Graduate Student Burnout and Cynicism:
Examining the Effects of Student Co-Rumination and Need for Cognition

by

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A thesis submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Master of Arts

Auburn, Alabama
May 2, 2020

Keywords: burnout, cynicism, co-rumination,
need for cognition, graduate students

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Abstract

Life for graduate students can be challenging, as they must find some way to balance their academic demands with other areas of their lives. Attempting to find such a balance only increases the stress that graduate students regularly face, oftentimes leading to burnout, and so they frequently rely on other graduate students for sources of social support. However, when the content of social support is focused on the discussion of problems and negative emotions (i.e., co-rumination), previous research has shown that the experience of burnout is exacerbated instead of diminished (Boren, 2013; 2014). To build on previous findings, specifically in the graduate school environment, this study examined co-rumination and its effect on the development of burnout and cynical attitudes in graduate students. Moreover, students' propensity to enjoy engaging in effortful thought (i.e., need for cognition), was included in this project as a potential moderator. Utilizing an online survey, 618 graduate students responded to measures assessing co-rumination, burnout, cynicism, and need for cognition. Findings suggest that co-rumination may lead to burnout for graduate students, but does not necessarily lead to the development of cynical attitudes. Study findings also suggest that need for cognition may mitigate the experience of burnout in graduate students, although further research in the area is needed.

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Introduction

Life for adult students, and for graduate students particularly, can be challenging. Such students face a wide range of stressors on a regular basis throughout the course of their academic tenure, including significant strains on time and finances, as well as demanding job requirements and the fear of failure (Boren, 2013). Moreover, graduate students must find some way to balance their academic demands with other areas of their lives, such as requirements regarding their families and friends, teaching duties if they hold a teaching assistantship, and work duties if they have a job outside of the university (Fowler, 2015; Hammer, Grigsby, & Woods, 1998; Lundberg, McIntire, & Creasman, 2008). Attempting to meet the demands of various roles further exacerbates the stress experienced by graduate students, as fulfilling the requirements of one role makes it more difficult to fulfill the requirements of others (Hammer et al., 1998; Hoffman & Cowan, 2008). Certainly, the demands facing graduate students are many and varied, but what does this mean for the graduate students experiencing such demands? One answer to that question concerns the concept of job burnout.

As a result of chronic exposure to stress at work, burnout manifests itself in three ways: feelings of emotional exhaustion, the development of cynical attitudes towards one's work and/or those one works with, and the belief that one is not performing to their potential regarding the work they produce (Maslach, Schaufeli, & Leiter, 2001). Miller, Stiff, and Ellis (1988) argue that employee burnout is among the most serious problems facing organizations. They discuss a range of negative outcomes related to burnout, including fatigue, depression, absenteeism, and a decrease in commitment to one's occupation. Similarly, Dyrbye et al. (2008) found that, among

the medical students they surveyed, 49.6% reported experiencing burnout, and of those, 11.2% reported experiencing instances of suicidal ideation. These experiences are not unique to medical students. Ahola et al. (2006) found few significant differences in the experiences of burnout among population groups in Finland measured by socio-demographic factors such as gender, age, level of education, occupation, and length of work experience. Furthermore, in an article published in *The Chronicle of Higher Education*, Cassuto (2013) indicates that current attrition rates for students seeking doctoral degrees hover around 50%, meaning that approximately half of the students that start their graduate degrees do not finish. Considering all of this together, it is reasonable to assert that burnout is a salient problem for graduate students with potentially tragic consequences. Specifically, the dimension of burnout involving the development of cynical attitudes toward one's work and/or those one works with seems particularly ripe for scholarly investigation, as scholars suggest that cynicism represents an essential aspect of felt experiences of burnout, and that cynical attitudes are also manifest in interpersonal interaction (Maslach, 2003; Maslach & Goldberg, 1998). Because my foremost goal in the present study is to explore the communicative development of burnout in graduate students, the cynicism dimension of burnout is a logical and necessary focus.

