promoting physical activity." As a whole, the study's results show that teachers who have adopted these programs perceive them differently from non-adopters (Webster et al., 2020). Result visibility has been shown as a predictor of adoption in other settings (e.g., Tully, 2015). Thus, the first hypothesis suggests that the converse will also be true. Specifically,

> H: Result visibility will be negatively related to discontinuance.

Socially-driven uses. The continuous shift toward online technologies has broadened the context in which discontinuance can be studied and the post-adoption behaviors of Internet-users and non-users has gained attention over the years (e.g., Kim, 2011;

Parthasarathy & Bhattacherjee, 1998; Spiller et al., 2006). With the addition of these and other studies, a deeper understanding of discontinuance has been unfurled. For instance, in examining the diffusion of the Internet from a series of cross-sectional studies spanning from 1994 to 2007, Kim (2011) found that exposure to technology was an important predictor for continued use of the Internet. More importantly, continued users were more likely to utilize e-mail and other communicative aspects, thus implying that continuation in online use is related to social functions (Kim, 2011). However, other research suggests that the Internet may simply be used as an extension of daily lives (Katz & Rice, 2002).

Although fitness apps provide a wide variety of information to users (e.g., Duffy, 2020), evidence supports the importance of social connections in fitness-related interventions. For instance, an intervention focused on maintaining weight loss found that participants who received an email or telephone prompt were less likely to discontinue use before the completion of the study, thus supporting the utility of social connections as a key component in reducing attrition for Internet-based wellness-related programs (Stevens et al., 2008). Additionally, in their trial of a Web-based walking intervention in which the intervention group was allowed to read and post messages to other users, Richardson et al. (2010) found that participants were less likely to leave the program than those who were in the control group who only had access to the informational side of the Website.

Similarly, West and colleagues (2012) found that one of the features in more commonly used health-related apps was a function for enabling users to engage with healthcare providers or other sources of encouragement. This factor has been examined qualitatively as well. For instance, one study exploring the valued characteristics of fitness apps found that young adults appreciated the ability to get information and advice from others quickly through this interface (Dennison, Morrison, Conway, & Yardley, 2013). Finally, in an examination of permanent and intermittent discontinuance of Twitter, one study's findings show that social network fatigue may be associated with intermittent discontinuance (Ng, 2020). However, perceiving a benefit from maintaining an online presence within one's social circle is related to readoption. Among those who discontinue completely, alternatives are sought whereas those who discontinue intermittently and then readopt are more likely to seek solutions (Ng, 2020). This finding suggests that those who permanently discontinue are likely disenchanted and seek replacement. Given the empirical evidence toward the importance of socially-driven uses relating to continuation, the following hypothesis and research question are proposed.

H2: (H2a) Discontinuation of fitness apps is negatively related to socially-driven uses of fitness apps, (H2b) but not related to information-driven uses of fitness apps.

RQ1: (RQ1a) Do socially-driven uses of fitness apps relate to disenchantment (RQ1b) or replacement?

Compatibility with lifestyle. In a study on the adoption and discontinuance of online games among South Korean college students, Chang and colleagues (2006) found that compatibility with one's lifestyle was an important predictor for continuation. In addition to this lifestyle compatibility, a perceived relative advantage was important for continued gaming. This finding aligns with a study on the non-adopters of mobile phones in China (Leung & Wei, 1999). Specifically, this study found that non-adopters of mobile phones fit the late-adopter profile, were less likely to use similar technologies, were less likely to have positive perceptions of the innovation attributes and were less likely to talk with friends about mobile phones (Leung & Wei, 1999).

Similarly, another study's findings suggest a direct link between observability and lifestyle compatibility (Vishwanath & Goldhaber, 2003). In their study, Vishwanath and Goldhaber (2003) used a computer-aided telephone interview (CATI) system to examine adults' adoption intention toward cellular phones. The results suggest an innovation that is perceived as highly compatible and highly observable will be more readily adopted. This finding holds true even in the instance of not having significant benefits for the user and high perceived difficulty in using the innovation. Additionally, late adopters value compatibility with currently-owned products when making the decision (Vishwanath & Goldhaber, 2003). These aspects of decision-making are important to consider as late-adopters who do eventually begin to use an innovation are more likely to discontinue its use, compared to earlier adopters (Black, 1983). These findings lead to the proposition of a second hypothesis:

H3**:** The perception of fitness apps' compatibility with lifestyle is negatively associated with discontinuation.

Perceived usefulness. Along the same vein of innovation utility, Parthasarathy and Bhattacherjee (1998) found that perceived usefulness and compatibility with one's lifestyle were important predictors relating to discontinuance; interestingly, the perceived ease of use was not significantly related to discontinuation in this study. In addition, this study found the use of compatible technology was significantly related to the likelihood of continuation. Conversely, the lack of compatible technology use was related to the likelihood of discontinuance (Parthasarathy & Bhattacherjee, 1998). This falls in line with other research that has examined the relationship between similar innovations and adopters (e.g., LaRose & Hoag, 1997; Vishwanath & Chen, 2006).

In a related finding, Spiller et al., (2007) found three main predictors for discontinuation: 1) the service's reliability; 2) the response time for queries (which can be translated as the quality of the product); and 3) the options for payment. This study was conducted to assess post-adoption behaviors for users in Internet Service Provider (ISP) industry. Thus, its comparison included business versus consumer users. The results showed that 63.5% of discontinuers cited cost as a factor in the decision (Spiller et al., 2007). In addition, the service's quality and usefulness were related to discontinuation along with options for payment. Specifically, if these features did not align with the client's existing framework, discontinuation was more likely to occur. Similarly, Scheirer (2005) found that health programs' ability to fit within an existing structure, procedures, and organizational mission, the likelihood of continuing its use increased. Drawing upon these findings, the following hypothesis is posed:

H4: Fitness apps' perceived ease of use will be negatively related with discontinuation.

In addition to the concepts described above, there is a need to extend the research to better understand why some individuals may discontinue (or continue) using fitness apps even if the DOI framework suggests they would not. For instance, individuals may use social features and still discontinue, or vice versa (e.g., Catalan, 2016). Due to the weight of result visibility (e.g., Miller et al., 2019) and social uses (e.g., Ng, 2020), we examined DOI in conjunction with self-monitoring theory (Lennox & Wolfe, 1984; Snyder, 1974). We expected self-monitoring theory may complement DOI by furthering our understanding of personality traits that interact with individuals' adoption and discontinuance behaviors.

Self-Monitoring

Described as the ability to socially adapt to one's surroundings to manage others' impressions (Lennox & Wolfe, 1984; Snyder, 1974), self-monitoring may relate to several aspects of individuals' lives (e.g., Flynn, Reagans, Amanatullah & Ames, 2006). Individuals who are higher self-monitors are more likely to vary their behavior in order to fit the social setting. Conversely, those who are low self-monitors will maintain consistency with their actions across many social settings (Gangestad & Snyder, 2000). Related, high self-monitors may tend to choose friends and activity partners based on the partners' skill aptitude more often than low self-monitors (e.g., Snyder, Gangestad & Simpson, 1983). That is, rather than choosing activity partners based solely on liking the other person, high self-monitors are more likely to opt to engage in activities with an individual who is competent at the activity. In turn, this may relate to higher levels of segmentation within high self-monitors' social networks. Specifically, high self-monitors may have

several groups of friends and acquaintances with whom they engage in specific activities rather than cultivating a deep friendship based on personal similarities and liking (Snyder et al., 1983).

This may present a challenge as individuals maintain and develop relationships in an online setting. Specifically, due to changes that come with personal growth and development, individuals may struggle to manage others' impressions in mediated environments (e.g., Rosenberg & Egbert, 2011). In their study of impression management and personality traits, Rosenberg and Egbert (2011) found that high self-monitors were more likely to care about the social appropriateness of their actions within the online social network (Rosenberg & Egbert, 2011). Based on the breadth of online social networks (e.g., Subrahmanyam et al., 2008) the present study examines the association between self-monitoring and social uses of fitness apps. Specifically, the following research question is posed:

RQ2: Will social uses of fitness apps mediate the relationship between self-monitoring and discontinuance?

Method

Participants

To test factors that influence discontinuation of fitness apps, undergraduate students from a public research university in the Northeastern U.S. were recruited to participate in this study. Undergraduate students are a desirable sample for this study due to their general demographic characteristics aligning with the typical profile of technology users (Pew Research Center, 2017). This increases the likelihood of having a sample that includes both current users as well as discontinuers of fitness apps. Moreover, college students are an audience of interest in relation to physical fitness, due to their generally poor dietary habits, high levels of stress, lack of predictable sleep schedules, and limited amounts of time for structured physical activity (Marmo, 2013).

Measures

The research instrument was distributed online and contained items adapted from several previous studies. Falling in line with the tenets of widely-used of behavioral theories such as social cognitive theory (Bandura, 1998) and the theory of planned behavior (Ajzen, 1991), past behavior will likely predict future behavior. Thus, along with measuring the study's key independent, dependent, and control variables, the survey gauged the participants' familiarity with, attitude toward, and use of fitness apps. Many of these are derived from Parthasarathy and Bhattacherjee's (1998) work and include items such as "When did you first start using a fitness app: (month/year), and "How many times did you switch fitness apps during this time?" This section also includes items that ask whether the participants had a smartphone with a fitness app, how many fitness apps the participants had used in the past year, and how many

times they had switched apps. Most of the instrument's items are measured with five-point Likert-type scales ranging from "Strongly disagree" to "Strongly agree." In order to avoid positive response bias, the items include a mixture of negatively and positively worded items as recommended by various psychometrics guides (e.g., Meier, 2008).

Discontinuation. The items regarding discontinuation were drawn from a previous study that examined discontinuation in the context of online services (Parthasarathy & Bhattacherjee, 1998). Specifically, the present study used items from Parthasarathy and Bhattacherjee's (1998) work regarding compatibility. The four Likert-type items that measured compatibility showed good internal consistency, with anchors of 1, "strongly disagree" and 7, "strongly agree" ($\alpha = .81$, $M = 5.16$, $SD = 1.22$). The items include statements such as, "At the time I subscribed, I felt this would fit my lifestyle very well." The research instrument also drew from Parthasarathy and Bhattacherjee's (1998) work by including items that address replacement versus disenchantment. Five items asked participants to respond to statements such as, "I decided to discontinue this app and switch to an app that was superior, even though I was not particularly dissatisfied with this app."

Perceived characteristics of the innovation. The participants were also asked about their perceptions of the fitness app with items drawn from previous work that focused on developing a scale relating to innovation adoption (Moore & Benbasat, 1991). The original work includes a research instrument that incorporates many constructs related to innovation adoption, along with suggested items for short scales. These suggestions influenced the selection of items for the present study. The constructs' scales that were incorporated in the present study include: relative advantage (original short scale $\alpha = .90$), compatibility (original short scale $\alpha = .86$), ease of use (original short scale $\alpha = .84$), result demonstrability (original short scale $\alpha = .79$), image (original short scale $\alpha = .79$), visibility (original short scale $\alpha = .83$), and trialability (original short scale $\alpha = .71$).

Technological innovativeness. The participants' technological innovativeness was measured with items drawn from Goldsmith and Hofacker's (1991) work on consumer innovativeness. The inclusion of this construct is important in studying discontinuation due to the expectation that individuals who discontinue will be less likely to be highly innovative; further, later adopters who discontinue may do so for reasons other than earlier adopters and innovators (Parthasarathy & Bhattacherjee, 1998). In its development, this scale was tested across a variety of consumer platforms. In the final test reported by Goldsmith and Hofacker (1991), the scale had been examined in the context of music records, fashion, and scent. It showed good internal consistency in each

context (music α = .85, fashion α = .83, and scent α = .83). This scale includes items such as, "In general, I am among the first in my circle of friends to buy new technology when it appears," and "Compared with my friends, I won a lot of technological products."

Sources of influence. The present study examines the sources of influences with an item derived from Parasarathy and Bhattacherjee's (1998) work. Specifically, this item asks participants to indicate the level of influence that each of the following has relating to their fitness app use: (1) articles, reviews, advertising, or other mass sources; (2) opinions and recommendations from friends, colleagues, relatives, or other individuals; and (3) my own personal experience with this type of technology. The participants must ensure that the total equals 100%.

Self-monitoring. The revised self-monitoring scale (Lennox & Wolfe, 1984) is used. The revised scale includes 13 items that focus on individuals' sensitivity toward self-presentation and expressive behavior. The internal consistency of the items for each of these aspects of self-monitoring is acceptable (self-presentation α = .77; expressive behavior α = .70). All 13 Likert-type items are utilized with the present study.

Results

Demographics

There were 286 participants who responded to the survey. In the initial data cleaning, responses with less than 100% completion were removed from the data (final $N = 241$). As expected from undergraduate students, the participants' average age is 19.76 years ($SD = 2.00$ years). Other descriptive statistics and correlations of the main study variables are included in the table below.

Table *Correlations and descriptive statistics*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Female	1																				
2. AfricanAmerican	-.01	1																			
3. Asian	-.14*	-.18**	1																		
4. OtherRace	.06	-.05	-.09	1																	
5. Age	-.06	.04	.11	.10	1																
6. Physical Fitness	-.02	.03	-.18**	-.05	-.07	1															
7. Athleticism	-.22**	.01	.02	.03	-.05	-.02	1														
8. Fitness App	.11	-.03	-.12	-.08	-.04	.06	.03	1													
9. TechSE	.03	-.03	-.18**	.05	.10	.14*	-.10	.26**	1												
10. Innovative	-.14*	.10	-.00	-.06	-.03	.08	.10	.10	.04	1											
11. Social Uses	-.06	.00	.16*	.13*	.05	-.18**	.11	-.21**	-.26**	.20**	1										
12. Info Uses	.02	.08	-.11	-.15*	.02	.23**	.09	.10	.30**	.07	-.23**	1									
13. Image	-.05	.01	.08	.07	.24**	.18**	.14*	-.08	-.12	.25**	.21**	.13*	1								
14. Ease of Use	.13	.08	-.06	.09	.13*	.01	.06	.22**	.40**	-.02	-.26**	.31**	.01	1							
15. Demonstrability	.07	.11	-.07	.13	.25**	.09	-.05	.12	.19**	.13*	.03	.17**	.35**	.37**	1						
16. Visibility	.09	.06	.01	.18**	.11	.15*	.16*	.06	-.08	.3**	.16*	.10	.59**	.18**	.42**	1					
17. Trialibility	-.03	.04	.01	-.08	-.02	.20**	.11	.12	.07	.13	.07	.18**	.17**	.10	.20**	.29**	1				
18. Rel. Advantage	-.04	.04	-.04	.08	.22**	.13	.18**	-.04	.09	.07	.15*	.38**	.41**	.25**	.33**	.27**	.39**	1			
19. Compatibility	-.01	.11	-.04	.10	.11	.07	.2**	.01	.09	.16*	.22**	.29**	.49**	.27**	.42**	.39**	.30**	.70**	1		
20. Self-Monitor	.12	.12	-.17**	-.02	.09	.23**	.06	.12	.32**	.01	-.15*	.20**	-.01	.23**	.19**	.09	.32**	.25**	.19**	1	
21. Discontinuance	-.10	-.09	.05	.04	.01	-.07	-.11	-.48**	-.28**	-.19**	.17**	-.37**	-.04	-.28**	-.17**	-.20**	-.16*	-.17*	-.23**	-.08	1
Mean	0.49	0.10	0.24	0.02	19.76	0.02	0.02	0.73	32.43	15.91	0.00	0.17	10.77	14.21	10.66	9.53	10.52	14.66	14.22	44.37	0.53
Standard Deviation	0.50	0.29	0.43	0.16	2.00	1.02	1.00	0.44	10.68	5.11	0.98	0.90	4.67	2.93	2.34	2.87	2.44	4.04	4.31	8.05	0.50

Note: $p < .01$ **, $p < .05$ *, $N = 241$

Fitness App Use

Overall, the majority of participants reported having a smartphone with a fitness app (n = 190, 66.4%). Nearly half of the participants had used just one fitness app over the past year (n = 138, 48.3%). The majority of participants had discontinued using a fitness app (n = 173, 60.5%). The items adapted from Parthasarathy and Bhattacherjee (1998) regarding discontinuance due to disenchantment or replacement were dummy coded into two categories: disenchantment and replacement (thus, continued use is the comparison). The majority of participants discontinued due to disenchantment (n = 171, 59.8%). Regarding sources of influence, the participants reported relying the most heavily on their own experience with this type of technology (M = 39.76, SD = 31.90), followed by opinions and recommendations from others (M = 28.41, SD = 26.80). Articles, reviews, and other mass sources of information were rated as having the least influence (M = 22.04, SD = 24.27). A summary of the scale characteristics is included in Table 2.

Hypothesis One

In order to test the first hypothesis, a multiple hierarchical logistic regression with four blocks was analyzed. The first block contained relevant control variables: gender, race, and age. In the second, the participants' fitness and athleticism self-ratings were included because these factors may influence the use of a fitness app. The third block contains the participants' technological self-efficacy, measured with six items that ask how confident individuals are in using technology (Compeau & Higgins, 1995) and innovativeness ratings. In the fourth block, the innovation attributes were included. The model was significant ($\chi^2(16) = 58.68$, $p < .001$), and explains 22% of the variance (Cox and Snell $R^2 = .22$). The apps' visibility was marginally significant ($\beta = -0.14$, SE = .08, $p = .06$). Thus, H1 was not supported.

Hypothesis Two

The second hypothesis was tested using a multiple hierarchical logistic regression with five blocks. The first four blocks remained the same as was used in the previous analysis, with the addition of the socially- and information-driven uses of fitness apps included in the fifth block. The model was significant ($\chi^2(18) = 78.17$, $p < .001$), and explains more than 25% of the variance (Cox and Snell $R^2 = 0.27$). Socially-driven use of fitness apps is statistically significant in its relationship with discontinuance, such that individuals who use these are 1.5 times more likely to discontinue than others (adjusted OR = 1.50, SE = 0.14, $p = .03$). However, H2a was not supported because this relationship was positive, rather than negative as expected. Information-driven uses of fitness apps also showed a statistically significant relationship with

discontinuance (adjusted OR = 0.50, SE = 0.21, $p = .001$). In light of this relationship, H2b was not supported.

Research Question One

The same multiple hierarchical linear regression that was used in testing hypothesis one was utilized to answer the first research question, which asks whether socially-driven uses of fitness apps is related to (RQ1a) disenchantment or (RQ1b) replacement. A fifth block was added, containing the dummy variables for disenchantment and replacement. The model was significant ($F(12, 243) = 4.86$, $p < .001$) and explains nearly 20% of the variance ($R^2 = 0.19$). Disenchantment is significantly related to socially-driven uses of fitness apps ($\beta = 0.47$, SE = 0.14, $p = .001$), and replacement is marginally significant ($\beta = 0.74$, SE = 0.39, $p = .06$).

Hypothesis Three

The third hypothesis suggests that fitness apps' compatibility with one's lifestyle is negatively associated with discontinuance. In order to examine this hypothesis, the results from the first multiple hierarchical logistic regression were analyzed. As noted above, the model was significant. The beta coefficient for compatibility with lifestyle was not statistically significant in its relationship with discontinuance. Thus, H3 was not supported.

Hypothesis Four

The fourth hypothesis suggests that fitness apps' perceived ease of use will be negatively related to discontinuance. This hypothesis was tested with the same logistic regression used with hypothesis one and three. The beta coefficient for ease of use is not statistically significant in its relationship with discontinuance. Thus, H4 was also not supported.

Hypothesis Five

The fifth hypothesis suggests that individuals who are higher in self-monitoring will be less likely to use fitness apps' social functions. In order to test this hypothesis, a multiple hierarchical linear regression was conducted. The first block included the demographic control variables. The second included the participants' self-ratings of physical fitness and athleticism. The third block included technological self-efficacy and innovativeness. The fourth block included self-monitoring. The model was significant ($F(10, 245) = 4.37$, $p < .001$) and explained 15% of the variance ($R^2 = .15$). However, the relationship between self-monitoring and social uses of fitness apps was not significant. Thus, H5 was not supported.

Research Question Two

The research question asks whether socially-driven uses of fitness apps mediate the relationship between self-monitoring and discontinuance. To address this question, the four-step approach outlined by Baron and Kenny (1986) was utilized. However, given the lack of a statistically significant relationship between self-

monitoring and discontinuance, the mediation analysis was not supported.

Discussion

Recent polls have indicated that the use of mobile devices has increased significantly in the course of a few years (Pew Research Center, 2019) and many mobile applications have been developed to help users track their fitness-related activities (Dennison et al., 2013). Although the DOI framework has been robust in predicting and explaining the diffusion of several innovations, less is known about discontinuance. In this study, we examine discontinuance of fitness tracking apps using the DOI framework with self-monitoring as a potential mediator.