Social support has been mentioned as a potential resource for combatting experiences of burnout and of stress, more broadly (Boren, 2013; Heaphy & Dutton, 2008; Schaufeli & Bakker, 2004). Simply put, social support is believed to act as a buffer to stressful experiences (Cohen & Wills, 1985). However, this buffering effect is undermined when social support manifests itself in the mutual, excessive discussion of personal problems and negative emotions, which is otherwise known as *co-rumination* (Boren, 2013; Rose, 2002). In other words, when the content of social support is negative rather than positive, the experiences of stress and burnout are

heightened instead of diminished. It is likely that graduate students talk about problems that cause negative emotions with each other, considering that graduate students share close relationships with each other (Boren, 2013), and that graduate students often seek the input of other graduate students in attempts to make sense of the graduate school environment (e.g., Furlich, 2004; Myers, 1994). Therefore, this study focuses on the process of co-rumination, or the excessive discussion of problems and negative feelings, and its effect on feelings of burnout and the development of cynical attitudes in graduate students. Also, considering that, in graduate programs, applicants and students are evaluated on their thinking and reasoning ability, it seems likely that graduate students may demonstrate a high *need for cognition*, meaning they enjoy the process of engaging in effortful thought (Cacioppo & Petty, 1982*). Thus, need for cognition will be examined in this study as a potential moderating variable between co-rumination and the development of feelings of burnout and cynical attitudes, because if a student has a higher need for cognition, they are more likely to think about, and thus discuss, their problems more with peers, which in turn could exacerbate their experience of burnout.

This paper begins with a review of the extant literature on burnout, cynicism, graduate student socialization, social support, co-rumination, and need for cognition, which are discussed in the following section, respectively. Following the literature review, I present the hypotheses and questions guiding this research and discuss the methodology of this study, including the measures used, the data collection process and the data analysis process.

Literature Review

In order to frame the current discussion of graduate student burnout and cynicism, including the potential effects of students' co-rumination and need for cognition, it is first necessary to consider the different ways in which each of these concepts have been approached

as focuses of scholarly attention. Therefore, the first section of the present literature review will explore existing research on burnout and cynicism, and how these two concepts relate to the experiences of graduate students, more specifically. The sections that follow will discuss graduate student socialization, social support, co-rumination, and need for cognition, respectively. Then, following the literature review, I explicate this study's methodology.

Burnout

Before reviewing the existing literature on burnout and each of its underlying dimensions, my goals for this study need further clarification. Most importantly, the present study contributes to the burnout literature by examining how the syndrome is communicatively developed in the context of graduate students. The communicative element of the development of burnout certainly warrants scholarly attention, according to Miller et al. (1988), who argue that "research considering the role of communication in the control of burnout often neglects the fact that the genesis of burnout is communicative as well" (p. 250). Indeed, it stands to reason that if something such as burnout can be made better through communicative effort, it could also be made worse. Boren's (2013) study on graduate students illustrates this idea well, by further underscoring that burnout is developed through communication, and further highlighting the contemporary salience of communication to burnout. Therefore, I explore the role of a particular communicative act, co-rumination (Rose, 2002), in the development of burnout and cynical attitudes in graduate students.

Why the emphasis on cynicism? Much of the extant literature on burnout treats the emotional exhaustion dimension of the syndrome as the most consequential of the three dimensions, or at least deserving of the most attention (Maslach et al., 2001; see also, Boren, 2013); this has caused the other two dimensions to remain largely overlooked, and their

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significance mostly unconsidered (Brenninkmeyer & Van Yperen, 2003). To address this gap in the literature, and thus move toward a more complete understanding of the burnout concept, as a whole, Boren (2013) suggests that more research is needed on the other dimensions of burnout. Therefore, this study focuses on the cynicism dimension of burnout. However, while a focus on one particular dimension of burnout is useful in advancing burnout scholarship, the broader construct still should not be ignored (Brenninkmeyer & Van Yperen, 2003), as its dimensions are not necessarily mutually exclusive (Leiter & Maslach, 2009). Thus, it is now necessary to further review the literature on each of burnout's three underlying dimensions.

Emotional exhaustion. *Emotional exhaustion*, the first dimension of burnout, is the most obvious and frequently cited manifestation of burnout (Maslach et al., 2001). It refers to feelings of being depleted of cognitive and emotional resources, or feeling drained of energy; these feelings often stem from overwhelming work demands, conflict with others at work, and/or other sources of stress (Maslach, 2003; Maslach & Goldberg, 1998). Frequent emotional exhaustion and exposure to stress has been linked to higher rates of heart disease (Chandola, Brunner, & Marmot, 2006), depression, and suicidal ideation (Dyrbye et al., 2008). Of significance to this study, heightened levels of emotional exhaustion leads to the development of cynical attitudes in burned out individuals (Leiter & Maslach, 2009).