Contrary to the predicted outcome, socially-driven use of fitness apps is related to a 1.5 times increase in the likelihood of discontinuance. This finding is noteworthy and bears further investigation as it goes directly against the DOI framework. There are a number of possible reasons behind this finding. For instance, in an examination of intrinsic and extrinsic motivation toward leisure time physical activity among secondary school students, Standage, Duda, and Ntoumanis (2003) found a relationship between intrinsic motivation and intention to engage in leisure time activity. However, social factors such as situational cues or feedback from a physical education teacher, and peers' influence may also impact individuals' motivation. In other words, Standage and colleagues' (2003) work suggests that motivation for physical activity stems from within.

Importantly, engaging in physical activity may start from the point of feeling like it is something that ought to be done; in time, the behavior may become more internalized and reinforced (Standage et al., 2003). As a possible explanation for the present study's findings, social engagement may be helpful for initial motivation—as was found by Standage et al. (2003)—however, it may not be enough to sustain a long-term habit. For instance, other work has shown that intrinsic motivation is necessary to sustain a behavior (e.g., Kilpatrick, Hebert, & Bartholomew, 2005). Beyond motivation, the present study's findings may be explained through the lens of the big fish little pond concept (Marsh & Parker, 1984). For instance, one study found that gymnasts' self-concept was negatively related to their peers' performance (Chanal, Marsh, Sarrazin & Bois, 2005). In other words, when gymnasts' self-concept ratings were lower when they were in a group of high-performing peers (Chanal et al., 2005). A similar phenomenon may be occurring with fitness apps, relating to an increase in discontinuance when users have ready access to other users' performance measures.

From a DOI perspective, the social interactions that occur through fitness apps may relate to disenchantment, or not being captivated by what is available with the app. Specifically, health

fitness tracking takes a sustained effort. By posting information with an app, users will be able to gain feedback from their social network (Hsiao, Chang, & Tang, 2016). However, over time, the feedback may wane as the user continues posting updates about their physical activity. The actions may be seen as uninteresting or not noteworthy anymore, especially as the actions continue without drastic changes. Thus, the feedback quality may not be enough to sustain motivation and in turn, users may end up becoming disenchanted with the app; this may also be exacerbated by individuals performing the activities by themselves and later reporting to friends rather than having a face-to-face interaction (e.g., Dharia et al., 2016). Similarly, disenchantment may reflect a void in motivation. Specifically, social interactions may provide external motivation for performing an activity but may not be helpful for sustained activity that requires internal motivation. Alternatively, individuals may use an app as they begin an activity and as they gain mastery, they no longer need the app or other users' feedback in order to continue with the activity. Thus, further investigation into disenchantment among fitness app discontinuers may be warranted especially regarding the social uses.

As is the case with all research, there are some limitations that must be addressed. First, this study utilizes a convenience sample of undergraduate students. Although this sample group represents an ideal population to study adoption, the participants' age may impact their discontinuance of fitness apps. Specifically, prior studies have shown that younger people tend to be more willing to adopt innovations. However, this age cohort is an ideal population for the research topic. Maybe chronic health conditions, including obesity, can start early in life and college students' risk relating to nutrition and physical activity has been noted (e.g., Huang, Harris, Lee, Nazir, Born, & Kaur, 2003). Future research will benefit from the inclusion of a broader sample. Second, the present study used a one-time cross-sectional survey with self-report measures. Although this allows a relatively unobtrusive form of research, longitudinal studies that show behavioral changes over time may allow more fruitful results. In future work, scholars may also benefit from applying both motivation, as described in Deci and Ryan's (1985) self-determination theory to this context, as well as the big fish little pond concept (Marsh & Parker, 1984).

Despite these limitations, there are a number of positive contributions stemming from the present study. Specifically, this work delves into an area in which research has been scarce. Overall, discontinuance has not received as much scholarly attention as other areas of inquiry relating to the DOI framework. Moreover, the present study provides a look at discontinuance in relation to fitness apps. Although these apps are not the only way for individuals to obtain increased levels of physical fitness, they represent a popular

form of tracking one's progress. In sum, the present study examines discontinuance of fitness tracking apps. Its results show an increased likelihood of discontinuance in relation to socially-driven uses of the app. This finding is important as prior research has suggested that social functions are a way of increasing engagement through technology (e.g., Althoff, Jindal, & Leskovec, 2017; Hsiao et al., 2016). However, this study's findings suggest that this engagement may depend upon the context and activity. Due to the personal nature of engaging in physical exercise as monitored by fitness trackers, social functions may not be as useful in predicting technology adoption. Moving forward, the literature will benefit from further examination of why this may be the case and ways in which practitioners and scholars may help individuals to use these devices to maintain physical fitness.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Althoff, T., Jindal, P., & Leskovec, J. (2017, February). Online actions with offline impact: How online social networks influence online and offline user behavior. In *Proceedings of the Tenth ACM International Conference on Web Search and Data Mining* (pp. 537-546). ACM.

Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology and Health*, *13*(4), 623-649.

Bang, K. S., Chae, S. M., Lee, I., Yu, J., & Kim, J. (2018). Effects of a community outreach program for maternal health and family planning in Tigray, Ethiopia. *Asian Nursing Research*, *12*(3), 223-230.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182.

Black, W. (1983). Discontinuance and diffusion: Examination of the post adoption decision process. *Advances in Consumer Research, 10*(1), 356-361.

Bluemke, M., Brand, R., Schweizer, G., & Kahlert, D. (2010). Exercise might be good for me, but I don't feel good about it: Do automatic associations predict exercise behavior? *Journal of Sport & Exercise Psychology, 32*(2), 137e153.

Catalan, J. (2016, November 8). I stopped wearing my fitness tracker and this is what happened. *Runners World*. Retrieved April 10, 2020 from https://www.runnersworld.com/runners-stories/g20831609/i-stopped-wearing-my-fitness-tracker-and-this-is-what-happened/

Centers for Disease Control and Prevention. (2017, January 20). Exercise or physical activity. Centers for Disease Control and Prevention. Retrieved April 15, 2020 from http://www.cdc.gov/nchs/fastats/exercise.htm.

Chanal, J. P., Marsh, H. W., Sarrazin, P. G., & Bois, J. E. (2005). Big-fish-little-pond effects on gymnastics self-concept: Social comparison processes in a physical setting. *Journal of Sport and Exercise Psychology*, *27*(1), 53-70.

Chang, B. H., Lee, S. E., & Kim, B. S. (2006). Exploring factors affecting the adoption and continuance of online games among college students in South Korea: Integrating uses and gratification and diffusion of innovation approaches. *New Media & Society*, *8*(2), 295-319.

Cohen, R., Sheeder, J., & Teal, S.B. (2019). Predictors of discontinuation of long-actingreversible contraception before 30 months of use by adolescents and young women. *Journal of Adolescent Health*, *65*(2), 295-302.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 189-211.

Deci, E.L. & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum

Dennison, L., Morrison, L., Conway, G., & Yardley, L. (2013). Opportunities and challenges for smartphone applications in supporting health behavior change: Qualitative study. *Journal of Medical Internet Research*, *15*(4).

Dharia, S., Jain, V., Patel, J., Vora, J., Yamauchi, R., Eirinaki, M., & Varlamis, I. (2016, August). PRO-Fit: Exercise with friends. In *Advances in Social Networks Analysis and Mining (ASONAM), 2016 IEEE/ACM International Conference on* (pp. 1430-1433). IEEE.

Duffy, J. (2020, January 7). The best fitness apps. PCMAG. Retrieved April 12, 2020, from https://www.pcmag.com/news/the-best-fitness-apps-for-2020

Flynn, F. J., Reagans, R. E., Amanatullah, E. T., & Ames, D. R. (2006). Helping one's way to the top: Self-monitors achieve status by helping others and knowing who helps whom. *Journal of Personality and Social Psychology*, *91*(6), 1123-1137.

Gangestad, S. W., & Snyder, M. (2000). Self-monitoring: Appraisal and reappraisal.*Psychological Bulletin*, 126(4), 530-555.

Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring consumer innovativeness. *Journal of the Academy of Marketing Science*, *19*(3), 209-221.

Hsiao, C. H., Chang, J. J., & Tang, K. Y. (2016). Exploring the influential factors in continuance usage of mobile social apps: Satisfaction, habit, and customer value perspectives. *Telematics and Informatics*, *33*(2), 342-355.

Huang, T. T. K., Harris, K. J., Lee, R. E., Nazir, N., Born, W., & Kaur, H. (2003). Assessing overweight, obesity, diet, and physical activity in college students. *Journal of American College Health*, *52*(2), 83-86.

Katz, J. E., & Rice, R. E. (2002). *Social Consequences of Internet Use: Access, Involvement, and Interaction*. MIT press.

Kilpatrick, M., Hebert, E., & Bartholomew, J. (2005). College students' motivation for physical activity: Differentiating men's and women's motives for sport participation and exercise. *Journal of American College Health, 54*(2), 87-94.

Kim, S. (2011). The diffusion of the Internet: Trend and causes. *Social Science Research, 40*(2), 602-613.

Kwan, B. M., & Bryan, A. D. (2010). Affective response to exercise as a component of exercise motivation: Attitudes, norms, self-efficacy, and temporal stability of intentions. *Psychology of Sport and Exercise, 11*(1), 71e79.

LaRose, R., & Hoag, A. (1997). Organizational adoptions of the internet and the clustering of innovations. *Telematics and Informatics, 13*(1), 49-61.

Lennox, R.D. & Wolfe, R.N. (1984). Revision of the self-monitoring scale. *Journal of Personality and Social Psychology, 46*(6), 1349-1364.

Leung, L., & Wei, R. (1999). Who are the mobile phone have-nots? Influences and consequences. *New Media & Society*, *1*(2), 209-226.

Marmo, J. (2013). Applying social cognitive theory to develop targeted messages: College students and physical activity. *Western Journal of Communication, 77*(4), 444-465.

Marsh, H. W., & Parker, J. W. (1984). Determinants of student self-concept: Is it better to be a relatively large fish in a small pond even if you don't learn to swim as well?. *Journal of Personality and Social Psychology, 47*(1), 213-231.

McAuley, E., & Courneya, K. S. (1992). Self-efficacy relationships with affective and exertion responses to exercise. *Journal of Applied Social Psychology, 22*(4), 312e326. DOI: 10.1111/j.1559-1816.1992.tb01542.x.

Meier, S.T. (2008). *Measuring Change in Counseling and Psychotherapy*. Guilford Press: New York, NY.

Miller, K. E., Kuhn, E., Yu, J., Owen, J. E., Jaworski, B. K., Taylor, K., ... & Possemato, K. (2019). Use and perceptions of mobile apps for patients among VA primary care mental and behavioral health providers. *Professional Psychology: Research and Practice*, *50*(3), 204-209.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research, 2*(3), 192-222.

Ng, Y. M. M. (2020). Re-examining the innovation post-adoption process: The case of Twitter discontinuance. *Computers in Human Behavior*, *103*, 48-56.

Okazaki, S., Castañeda, J. A., Sanz, S., & Mukherji, P. (2017). Physicians' motivations to use mobile health monitoring: A cross-country comparison. *Behaviour & Information Technology*, *36*(1), 21-32.

Parthasarathy, M., & Bhattacherjee, A. (1998). Understanding post-adoption behavior in the context of online services. Information Systems Research, 9(4), 362-379.

Pew Research Center. (2019, June 12). Mobile fact sheet. Retrieved April 15, 2020 from: http://www.pewinternet.org/fact-sheet/mobile/

Rhodes, R. E., Macdonald, H. M., & McKay, H. A. (2006). Predicting physical activity intention and behaviour among children in a longitudinal sample. *Social Science & Medicine*, *62*(12), 3146-3156.

Richardson, C. R., Buis, L. R., Janney, A. W., Goodrich, D. E., Sen , A., Hess, M. L., Mehari, K. S., Fortlage, L. A., Resnick, P.J., Zikmund-Fisher, B. J., Strecher, V. J., & Piette, J.D. a (2010). An online community improves adherence in an Internet-mediated walking program. part 1: Results of a randomized controlled trial. *Journal of Medical Internet Research, 12*(4), 2-2.

Rogers, E.M. (2003). *Diffusion of Innovations*. 5th Ed. Free Press: New York, New York.

Rosenberg, J., & Egbert, N. (2011). Online impression management: Personality traits and concerns for secondary goals as predictors of self-presentation tactics on Facebook. *Journal of Computer-Mediated Communication*, *17*(1), 1-18.

Scheirer, M. A. (1990). The life cycle of an innovation: adoption versus discontinuation of the fluoride mouth rinse program in schools. *Journal of Health and Social Behavior*, 203-215.

Scheirer, M. A. (2005). Is sustainability possible? A review and commentary on empirical studies of program sustainability. *American Journal of Evaluation*, *26*(3), 320-347.

Shah, P. D., Marciniak, M. W., Golden, S. D., Trogdon, J. G., Golin, C. E., & Brewer, N. T. (2018). Pharmacies versus doctors' offices for adolescent vaccination. *Vaccine*, *36*(24), 3453-3459.

Smith, A. (2011, August 15). Americans and their cell phones. Pew Research Center's Internet American Life Project RSS. Retrieved April 19, 2015, from http://www.pewinternet.org/2011/08/15/americans-and-their-cell-phones/

Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, *30*(4), 526-537.

Snyder, M., Gangestad, S., & Simpson, J. A. (1983). Choosing friends as activity partners: The role of self-monitoring. *Journal of Personality and Social Psychology, 45*(5), 1061–1072. DOI: 10.1037/0022-3514.45.5.1061

Spiller, J., Vlasic, A., & Yetton, P. (2007). Post-adoption behavior of users of internet service providers. *Information & Management, 44*(6), 513-523.

Standage, M., Duda, J. L., & Ntoumanis, N. (2003). A model of contextual motivation in physical education: Using constructs from self-determination and achievement goal theories to predict physical activity intentions. *Journal of Educational Psychology*, *95*(1), 97-110.

Stevens, V. J., Funk, K. L., Brantley, P. J., Erlinger, T. P., Myers, V. H., Champagne, C. M., ... & Hollis, J. F. (2008). Design and implementation of an interactive website to support long-term maintenance of weight loss. *Journal of Medical Internet Research, 10*(1).

Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, *29*(6), 420-433.

Tully, M. (2015). Investigating the role of innovation attributes in the adoption, rejection, and discontinued use of open source software for development. *Information Technologies & International Development, 11*(3), 55-69.

Vickey, T., Breslin, J., & Williams, A. (2012). Fitness--there's an app for that: Review of mobile fitness apps. *International Journal of Sport & Society*, *3*(4).

Vishwanath, A., & Barnett, G. A. (2011). *The Diffusion of Innovations: A Communication Science Perspective.* New York: Peter Lang.

Vishwanath, A., & Chen, H. (2006). Technology clusters: Using multidimensional scaling to evaluate and structure technology clusters. *Journal of the American Society for Information Science and Technology*, *57*(11), 1451-1460.

Vishwanath, A., & Goldhaber, G. M. (2003). An examination of the factors contributing to adoption decisions among late-diffused technology products. *New Media & Society*, *5*(4), 547-572.

Vishwanath, A., & Scamurra, S. D. (2007). Barriers to the adoption of electronic health records: Using concept mapping to develop a comprehensive empirical model. *Health Informatics Journal*, *13*(2), 119-134.

Webster, C. A., Mîndrilă, D., Moore, C., Stewart, G., Orendorff, K., & Taunton, S. (2020). Measuring and Comparing Physical Education Teachers' Perceived Attributes of CSPAPs: An Innovation Adoption Perspective. *Journal of Teaching in Physical Education*, *39*(1), 78-90.

West, J. H., Hall, P. C., Hanson, C. L., Barnes, M. D., Giraud-Carrier, C., & Barrett, J. (2012). There's an app for that: Content analysis of paid health and fitness apps. *Journal of Medical Internet research*, *14*(3), e72.

"It Can Happen to Anybody's Child": How Families Affected by Shaken Baby Syndrome/Abusive Head Trauma Work through the Stages of Family Crisis

Amber Sorenson

Although not frequently discussed in mainstream society, shaken baby syndrome/abusive head trauma is a significant problem. Victimized children often die as a result of the injuries they face, or they endure many struggles as they move forward in life—often with severe mental and physical disabilities. Families are often physically and psychologically unprepared for how a shaken baby syndrome/abusive head trauma diagnosis affects their lives for many years to come. This pilot study looks at how ten people affected by shaken baby syndrome/abusive head trauma work through the crisis situation and learn how to rebuild their lives and interpersonal relationships in the process.

Introduction

Shaken baby syndrome/abusive head trauma (SBS/AHT) is the number one cause of child abuse related deaths in the United States ("Learn More," n.d.). While many times the abuse goes unreported, there are approximately 4,824 reported cases of shaken baby syndrome/abusive head trauma per year (Miller, Steinbeigle, Lawrence, Peterson, Florence, Barr, & Barr, 2018). Although there are varying reports as to how many of those children will succumb to their injuries, estimates state that around 334 of those abused children will die (Miller et al., 2018). However, the majority (around 70 to 80%) of those who do survive SBS/AHT "suffer from significant physical disabilities and neurological impairment," with only around "10–15%" having few to no significant medical issues or disabilities that result from the abuse (Miller et al., 2018; Parks, Sugerman, Xu, & Coronado, 2012, para. 3; Ewing-Cobbs, Kramer, Prasad, Niles Canales, Louis, Fletcher, ... Cheung, 1998; Goldstein, Kelly, Bruton, & Cox, 1993; Kivlin, Simons, Lazoritz, & Ruttum, 2000; Starling, Holden, & Jenny, 1995). While a significant amount of research has been done regarding the medical aspects of shaken baby syndrome/abusive head trauma, research has not been done in the communication studies field on how the family is affected when a member is victimized by shaken baby syndrome/abusive head trauma. Healthcare workers in particular often do not know how survivors and their families manage the new reality that SBS/AHT brings, after being discharged from hospital care. In this study, three high-functioning adult survivors and seven non-offending parents of children who have been victimized by SBS/AHT were interviewed about how the experience has had a long-term effect on their families and interpersonal relationships.

SBS/AHT is a preventable form of child abuse, that is generally "most common in children under age five, with children under one year of age at most risk" ("Preventing Abusive Head Trauma in Children," n.d., para. 1). While "shaken baby syndrome" is the term that is most recognizable by the general public, "abusive head trauma" has also gained traction in recent years for medical and legal purposes, since shaking is not the only abusive act that causes traumatic injuries. In order to remain up to date with what causes such complex and often multi-faceted injuries, "the American Academy of Pediatrics (AAP) officially recommended using 'abusive head trauma' to describe any assault-related injury inflicted to the head and its contents among children" in 2009 (Parks et al., 2012, para. 1; Christian, Block, & the Committee on Child Abuse and Neglect, 2009). Furthermore, "abusive head trauma" is a term that "encompasses shaken baby syndrome and other forms of child abuse" (Miller et al., 2018, p. 695; Parks et al., 2012). In this paper, "shaken baby syndrome/abusive head trauma" will be used, along with simply "SBS/AHT."

SBS/AHT generally occurs when a parent or other caregiver of an infant loses their composure. This usually happens when they are trying to get the child to stop crying, and shake the child out of frustration. Repeated shakings happen frequently, but even just a one-time occurence can cause potentially irreparable damage. Shakings cause a "concussion-like brain injury" (Barr, 2012, p. 3), which can create a cyclic behavior on the caregiver's part, if they think that the shaking caused the child to stop crying. External injuries are not usually evident.

Blunt force trauma is also sometimes involved, if the child was struck with some sort of blunt object. In addition, if a child is thrown or slammed down in a violent manner, the same kinds of injuries often result (Miller et al., 2018). Often times, a combination of shaking and blunt force trauma may be involved in causing the traumatic injuries.

The abused child suffers devastating injuries, including: bleeding in the back of the eyes (retinal hemorrhaging), traumatic brain injury, skull and facial fractures, and brain bleeds (Adamsbaum, Grabar, Mejean, & Rey-Salmon, 2010; Niederkrotenthaler, Xu, Parks, & Sugerman, 2013). There is never any typical case of SBS/AHT, as the effects of the trauma differ for every individual that endures the abuse. On one end of the spectrum, children may make a remarkable recovery from their injuries, and go on to lead fulfilling and productive lives. These would be considered the high-functioning survivors, that appear to have suffered little to no long-term effects. Then, on the other hand, many children will become dependent on the care of others for the rest of their lives—enduring many lifelong physical and mental disabilities.

Literature Review: Stages of Family Crisis

For any family, a SBS/AHT diagnosis brings a wide range of emotions, from denial to anger to sorrow—and everything in between. The unpredictable stresses that cause those emotions in families sometimes turn into crisis situations. For most people—including the participants of this study, the abuse and events following a SBS/AHT diagnosis very much constituted a major life crisis in the family. "When a family lacks the resources to cope or when "family demands significantly exceed their capabilities"" to manage those stressors, family crises will arise (Galvin, Braithwaite, & Bylund, 2015, p. 279; Patterson, 2002, p. 351). Interviewees in this study appeared to have gone through, or still be working through the various stages of family crisis, as a result of a SBS/AHT diagnosis within the family. These stages are not clear-cut, as they can overlap with each other, as well as repeat multiple times. The stages typically include: shock/denial, recoil, depression, and reorganization (Galvin et al., 2015).