Personal (in)efficacy. Put simply, *personal inefficacy* refers to a sense that one is not reaching their potential regarding their work, leading them to feel less competent and productive (Maslach & Goldberg, 1998). Elias and Loomis (2002) found that academic self-efficacy is predictive of better overall academic performance, as measured by grade point average (GPA). This suggests that perceived *in*efficacy (as a result of burning out) is related to poorer academic

performance. Maslach and Goldberg (1998) also suggest that personal inefficacy, in some cases, can be linked to depression.

Cynicism. *Cynicism* dates back to the Cynic school of thought in ancient Greece (Dean Jr., Brandes, & Dharwadkar, 1998), and has been conceptualized in myriad forms in research literature since then. Most broadly, it can be defined as, "both a general and specific attitude, characterized by frustration and disillusionment as well as negative feelings toward and distrust of a person, group, ideology, social convention, or institution" (Andersson & Bateman, 1997, p. 450). While such a broad definition provides an adequate understanding of the concept for the purposes of the layperson, it is important for the present study to consider a more in-depth and applied conceptualization of cynicism—one that takes into account its relationship to burnout as well as its relationship to the academic context.

Literature on burnout occasionally refers to cynicism as *depersonalization* (e.g., Leiter & Maslach, 1988; Maslach & Goldberg, 1998; Taris, Le Blanc, Schaufeli, & Schreurs, 2005). Though the two terms are treated as interchangeable in much of the literature on burnout, I solely use the term *cynicism* in this paper to minimize any potential sources of confusion. Maslach (2003) defines the cynicism dimension, which represents "a basic hallmark of the burnout experience," as, "the negative, callous, or excessively detached response to other people and other aspects of the job" (p. 190). As a response to emotional exhaustion, scholars argue that developing cynical attitudes towards one's work is essentially a strategy for self-protection against stress (Maslach & Goldberg, 1998). Moreover, each of burnout's three dimensions represents a particular element of the burnout experience. Emotional exhaustion represents the basic stress element of burnout, personal inefficacy represents the self-evaluation element, and cynicism represents the interpersonal element, suggesting that cynicism manifests itself in

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interpersonal interaction (Maslach, 2003; Maslach & Goldberg, 1998). This idea is supported

elsewhere in the burnout literature, with Wisniewski and Gargiulo (1997) arguing that

developing cynical attitudes often results in a change in interpersonal interactions, which become

more impersonal and detached. The fact that cynicism is interpersonal in nature provides further

justification for my focus in the present study, as my foremost goal is to examine the

communicative development of burnout in graduate students.

Taris et al. (2005) note that a topic of interest for burnout scholars concerns the

relationships among burnout's three dimensions. In other words, does one dimension cause one

or both of the others? Indeed, burnout literature does suggest meaningful relationships among the

three dimensions. Studies have demonstrated that those who report high levels of exhaustion also

report high levels of cynicism toward their work (Leiter & Maslach, 1988; Bakker, Demerouti, &

Verbeke, 2004; Taris et al., 2005; Leiter & Maslach, 2009). For example, in their study on

burnout and organizational commitment, Leiter and Maslach (1988) found that employees who

reported higher levels of emotional exhaustion also reported higher levels of cynicism. Further,

scholars have also found that higher levels of cynicism are related to greater feelings of

inefficacy about one's work (Taris et al., 2005; Leiter & Maslach, 2009; Bang & Reio Jr., 2017).

For example, Taris et al. (2005) found, drawing from longitudinal data from a Dutch sample, that

higher levels of reported cynicism were associated with lower levels of personal accomplishment

(i.e., higher levels of personal inefficacy). In another study, Bang and Reio Jr. (2017) found a

direct negative effect of cynicism on task performance, suggesting that cynical attitudes hinder

one's ability to effectively accomplish job-related tasks. Other scholars have connected all three

of burnout's dimensions. For example, in their study on burnout and turnover in the nursing

profession, Leiter and Maslach (2009) found that emotional exhaustion predicted cynicism, and

that cynicism predicted personal inefficacy. Boren (2014) also suggests that all three dimensions are related, arguing that emotional exhaustion leads people to distance themselves from their work and from those they work with (i.e., cynicism), which diminishes their ability to complete their work effectively (i.e., personal inefficacy). Therefore, it is apparent that burnout's three dimensions are related, and that cynicism plays a crucial role. Maslach (2003) echoes this sentiment, arguing that cynicism represents an essential aspect in felt experiences of burnout.