Shock/Denial. Shock/denial is generally the first stage that families go through during a time of crisis. Those crises may include the death of a family member, serious illness in the family, etc. This can be a difficult time, as the family tries to make sense of the gravity of the situation. People may feel like their entire worldview has been changed and altered during this stage—maybe even like their life as they once knew it is crumbling beneath them.

These emotions can frequently arise when families are coping with the sudden death of a family member, such as is the case with suicide. Sibling survivors of suicide, who were especially close to their sibling who took their own life, are often "shocked to find that they would choose to end their life" (Powell & Matthys, 2013, p. 331). Siblings that are in that particular situation have to cope with not only the shock of the event itself, but also the shock that they really didn't have as close of a bond with the person as they had originally thought.

Siblings who are going through the process of their parents getting divorced can experience these feelings of shock/denial, too. Many parents may not want their children to know about their marital problems, so children might be completely blindsided when news of an impending divorce arises. Likewise, those parents are often dealing with many divorce-related legal stresses, etc., which often means that "most children receive little information needed to understand the divorce" (Jacobs & Sillars, 2012, p. 168; Wallerstein, Lewis, & Blakeslee, 2000).

Military families that are experiencing the pre-departure phase of a loved one being deployed can also experience feelings of shock/denial. Shock can arise when knowledge of the deployment is first known. If there was a quick turnaround from the last deployment

to the new one, these feelings are most likely magnified significantly. Families may face a period of denial all the way from the initial news of an impending deployment until the time that the loved one actually departs. Those feelings of shock/denial may even persist for a time after the loved one departs, as a result of the separation that occurs.

Shock and denial can also come about when parents are coping with the premature birth of their child. Parents deal with shock regarding how the birth occurred so early (Golish & Powell, 2003). Since they didn't expect the birth to happen for potentially many more weeks, parents are thrown into a role that they haven't completely prepared for—along with having to parent a child that will probably be in the hospital for a significant amount of time.

Recoil. Recoil can occur after the initial devastation and shock of a crisis event, bringing feelings of blame/guilt, anger, etc. (Galvin et al., 2015). These kinds of emotions can also frequently occur after the death of a family member, especially if the death was by suicide. Sibling survivors of suicide may deal with some potential "guilt of wondering why they could not stop the suicide or what they could have done to let their sibling know how much they were loved" (Powell & Matthys, 2013, p. 323). In that instance, the sibling survivors clearly think that there was something that they could have done/said differently, that would have kept their sibling from taking their own life.

Anger can also be directed towards the person that essentially initiated the state of family crisis, during this stage. Referring back to sibling survivors of suicide, there may be anger on the sibling's part that a person that they considered themselves close to would take their own life (Powell & Matthys, 2013). The sibling may feel a certain level of deception that their sibling—someone that they probably trusted quite a bit, would resort to suicide, especially if there didn't seem to be any outward, apparent signs of concern. Not only do these siblings have to deal with the shock from a completely unexpected loss in the family, but they also have "unresolved anger" surrounding the whole event—since "they felt that there had been no previous thoughts of suicide" (from the sibling) (Powell & Matthys, 2013, p. 331).

This can often be quite a difficult change for siblings that are going through a parental post-divorce adjustment period. The siblings might even express anger and resentment before their parents' divorce even happens. They may believe that it was their own actions that caused the marriage to fall apart. There may be a lot of self blame/guilt, if this is the case. The children might also express some anger towards one or both of their parents—especially if there is confusion as to why the divorce is even happening to begin with.

Military families can also go through a certain period of recoil, when coping with a loved one's deployment. For children

especially, this can be a prevalent stage. They are often losing the everyday presence of a parent in their lives for quite a significant amount of time. Children may become distressed and act out more, especially if there are more frequent deployments (Collins, 2015). Additionally, they may have to move around more—frequently adjusting to new schools, friend groups, and social settings. As those things are such major aspects of a child's life, frequently having to adjust to those new settings can be a source of major anxiety and distress. There is more change and disruption in the family than before the deployment, and children may not know how else to cope—besides acting out. Further, parents may return with depression, post traumatic stress disorder, etc.—which may also be difficult for the children to understand.

Regarding parents of premature babies, this can be a time where there is a lot of self blame/guilt, also. Mothers, especially, will wrack their brains and wonder how and why their pregnancy ended early, if they "did 'everything right'" (Golish & Powell, 2003, p. 314; Powell & Wilson, 2000). Irrational thoughts and ideas may begin to creep into the stream of consciousness, as parents simply try to make sense of the event. They may think that the early birth is their fault—that if they had only done one thing differently, maybe that would have changed the outcome (Golish & Powell, 2003).

Depression. This tends to be similar to the recoil stage, but the feelings are directed more internally, rather than externally (Galvin et al., 2015). While it certainly can encompass a full on depression, this stage would also include any kinds of overwhelming sadness and similar kinds of emotions that a person may experience, due to a family crisis. During this time is when family members need more outside support than ever—even if that means simply lending a sympathetic ear (Galvin et al., 2015).

Sibling survivors of suicide "who encounter harmful responses have reported more difficulty with grief due to dealing with judgments of others regarding the suicide (Powell & Matthys, 2015, p. 322; Feigelman, Gorman, & Jordan, 2009). People do not like to feel judgment in any situation, especially if dealing with grief. Such attitudes will generally have a more negative effect, causing the affected person to suppress their grief and sadness, more so than expressing it.

For siblings that are experiencing their parents' divorce, this may be considered one of the more major stages. Fortunately, siblings are often able to help each other through their parents' divorce by listening to each other and providing emotional support (Jacobs & Sillars, 2012). In a time of chaos and confusion, "sibling relationships are often a source of stability and resilience following parental divorce, sometimes profoundly so" (Jacobs & Sillars, 2012, p. 182). The siblings are often the few people that truly understand

the emotions, etc. that each other are going through in their particular family situation. This can be immensely helpful in moving past the grief/sadness of the particular family structure ceasing to exist.

This is also a prevalent stage when it comes to military families going through a loved one's deployment. Family members are already significantly worried about their loved one's well-being during deployment. The added stresses and uncertainties about the deployment can leave "at-home spouses experiencing worse mental health outcomes as a result of prolonged wartime separation (i.e., a year or longer)" (Maguire & Parcell, 2015, p. 367; Knobloch & Wilson, 2015). If the couple has children, this stage is most likely even more difficult to manage. At-home spouses then have to help their children cope with the deployment, along with dealing with it themselves. With many at-home military spouses, "multiple and prolonged deployments are associated with increased anxiety and depression" (Verdeli, Baily, Vousoura, Belser, Singla, Manos, 2011, p. 490). The length and frequency of deployments most likely influences how the family chooses to cope with those accompanying stresses and uncertainties.

Mothers of premature babies experience this deep, internal sadness all around—in coping with the loss of a full term pregnancy, then not being able to care for and interact with their baby as much directly after birth, to managing feelings of self blame/guilt. Golish & Powell (2003) report that 54% of the parents that they studied reported these types of symptoms, due to coping with the premature birth. Sadness, anxiety, and depressive symptoms that these parents feel can often be magnified when surrounded by people that may not understand the entire "preemie experience," and all that it entails (Golish & Powell, 2003, p. 314). If that strong social support is not readily available—if parents do not feel as though their social network is being very understanding, intensified feelings of loneliness and isolation tend to occur.

Reorganization. At this stage, families have come to some sort of acceptance about the crisis situation—it's a "turning point," of sorts (Galvin et al., 2015). This is when families adjust to their new "normal" and the changes and adaptations that the crisis brought to their family. Families may be more open to discussion and reaching out for more social support from others that may be going through similar experiences, which is when online or face-to-face support groups may be of benefit. Families coping with the sudden death of a family member by suicide will frequently join support groups for surviving family members, as a way to have "a connection to other survivors" (Powell & Matthys, 2015, p. 333). While they may not be at a point of complete acceptance at this point, families do begin to move forward with their lives. In dealing with a death in the family by suicide, reaching this point does not imply that the affected

individuals will forget all of the emotional ties and fond memories that they had with the deceased person. Remembering those aspects of the deceased person is actually more of a positive way of managing the grief, that will always be present—but not overwhelmingly so (Powell & Matthys, 2015). It also does not mean that any and all questions surrounding the death have been resolved—but rather, that those thoughts and feelings will not be such a large, prevalent aspect of the lives of those family members left behind.

Reorganization of post-divorce family structures may evolve over several months or even years, as parents remarry or new children come into the family (either from previous marriages or births). When siblings were non-verbally or verbally supportive during the divorce process, they provided "a sense of continuity and shared experience during family dissolution and reorganization" (Jacobs & Sillars, 2012, p. 183). Even just having a supportive attitude was found to be beneficial as siblings work through this final stage of reorganization, but those with supportive siblings were found to cope a bit better with the transition, overall (Jacobs & Sillars, 2012).

For military families, this period of reorganization comes with the loved one's return after a deployment. During this time of reunion, families essentially have to renegotiate how they have been going about their day-to-day lives. In families with children, they make the transition from most likely a single parent family back to one with both parents being present. This may lead to some tensions amongst family members, as daily routines and patterns may change with the return of the deployed loved one (Maguire & Parcell, 2015). Additionally, spouses may have to work on adjusting their patterns of marital communication, following a deployment. Even if there has always been healthy, open communication in the marriage, spouses "may feel the need to avoid discussing topics like the possibility of future deployments or other troubles to keep peace in the family" (Maguire & Parcell, 2015, p. 368; Knobloch, Ebata, McGlaughlin, & Theiss, 2013).

This can be a difficult point to come to for parents dealing with the premature birth of a baby. Although the worry about the premature child's health and overall well-being will probably always exist to some degree, those feelings are managed in a way that is not all consuming. With parents of premature babies particularly, it is especially crucial that they are allowed to heal and learn how to cope with the situation in the long run, on their own terms (Golish & Powell, 2003). Parents do not want to feel as though they are being rushed through the healing process, after the events surrounding the premature birth start to de-intensify.

This research on adult high-functioning survivors and parents of children affected by SBS/AHT will provide insight into how affected family members learn how to work through and manage a SBS/AHT diagnosis. The changes that a crisis situation brings usually have an effect on the interpersonal relationships between all who are involved in the event, as well. This research will look at how families manage a SBS/AHT diagnosis and its challenges, as well as how those changes affect interpersonal relationships between family members. Hopefully, in doing so, this study will provide guidance to those who are rebuilding their lives after the abuse occurs. Therefore, the research questions are:

RQ1: After a child is victimized by shaken baby syndrome/abusive head trauma, how do families alter their communication patterns in order to work through the crisis situation?

RQ2: How does a shaken baby syndrome/abusive head trauma diagnosis impact interpersonal communication in familial relationships?

Method

Participants

Interviews were conducted with three high-functioning adult survivors of shaken baby syndrome/abusive head trauma and seven parents of children who had been victimized by SBS/AHT. Eight participants were females and two were males. Of the seven parents that were interviewed, six were biological parents of the child who had been shaken, and one was an adoptive parent. With the adoptive parent, the adoption had been an in-family adoption situation—so the participant still had detailed information regarding the shaking and other abuse that occurred. The two males who participated in the study were biological twin brothers, who were both shaken. The participants' current ages ranged from 18 to 53 years, with a mean of 34.3 years. At the time that the abuse occurred, the victimized children (four females, six males) ranged in age from 2 to 17 months, with a mean of 5.3 months. The children that were abused currently range in age from 3.5 to 24 years, with a mean of 13.35 years.

Of the seven parents who were interviewed, three were married at the time that the abuse occurred and are still married currently. One was single at the time that the abuse occurred and is still single currently. One was married at the time that the abuse occurred and has since divorced, and is now remarried. Two were married at the time that the abuse occurred and have since divorced, and have not remarried. Of the three participants who were survivors, one's parents were single when the abuse occurred, and now one is single and one has since married. Two survivors' parents were single when the abuse occurred and are still single. Eight participants' reported race was white. Two participants' reported race was

white/African American. Current education levels of participants varied. All participants had at least a high school degree. One had an associate's degree. Four had bachelor's degrees, and two had master's degrees. Two participants were actively working towards a college degree. Participants reported occupations in different areas, including: business/higher level management, finance, nursing, education, pharmaceutical sales, and retail. Two participants were current college students, and one was a stay at home parent. One participant reported having no other children, besides the one that was abused. Three participants have one other child, and three participants reported having two other children or siblings, currently. Three participants have four other children or siblings.

Materials & Procedure

Participants were selected through email correspondence, an online support group, and through snowball sampling. Participants had to be either a high-functioning survivor of shaken baby syndrome/abusive head trauma, age 18 or older, or a parent of a child who had been victimized by SBS/AHT (also age 18 or older). 16 open-ended interview questions were asked, as well as a series of demographic questions. The demographic questions were used to provide some basic insight into the background of the family, before and after the child was shaken. The primary interview questions followed, in order to explore the participant's feelings, experiences, etc. surrounding them or their child being shaken/abused. (See Appendix).

The responses from these primary interview questions provided an in depth look at the family's overall experience surrounding a SBS/AHT diagnosis. Many participants shared specific examples and stories in regards to certain questions, which provided a powerful understanding of the struggles that families who have experienced a SBS/AHT diagnosis go through on a daily basis. In addition to the primary interview questions, several follow-up questions were asked during each interview, when deemed necessary by the researcher—either for clarification purposes or in order to probe for a more detailed response.

Due to geographic distance, none of the interviews were conducted face-to-face. Since human subjects were used in this study, the project was approved by the researcher's local institutional review board before interviewing commenced. One interview was conducted through Facebook video chat, three by Facetime video calls, and six were conducted by telephone. The interviews ranged from 20 to 58 minutes in length, with a mean of 39.3 minutes. All of the interviews were recorded and then transcribed. Participants were read a consent statement by the researcher and gave verbal consent before the interview began. The statement included details about the purpose of the study, and other pertinent information regarding the

participant's confidentiality, and the fact that they were being recorded (in order to later transcribe responses).

Analysis

After conducting each interview, each one was carefully transcribed, in order to analyze themes that were present. The transcribed interviews yielded approximately 87 single-spaced pages of data. I read through the transcripts multiple times in order to discover recurring themes. Themes were then chosen through William Foster Owen's (1984) criteria for determining themes—based on recurrence, repetition, and forcefulness that was observed in transcribed interviews. Several themes surrounding the stages of family crisis emerged from that process.

Results

Shock/Denial. All participants reported that they dealt with a significant sense of shock/denial, in terms of finding out about the diagnosis as a parent, or later on, as a survivor. The state of shock/denial was generally surrounded by the thought that child abuse (and SBS/AHT) happens, but participants often never thought it would affect their own family. Stacey talked about how she found out around age 12, that she had been victimized as a child:

> ...so it was then that they (mother and step-father) sat me down and told me (about the abuse) and I was like "no" [chuckles/laughs] I was in denial, cause I was like "but I'm, I'm like everyone else, what?" And they finally had to pull up newspaper articles for me to actually have it like "click."

For both parents of victims and survivors, there is the shock that the abuse actually did happen, but also that it was such a sudden thing. Often times, there is also shock present in the fact that the alleged abuser is typically someone that the family knows well—a babysitter, other family members, etc. SBS/AHT does not discriminate, so for the parent of a child who was perfectly happy and healthy before, to then be near death, in many cases—is very difficult to grasp. In Stacey's case, she had always seen herself as "normal," being a high-functioning adult survivor of SBS/AHT. She had to renegotiate her own self-concept after receiving that life changing information.

Recoil. Issues relating to trust and deception were seen across interviews. The person that parents trusted to care for probably what they value most in life—their child—has completely destroyed and betrayed that trust. Not only has the abuser committed such a heinous act on a child, generally a helpless baby—but those that are alleged to have committed the crime are often not truthful in detailing exactly what events occurred. Parents feel like the rug is just pulled out from under them, so to speak. Carly started to get emotional as she described how she felt after receiving the news of her daughter's SBS/AHT diagnosis: "I never imagined that anyone would do this to a child, let alone my own child… I recall at one point, just having a

complete meltdown in the ICU, and crying, and saying, "I just want my baby back."

When another family member is responsible for the abuse, the deception that is also often present in their sequence of events can be even more devastating. When this was the case, many participants felt like they had "let down" the victimized child on an even greater level somehow, since they had somewhat of a role in what that relationship was like, between the (now) abuser and victimized child. Anne discussed the anger she felt towards her (ex) husband, after receiving her son's SBS/AHT diagnosis: "I felt anger, I felt, at him. I felt guilt as a mother, because I didn't protect him (her son) enough, because I, I never saw that side of his dad, we never argued, we never fought. It was the best relationship I had ever been in."
Although she was at work at the time that the abuse occurred, Anne still felt like she should have been there for her son and could have somehow prevented the abuse.

Depression. While a SBS/AHT diagnosis brought a certain level of sadness with it to all participants' experiences, three participants appeared to struggle a bit more emotionally and mentally with the child's diagnosis. Several parents mentioned how they now grapple with post-traumatic stress disorder, separation anxiety, etc., after going through this experience with their child. They had to learn how to cope with the diagnosis/abuse itself, the significant hospitalization that followed, the intense therapy (in some cases), and renegotiating a new "normal" for their family.

When other family members gained a greater understanding of SBS/AHT overall, it seemed to have a positive effect during this stage. Even if participants were feeling overwhelmed and saddened by the abusive events that transpired, having the support of family, especially, was crucial, during this time. It was of utmost importance for participants to have that understanding support network of people to talk to about the challenges associated with SBS/AHT. Participants did not want to feel like their own or their children's behavior, appearance, etc. was being judged by family or outsiders.

Carly emphasized the struggles that she faces with family members and a sense of separation or loneliness, due to the amount of care that her daughter now requires. She said:

> So I think unfortunately, it's (the abuse) had the negative effect of making it harder to be close with family members, and as a result of that, ya know—at times I feel more secluded. Because it is hard for me to connect with people, who don't fully understand the experience, and understand what it's like.

Carly desired a closer relationship with family members, but felt a bit isolated and distant, due to how much care her daughter now requires, as a result of the abuse. She went on to discuss how the

abuse her daughter endured has affected her relationships with not just family members, but with everyone else also.

Reorganization. Openness about the abuse that the child endured was prevalent in some way in all participants' responses. Most families were quite open in terms of discussing the abuse in appropriate situations, with other family members and even those outside the family. Carly talked about the abuse that her child suffered. She said: "I'm not very restrictive in sharing the story, because I think it's important for people to know that this happens, and that [um] ya know, it's 100% preventable." All participants reported that being open with others about the abuse that affected them or their child was an important key to raising awareness for SBS/AHT—which is generally a topic that is not frequently discussed in mainstream society. Zach and Zane both reported that they even use their stories, if needed, to try and help others through difficult situations that they are going through—even if it is not SBS/AHT. Some participants used openness regarding their child's abuse in a slightly different manner. Not only did they spread awareness about the child abuse through talking with others, but they also took action to benefit those who may also be affected, by donating funds, stuffed animals, etc. to local hospitals. Participants did this to provide the child with a greater understanding of the abuse that they endured—providing a teachable moment, so to speak.

All of the parents that were interviewed had either told their child about the abuse that occurred, at a developmentally appropriate level, or they stated that they would—if the child is able to comprehend the extent of the abuse in the future, given the injuries that they sustained. The adult survivors were also told about the abuse that they endured at a fairly early age. A common thought behind the decision to be open and disclose that information to the child that was victimized was that the parent would want to know about the abuse, if they were in the child's shoes. Many participants also emphasized that they felt that a lack of disclosure and openness with the child would lead to more issues and relationship strains down the road.

In addition to a prevalent level of openness, all participants noted some sense of changed family styles, as a result of the abuse. Participants were not as rigid in their parenting techniques before the abuse, whereas afterwards, they were more protective in many cases. This finding seemed to be even more true if the child sustained more severe injuries from the abuse. Most of the parents that were interviewed reported an increased protective behavior with the abused child, and also with their other children—if they had any other children.

Discussion

When a family member is affected by SBS/AHT, it is a family crisis situation—for both the victim and their family. All of the participants that were interviewed for this study clearly worked through (or were still working through) many of the management/coping strategies related to family crises: shock/denial, recoil, depression, and reorganization (Galvin et al., 2015). This study supports previous research that has been done on other family crises, such as (sudden) deaths and premature births. While the specific circumstances vary, how families navigate each crisis is quite similar.

Communication Patterns after Victimization by shaken baby syndrome/abusive head trauma, how do families alter their in order to work through the crisis situation?

SBS/AHT is not like a terminal illness, in that it may progress over a period of months or even years, causing drastic changes over a significant period of time. A primary finding related to the feelings of shock/denial that participants felt was that their child had essentially been perfectly fine one minute, and then the next they were close to death, in many cases. The abuse itself, coupled with the sudden, drastic shift in the child's health, contributed to these strong feelings of shock/denial. Research by Powell & Matthys (2015) on sibling survivors of suicide and Golish & Powell (2003) on premature births, supports these findings. In some cases, the sibling survivors of suicide did not even know that their sibling was depressed and suicidal (Powell & Matthys, 2015). It is certainly a lot to take in, and probably leads to more shock/denial—simply from learning about how the sibling was actually feeling, coupled with the actual suicide itself. It most likely seems very sudden to the siblings left behind in these cases. With premature births, there might also be no warning and the birth could happen very suddenly (Golish & Powell, 2003). Since families do not really have any forewarning and are caught off guard, the feelings of shock/denial are even more present, as is also the case with many instances of SBS/AHT diagnoses.