Burnout in academia. Graduate students, as well as undergraduate students, are located within the larger organizational framework of particular academic institutions. Therefore, in examining data collected at such institutions, literature on burnout offers valuable insight into the experiences of undergraduate and graduate students alike. For instance, Eisenberg, Gollust, Golberstein, and Hefner's (2007) study, which draws from data collected in a random sample at a large public university, provides a glimpse into the mental health issues experienced by both undergraduate and graduate students. Of their sample, they found the following:

13.8% of undergraduates and 11.3% of graduate students screened positive for major or other depression, 4.2% of undergraduates and 3.8% of graduate students screened positive for current panic disorder or generalized anxiety disorder, and 2.5% of undergraduates and 1.6% of graduate students reported suicidal thoughts in the past 4 weeks. (Eisenberg et al., 2007, pp. 538-539)

Similarly, Dyrbye et al. (2008) found that, of the medical students surveyed in their study, 49.6% reported the experience of burnout, and 11.2% reported that they had some instance of suicidal ideation within the past year. Dyrbye et al. (2006) suggest that experiences of burnout may increase with more years of schooling. Based on the above, it seems reasonable to posit that burnout represents a salient problem in academic settings, and particularly within graduate

programs. Indeed, Fowler (2015) argues, "the particular forms of communication unique to academic settings may underlie burnout and subsequent depressive symptoms, which appear to predominate in the graduate school system" (p. 156). Cassuto (2013) also points to the culture internal to graduate programs as a potential explanation for the near-50% attrition rate for doctoral students. However, despite being recognized in the literature as a significant problem, and particularly so in graduate programs, there has remained a surprising dearth of research regarding burnout and the general population of graduate students (Fowler, 2015); rather, the majority of burnout studies on graduate students have limited their focus to specific kinds of programs, such as medical school (e.g., Dyrbye et al., 2006; Dyrbye et al., 2008). Thus, to address this research gap, the present study will examine the experiences of burnout across the general graduate student population at a large, southeastern university.

Stress, Social Support, and Graduate Student Socialization

Boren (2013) suggests that, when experiencing burnout or even stress, more broadly, graduate students must find some way to cope. But, how does one cope with a pervasive, multifaceted problem such as burnout? One coping strategy proposed across the literature on stress and burnout is *social support* (Boren, 2013; Cohen & Wills, 1985; Heaphy & Dutton, 2008; Schaufeli & Bakker, 2004). Simply put, social support, or "when individuals communicate with the goal of supporting each other" (Boren, 2014, p. 5), acts as a buffer for an individual's experience of stress (Cohen & Wills, 1985). Moreover, social support has been linked to a range of positive health outcomes for those experiencing significant stressors in the workplace. For example, Heaphy and Dutton (2008) argue that positive social interactions (i.e., social support) help to improve individuals' physiological responses to stressful situations by fortifying their cardiovascular, immune, and neuroendocrine systems. Additionally, Uchida and Yamasaki

(2008) found that engaging in social support also reduced individuals' feelings of depression. In the academic context, social support was found to have a positive impact on individual perceptions of self-efficacy about one's work (Lundberg et al., 2008).

Clearly, social support can be potentially beneficial for those experiencing stressors at work. It is likely that graduate students, who are regularly faced with a variety of stressors (Fowler, 2015; Hammer et al., 1998), also seek out sources of social support. As they are socialized into the graduate school environment and their particular program, graduate students seek to build relationships with people, including both faculty and peers, who can help them to make sense of their new, unfamiliar roles and environment (Furlich, 2004; Myers, 1994). Certainly, faculty members can be valuable resources for graduate students, and can fulfill more formal socialization roles such as that of a mentor (Lechuga, 2011), but graduate students tend to rely more on other graduate students as sources of more informal, conversational social support as they try to make sense of their graduate school experience (Furlich, 2004). Supporting this assertion, Myers (1994) found that graduate teaching assistants (GTAs) reported interactions with other GTAs as the most helpful and accessible form of social support in their socialization to graduate school. However, Boren (2014) notes a potential problem regarding social support in the workplace: "coworkers often communicate with each other with the inherent goal of social support, but instead co-construct negative messages about the organization and its members, or focus on other issues of particular salience" (p. 6). This leads to co-rumination, a significant focus for this study.