With almost all participants, they felt a strong sense of anger towards the abusers. Carly talked about the anger that she felt towards the babysitter that shook her child: "I'm not a vengeful person, but if there was one person in the world that I would wish even just a fraction of the pain of what my family has endured as a result of this upon, it would be her." Due to the nature of SBS/AHT—generally no witnesses, no external injuries, etc.—victims do not always get justice, as was the case with Carly's child. Parents often blamed themselves for entrusting their child's care to the abuser and felt guilty for not "protecting" their child. Even if abusers are punished with criminal convictions, probation, etc., it is

often not for a significant amount of time—especially considering the lifetime of damage that they may have caused to the child. Even for participants who were considered high-functioning or parents of children who were considered high-functioning, a level of animosity towards the abuser and self-blame still existed, across interviews.

Many participants experienced at least some type of intense sadness and depressive symptoms during the immediate aftermath of the SBS/AHT incident. Participants often showed the desire to talk to other family members about the abuse that occurred and teach them about SBS/AHT. However, when people were not supportive and understanding about the challenges that the abused child faced, there tended to be more distance and seclusion created between participants and their families. Fiona talked about how her desire to try and get justice for her daughter who was shaken, as well as educate about SBS/AHT, was not well received by her (ex) husband—who just wanted her to "let it go and move on." While she has gained many meaningful connections with others through the SBS/AHT non-profit she developed, Fiona's desire to talk about SBS/AHT and get justice for her daughter was a likely factor in her divorce and essentially cutting ties with her (ex) husband's side of the family. Research by Golish & Powell (2003) supported these findings. Just as parents of premature babies do not want to feel as though others do not understand what they are going through during the process of caring for a premature baby, people affected by SBS/AHT either as a parent or survivor, do not want to feel like others are failing to understand the complete picture.

Reorganization in all participants' families appeared to be aided by a strong level of openness, in regards to discussing the abuse and educating about SBS/AHT as a whole. According to Golish & Powell (2003), parents of premature infants do not want to feel rushed through the grieving process—of grieving the loss of their full term pregnancy and the premature birth, itself. All participants were open to disclosing information about the abuse to the affected child (at an age appropriate level), or their parents had told them about the abuse that they endured, in the case of the participants who were adult survivors. Nadine talked about how being open and talking about the abuse that her child endured with others that have also been victimized, led to her creating an organization for shaken baby syndrome awareness. She now helps other families that are going through the same experiences that her family has faced.

When participants talked more with others about SBS/AHT, whether that be with friends, family, or other families affected by SBS/AHT—it seemed to help them realize that they were not alone in their individual experiences. They knew other people were going through the same trials and tribulations, and that thought appeared to help many participants begin to move forward, even as a changed

family system. Carly spoke of how the abuse that affected her family changed her, personally: "...I feel like… until you're in someone's shoes, you really have no idea what they go through. But, I feel like I'm a more understanding and compassionate person, and I think it—that makes me a better parent, for my daughter." Research by Powell & Matthys (2015) clearly supports Carly's sentiments. Like many sibling survivors of suicide, this statement does not indicate that Carly has completely healed from the abuse that her daughter endured. However, she has reached a point where the abuse and the events surrounding it, are not all encompassing in her life. Participants tried to focus more on positive things, rather than negative emotions about the situation. In doing so, most participants also reported an increased level of closeness between themselves and their children and/or parents.

How does a shaken baby syndrome/abusive head trauma diagnosis impact interpersonal communication in familial relationships?

A SBS/AHT diagnosis in a family impacts interpersonal relationships in many ways. Through this study, two factors appeared to contribute the most to how relationships were impacted.

Who the abuser was: someone from inside the family versus an outsider. Two children from this study were abused by someone outside the family. In these cases, the abuser was generally a babysitter or daycare provider. Of the participants that were interviewed, eight of the children had been abused by someone from inside the family. That was generally one of the child's biological parents, but also included extended family members.

In the cases of the two children who were abused by a daycare provider of some type, the impact on the interpersonal relationships within the family were essentially polar opposites. Quinn's son was abused by a daycare provider. He is now considered high-functioning, with no apparent long-lasting effects from the trauma. There were obviously some strains within the family in the immediate aftermath of the abuse. However, at the time of the interview, Quinn did not report many changes in her interpersonal relationships within her family, as a result of the abuse. In this case, their family could cut all ties with the abuser.

Carly's daughter was also abused by a daycare provider. While she no longer has to have any contact with the person who was responsible for the abuse, her daughter sustained significant injuries as a result of the trauma that she endured. She now has cerebral palsy and is dependent on help from others "for almost everything." Carly talked about the stress that managing all of her daughter's needs has created in her relationship with her husband. Her husband and her can not go out and easily have a date night and spend time together, alone. Not everyone is equipped with the skills needed to take care of

her daughter, especially since they do not live near other family members.

If the child was abused by someone from inside the family, how interpersonal relationships were impacted between family members varied widely. In most cases, participants still had close relationships either with those who supported them and/or their children during the initial aftermath of the abuse. When a biological parent had abused the child, most participants were still close with the non-abusive parent's side of the family. With the three adult survivors, the findings were especially interesting. Stacey essentially cut off most communication with her biological father's side of the family, after she learned that he had abused her as a baby. Zach and Zane both reported that going through the abuse made their (most likely) already close bond as twins, even closer. They each understood what the other was going through, since they had both been shaken and sustained similar injuries. In addition, they both reported a pretty strong level of animosity towards their biological father when they were younger and just learning of the abuse. Currently, Zach and Zane have a civil, respectful relationship with their biological father and have interacted with him. Zane talked about their relationship: "We have a respectful relationship towards each other now, and—I've forgiven him for doing that to me, but it'll never be father-son type relationship." While some participants appeared to be moving toward forgiving the abuser to some extent, Zane was the participant who most explicitly stated those feelings—even though it does not excuse his father for his actions.

The extent of the child's injuries that were caused by SBS/AHT. The severity of the child's injuries that they sustained as a result of SBS/AHT, appeared to play a role in the impacts on interpersonal relationships within the family. Less long-lasting injuries to the child appeared to create less of a negative impact on interpersonal relationships within the family, and vice versa. These connections seemed to rely on the notion that the children that sustained more long-term injuries and disabilities generally had more needs to manage—from therapy, to medications, to behavioral issues. Most children that did sustain more damage from the abuse were either at least partially or completely dependent on a caregiver, which was typically the parent. Children that were considered more high-functioning did not appear to require the same amount of care. This alleviated would-be stress on the parents' part, and it allowed them to continue placing a greater emphasis on their social network and maintaining those interpersonal relationships.

Validity

During the process of conducting interviews, one recording was corrupted—so that interview transcription is not verbatim, but a fairly accurate depiction of the thoughts and ideas that were stated by

that particular participant. In addition, since the two males who participated were biological twin brothers who were both shaken, their responses were somewhat similar. Even though their experiences were similar, coming from the same situation, their perceptions of those experiences generally appeared to be different. Further, I am actually a high-functioning survivor of SBS/AHT. I was shaken at four months old, but hopefully that personal experience did not contribute to any bias when reporting my research findings.

Limitations & Further Research

This study has several limitations. I had essentially no relationship with any of the participants before conducting the interviews. This did allow me to maintain a fairly professional and unbiased perspective while interviewing participants. However, due to an essentially non-existent relationship with me beforehand, some participants may have felt uncomfortable with sharing such information, but I actually did not find that to be the case. Most participants are actively involved in advocacy efforts regarding SBS/AHT on different levels, which most likely played into the in-depth responses that I received during many interviews. It would be interesting for future studies, to see if different results emerged with people who were not taking on as much of an advocacy role in terms of sharing their stories with others. Participants like that may be more difficult to find, though. In addition, many people have lost children, grandchildren, etc., who have succumbed to injuries from SBS/AHT. While many of the participants in this study or the participants' children sustained varying levels of disability because of the abuse, none of the participants had experienced the death of a child, grandchild, etc., because of SBS/AHT. If any participants had lost a child, grandchild, etc., there may have been different responses seen in regards to certain interview questions.

This study made a significant contribution to research in the communication field on SBS/AHT, which has been essentially untouched. While there are many studies regarding the medical aspects of SBS/AHT, there has not been research done that delves into the experiences and feelings of families that have been affected by this form of child abuse. It provides a strong insight into the feelings and thoughts surrounding ten peoples' experiences with shaken baby syndrome/abusive head trauma, which will hopefully be beneficial to families that are facing the same struggles in the future. This study will also hopefully provide insight on a topic that is generally considered a bit taboo in nature—thus not being frequently discussed in mainstream society.

References

Adamsbaum, C., Grabar, S., Mejean, N., & Rey-Salmon, C. (2010, September). Abusive head trauma: judicial admissions highlight violent and repetitive shaking. *Pediatrics, 126* (3), 546-555. doi: doi.org/10.1542/peds.2009-3647

Barr, R. G. (2012). Preventing abusive head trauma resulting from a failure of normal interaction between infants and their caregivers. *Proceedings of the National Academy of Sciences of the United States of America, 109* (Suppl 2), 17294–17301. doi: 10.1073/pnas. 1121267109

Christian, C. W., Block, R, & the Committee on Child Abuse and Neglect. (2009, May). Policy Statement: Abusive head trauma in infants and children. *Pediatrics, 123* (5), 1409-1411. Reaffirmed 2017, April. doi: doi.org/10.1542/peds.2009-0408

Collins, E. (2015). *Experts explain mental state of military children.* Retrieved from https://www.army.mil/article/147786/experts_explain_mental_state_of_military_children

Ewing-Cobbs, L., Kramer, L., Prasad, M., Niles Canales, D., Louis, P. T., Fletcher, J. M., ... Cheung, K. (1998, August). Neuroimaging, physical, and developmental findings after inflicted and noninflicted traumatic brain injury in young children. *Pediatrics, 102* (2), 300-307. doi: doi.org/10.1542/peds.102.2.300

Feigelman, W., Gorman, B. S., & Jordan, J. R. (2009). Stigmatization and suicide bereavement. *Death Studies, 33* (7), 591-608, doi: 10.1080/07481180902979973

Galvin, K., Braithwaite, D., & Bylund, C. (2015). *Family communication: cohesion and change.* Upper Saddle River, NJ: Pearson.

Goldstein, B., Kelly, M., Bruton, D., & Cox, C. (1993, September). Inflicted versus accidental head injury in critically injured children. *Critical Care Medicine, 21* (9), 1328-1332. doi:10.1097/00003246-199309000-00016

Golish, T. D., & Powell, K. A. (2003). 'Ambiguous loss': managing the dialectics of grief associated with premature birth. *Journal of Social and Personal Relationships, 20* (3), 309-334

Jacobs, K., & Sillars, A. (2012). Sibling support during post-divorce adjustment: an idiographic analysis of support forms, functions, and relationship types. *Journal Of Family Communication, 12* (2), 167-187. doi: 10.1080/15267431.2011.584056

Kivlin, J. D., Simons, K. B., Lazoritz, S., & Ruttum, M. S. (2000, July). Shaken baby syndrome. *Ophthalmology*, *107* (7), 1246-1254. doi: doi.org/10.1016/S0161-6420(00)00161-5

Knobloch, L. K., Ebata, A. T., McGlaughlin, P. C., & Theiss, J. A. (2013). Generalized anxiety and relational uncertainty as predictors of topic avoidance during reintegration following military deployment. *Communication Monographs, 80,* 452–477. doi:10.1080=03637751.2013. 828159

Knobloch, L. K., & Wilson, S. R. (2015). Families across the deployment cycle. In L. Turner & R. West (Eds.), *The Sage handbook of family communication*, 370-385. Thousand Oaks, CA: Sage.

Learn More. (n.d.). In *National Center on Shaken Baby Syndrome.* Retrieved from https://dontshake.org/learn-more.

Maguire, K. C., & Parcell, E. S. (2015). Communication and the coping paradox: the case of army spouses and wartime deployment. *Southern Communication Journal, 80* (5), 365-376. doi: 10.1080/1041794X.2015.1081973

Miller, T. R., Steinbeigle, R., Lawrence, B. A., Peterson, C., Florence, C., Barr, M., & Barr, R. G. (2018, August). Lifetime cost of abusive head trauma at ages 0–4, USA. *Prevention Science*, *19* (6), 695-704. doi: 10.1007/s11121-017-0815-z

Niederkrotenthaler, T., Xu, L., Parks, S. E., & Sugerman, D. E. (2013, July). Descriptive factors of abusive head trauma in young children—United States, 2000–2009. *Child Abuse & Neglect*, *37* (7), 446-455. doi: http://dx.doi.org/10.1016/j.chiabu.2013.02.002

Owen, F. W. (1984). Interpretive themes in relational communication. *Quarterly Journal of Speech, 70:3,* 274-287. doi: 10.1080/00335638409383697

Parks, S. E., Sugerman, D., Xu, L., & Coronado, V. (2012). Characteristics of non-fatal abusive head trauma among children in the USA: 2003–2008: Application of the CDC operational case definition to national hospital inpatient data. *Injury Prevention, 18* (6), 392–398. doi: 10.1136/injuryprev-2011-040234

Patterson, J.M. (2002). Integrating family resilience and family stress theory. *Journal of Marriage and Family, 64*, 349-360.

Powell, K. A., & Matthys, A. (2013). Effects of suicide on siblings: uncertainty and the grief process. *Journal Of Family Communication, 13* (4), 321-339. doi:10.1080/15267431.2013.823431

Powell, K. A., & Wilson, K. (2000). *Living miracles: stories of hope from parents of premature babies*. New York: St. Martin's Press.

Preventing Abusive Head Trauma in Children. (n.d.). In *Centers for Disease Control and Prevention.* Retrieved from https://www.cdc.gov/violenceprevention/childmaltreatment/abusive-head-trauma.html

Starling, S. P., Holden, J. R., & Jenny, C. (1995, February). Abusive head trauma: the relationship of perpetrators to their victims. *Pediatrics, 95* (2), 259-262.

Verdeli, H., Baily, C., Vousoura, E., Belser, A., Singla, D., & Manos, G. (2011). The case for treating depression in military spouses. *Journal of Family Psychology, 25* (4), 488-496. doi: http://dx.doi.org/10.1037/a0024525

Wallerstein, J. S., Lewis, J. M., & Blakeslee, S. (2000). *The unexpected legacy of divorce: a 25-year landmark study.* New York, NY: Hyperion.

Appendix

Families Affected By Shaken Baby Syndrome/ Abusive Head Trauma Interview Protocol

Part One: Demographic Information

I would like to first gather some background information about you and your family. If there is any other information that I haven't included, but you think is important to know, please don't hesitate to add that information where necessary.

- What is your current age?
- If your child was shaken: What was their age when the shaking occurred?
- If your child was shaken: What is their age now?
- If you were shaken: What was your age when the shaking occurred?
- Your biological sex?
    1. Male
    2. Female
- Your (if your child was shaken) or your parents' (if you were shaken) marital status when the shaking took place:
    1. Married
    2. Single
    3. Other? Please explain
- Your (if your child was shaken) or your parents' (if you were shaken) marital status now:
    1. Married
    2. Single
    3. Other? Please explain

- Who was your household family comprised of when the shaking took place? (Only include family members that lived in the same house as you)
- Who is your household family comprised of now? (Only include family members that live in the same house as you)
- What is your highest degree earned?
    1. High school degree
    2. Bachelor's degree
    3. Master's degree
    4. Ph.D.
    5. Other (please specify)
- What is your occupation?
- What is your race?
    1. White
    2. African American
    3. Hispanic American
    4. Native American
    5. Asian American
    6. Other (please specify)
- Do you have any siblings (if you were shaken) or any other children (if your child was shaken)? Please specify which, and list them. Additionally, include how old they were when the shaking occurred and their current age (s).

Part Two: Primary Interview Questions

I would now like to explore your feelings, experiences, etc. surrounding you or your child being victimized by shaken baby syndrome/abusive head trauma. You are free to answer as much or as little as you can when completing this interview.

1. Would you describe what information you have of the events surrounding you or your child being shaken/abused? Injuries, location, etc.?
2. What was your family's child care situation around the time that the shaking occurred? Were you or your child attending daycare, being taken care of by family members, etc.?
3. How did you find out that you or your child had been a victim of shaken baby syndrome/abusive head trauma? Please describe in as much depth as possible.
4. Would you describe how you felt when you were told about your own or your child's shaken baby syndrome/abusive head trauma diagnosis?
5. Do you know who your or your child's abuser is?
    a. If they do know: How has your relationship with that person changed since the abuse occurred?

CONSENT CHECK: Are you willing to continue talking about your experiences?

6. How has your relationship with your parents (if you were shaken) or your relationship with your child who was shaken changed, since the abuse occurred?
7. Do you feel as though having a child who was a victim of shaken baby syndrome/abusive head trauma or being a victim yourself has influenced your parenting style now, or later on if you have children in the future?
    a. If yes: How so? Please describe in as much depth as possible.
8. Did being a victim of shaken baby syndrome/abusive head trauma or having a child who was a victim of shaken baby syndrome/abusive head trauma affect how your parents treated you versus your siblings or how you treated your other children, if you have other siblings/children?
    a. If yes: How so?
9. Would you describe how you show affection to your child who was shaken or how you plan to show affection to any future children you may have?
10. Has the abuse that occurred caused any conflict (s) within your immediate or extended family?
    a. If yes: How so? Please describe what conflict has or continues to occur as a result, in as much depth as possible.
11. How do you decide on who gets to know about the abuse that you or your child endured (that doesn't already know about it)?
    a. Do some people get to know more in depth information about what happened than others?
    b. Would you please describe your thoughts/reasoning behind those decisions?

CONSENT CHECK: We have a few more questions. Are you willing to finish the interview?

12. Would you describe how being shaken yourself or having a child who was shaken has affected your closeness (or lack thereof) with your other family members?
13. As a survivor of shaken baby syndrome or as a parent of a child who was affected by it, do you believe that there are different expectations from people in society in regards to how you should look, act/behave, etc.—because of the abuse that happened to you or your child?
    a. If yes: How do you respond to those ideas/expectations?/If no: Why not? Explain your thoughts.
14. Do you plan on telling your child who was abused or any future children that you may have that they were shaken as a child or that you, yourself, were shaken as a child?

a. Would you describe your thoughts/reasoning behind that decision?

15. How has being a victim yourself or your child being a victim of shaken baby syndrome/abusive head trauma affected your general ability to trust people? Please describe in as much depth as possible.

16. Is there anything else you would like to add?

Book Review: "How to Survive a Pandemic" by John Hudson

Lyricc King

The UK Military's Chief Survival Instructor, John Hudson, has provided helpful advice on how to survive a pandemic, specifically COVID-19. The year 2020 has been a challenging year for most people, but with the help of this book, handling crisis communication can be more manageable. This book is short and concise and covers many important topics concerning COVID-19. Hudson begins with an explanation of the COVID-19 virus and how it survives. "Knowing our enemy" guides readers on courses of action to fight the virus. Other virus-related topics include hygiene and protecting others on how to cope with uncertainty. Hudson's covering of this topic is precisely how this brief yet impactful book can provide a meaningful contribution to the communication classroom.

Communication instructors of interpersonal communication, organizational communication, crisis communication, and intercultural communication will benefit from Hudson's discussion about reducing uncertainty during indefinite periods of isolation. Student's interested in mediated communication will benefit from the investigation of the effect of the flood of advertisements about washing hands and social distancing. Hudson also engages in an intriguing investigation about how the media could not protect people from the effects of social isolation. For example, staying home during the pandemic was one of the defenses for minimizing the spread of the virus. Hudson acknowledges the importance of quarantining but says that this subtle sacrifice also comes with deep sacrifices to humans as meaning makers and communicators.

Hudson challenges the popular notion of quarantine as akin to a prison sentence. He states that time could be a once-in-a-lifetime opportunity for uninterrupted time for contemplation. This free time can lead to the trying of something new, a source of identify in communication studies. Instead of wishing time would pass and things would go back to normal, Hudson says people can take advantage of their free time and do something innovative that explores self and the environment.

This book is similar to other texts about the impact of a pandemic on mental and physical health. For example, "Beyond the COVID-19 Pandemic: Envisioning a Better World by Transforming the Future of Healthcare" (Kapur and Chalil, 2000) and "COVID-19: Resources for Coping with the Pandemic and Beyond" (Mayhugh and Mayhugh, 2000) . Hudson's book is unique because of his experience as a survival instructor. The added bonus of his book is

that the text is short, written in a style that is accessible to a broad audience, and is free. Considering the novelty of this virus and this book, Hudson's contribution would be a valuable supplement to a variety of communication courses, especially those that also cover the topics of healthcare and mental health.

Free etext at https://www.johnhudsonsurvival.com/