Co-Rumination

According to Rose (2002), in her foundational work on the concept, *co-rumination* can be defined as, "excessively discussing personal problems within a dyadic relationship," which is

characterized by, "frequently discussing problems, discussing the same problem repeatedly, mutual encouragement of discussing problems, speculating about problems, and focusing on negative feelings" (p. 1830). It is worth noting, here, the distinctions among co-rumination and similar concepts: rumination and verbal rumination. Whereas co-rumination takes place within a dyad, with individuals mutually discussing problems, thus making it inherently interactional and social (Boren, 2013), rumination solely refers to the act of negative dwelling, which is a more internal and individual process (Rose, 2002). Verbal rumination is similar to co-rumination in that it involves the discussion of problems and negative feelings, but it differs in its focus on one person disclosing problems to another (i.e., a one way disclosure), instead of a transactional, mutual discussion of problems by a dyad (Afifi, Afifi, Merrill, & Denes, 2013). Because of its interactional and social qualities, which are of greater importance to the communication literature, co-rumination is the focus of this study.

Researchers have examined co-rumination in a variety of contexts (Edwards & Aune, 2014; Boren & Veksler, 2018), and have identified significant implications associated with it, including both positive and negative effects. For example, Rose, Carlson, and Waller (2012) found that co-rumination is associated with greater feelings of closeness between co-ruminators, and Haggard, Robert, and Rose (2011) found that co-rumination between friends is associated with higher levels of satisfaction with the friendship. Boren (2014), on the other hand, shows that co-rumination increases feelings of burnout and stress in working adults. Additionally, Arroyo, Segrin, Harwood, and Bonito (2017), in their study on weight control practices, reported that co-rumination was associated positively with binging, purging, and exercising behaviors. Also, Whitton and Kuryluk (2012) suggest that co-rumination represents a particular threat for the development of depression. This mixed bag of positive and negative effects supports Rose's

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(2002) claim that, depending on the circumstance, co-rumination can be either an adaptive or maladaptive response to workplace problems.

Importantly, if workplace problems are left unaddressed or are not handled effectively, employees are more likely to experience symptoms of burnout such as emotional exhaustion and the development of cynical attitudes (Boren, 2013; Maslach & Goldberg, 1998); therefore, I argue that it is crucial to examine co-rumination's role in the development of feelings of burnout and cynicism. The concept of *emotional contagion*, which suggests that emotions can potentially spread throughout organizations (Hatfield, Cacioppo, & Rapson, 1993), should also be included in the present discussion of co-rumination. Certainly, from an organizational perspective, the spread of negative emotions throughout the organization as a result of co-rumination would be less than ideal.

Connecting this discussion of co-rumination with the present study, Boren (2013) notes that graduate students share close relationships with one another. This likely encourages more instances of co-rumination among them, especially if those close relationships coincide with symptoms of anxiety (Rose et al., 2012), and researchers have argued that graduate school can certainly take an emotional toll on students (Dyrbye et al., 2008; Fowler, 2015; Goodboy et al., 2015). Boren (2013) found that co-rumination exacerbated feelings of emotional exhaustion in graduate students, but scholars have yet to demonstrate if co-rumination among graduate students is linked with the development of cynical attitudes, and if so, how. To fill this gap, I argue that students' propensity for nuanced, effortful thinking should be considered as a potential moderating variable between co-rumination and cynicism. Therefore, the remainder of this literature review explores the need for cognition.

Need for Cognition

Considering the inherent intellectual rigors with which students in graduate programs are faced, it would seem reasonable, albeit speculative, to assume that those pursuing graduate degrees in any field would likely demonstrate a high need for cognition. First defined by Cohen, Stotland, and Wolfe (1955), *need for cognition* is "a need to structure relevant situations in meaningful, integrated ways," or in other words, "a need to understand and make reasonable the experiential world" (p. 291). Working from and adapting this initial definition, Cacioppo and Petty (1982) conceptualize the need for cognition as the extent to which individuals are more or less likely to engage in, and also to enjoy the process of, thinking. Put differently, those with a high need for cognition are more willing to expend time and effort in the investigation and evaluation of a nuanced problem or persuasive argument.

High-need for cognition individuals also are more likely to think about a wider range of possibilities and rely on more sources of information when attempting to make sense of a situation, which makes it necessary for them to seek out and acquire more information on whatever problem they are confronted with (Cacioppo & Petty, 1982; Fortier & Burkell, 2014; Nair & Ramnarayan, 2000). Alternatively, those with a low need for cognition are less likely to desire thought that requires such cognitive effort (Cacioppo & Petty, 1982; Cacioppo, Petty, Feinstein, & Jarvis, 1996). For example, individuals higher in need for cognition reported greater enjoyment when completing a complex number-circling task, as opposed to lower need for cognition individuals, who reportedly enjoyed a simpler number-circling task (Cacioppo & Petty, 1982). Interestingly, a message need only be *perceived* as more complex to motivate high-need for cognition individuals to allocate more cognitive resources to process that message (See,

Petty, & Evans, 2009). Furthermore, need for cognition does not vary by sex of the individual (Cacioppo & Petty, 1982), and varies only slightly by age (Bruinsma & Crutzen, 2018).

Researchers have also explored the relationship between need for cognition and a range of other variables. Dollinger's (2003) study on need for cognition and creativity demonstrates that need for cognition is a meaningful contributor to the richness of an individual's creative output. Sanders, Gass, Wiseman, and Bruschke (1992) suggest that those lower in need for cognition likely demonstrate higher levels of verbal aggression. Higher need for cognition levels are also related to higher levels of engagement and memory (Soubelet & Salthouse, 2017). Of significance to the present study, higher need for cognition is related to certain behaviors in both work and leisure settings, by "developing a deeper interest in the opinion of others, in having more joy of exchanging ideas with others or of deeply immersing oneself in a topic even if it is not belonging to their core interests" (Strobel, Fleischhauer, Luong, & Strobel, 2018, p. 112).

It is important to note that one's need for cognition represents a relatively stable trait in individuals, and is conceptualized as an intrinsic motivation to engage in effortful thought about persuasive problems, although this motivation can develop or change differentially for individuals over time (Bruinsma & Crutzen, 2018; Cacioppo et al., 1996). Individual differences in need for cognition are "derived from past experience, buttressed by accessible memories and behavioral histories, manifest in current experience, and influential in the acquisition or processing of information relevant to dilemmas or problems" (Cacioppo et al., 1996, p. 197). Specifically, need for cognition is considered an "intellectual investment trait," which represents a particular kind of personality trait (von Stumm & Ackerman, 2013). According to von Stumm and Ackerman (2013), such personality traits (e.g., need for cognition) are "thought to guide how, when, and where individuals apply and invest their intelligence" (p. 842). This suggests

that need for cognition is not necessarily indicative of intelligence; rather, it is more indicative of the extent to which an individual is likely to make use of their intelligence in a particular situation. Such a suggestion has been supported elsewhere in the literature. For example, in their study drawing from a sample of people with varying educational backgrounds, Fleischhauer et al. (2010) found modest relationships between need for cognition and intelligence, as measured by the I-S-T 2000 R intelligence test, which indicated very little conceptual overlap between the two constructs. Their results not only suggest that need for cognition should be considered an autonomous construct, but also further demonstrate the positive relationship between need for cognition and higher cognitive resource allocation (Fleischhauer et al., 2010).

Interestingly, despite the distinction between need for cognition and intelligence as autonomous concepts, a number of studies have found that need for cognition is predictive of higher levels of academic achievement. For example, Sadowski and Gulgoz (1992) found that higher need for cognition was related to better performance in undergraduate classes, and thus, they reason that students higher in need for cognition have "greater academic potential and demonstrate this in their actual achievement" (p. 498). Similarly, in another undergraduate sample, Strobel, Behnke, Gärtner, and Strobel (2019) found that need for cognition predicted better academic performance, as measured by grade point average (GPA), both for students higher in intelligence and students lower in intelligence, as measured by the I-S-T 2000 R intelligence test, which assesses "reasoning ability in the verbal, numeric, and figural domain" (p. 149). This suggests that need for cognition is more indicative of academic achievement than intelligence alone, and it also points to a potential "compensatory" effect regarding need for cognition, where high levels of need for cognition make up for the relative lack of cognitive ability in students with lower levels of intelligence, and where high levels of need for cognition

further enhance the academic potential of students with higher levels of intelligence (Strobel et al., 2019).

However, it is crucial to understand that higher levels of need for cognition do not always result in greater academic performance. For instance, in a sample of undergraduate students, Elias and Loomis (2002) found that need for cognition was a strong predictor of academic performance as measured by GPA, but only when students' beliefs of self-efficacy regarding their academic abilities were present. In other words, when high-need for cognition students believed that they were able to perform well academically, they performed well academically. In contrast, high-need for cognition students who did not believe in their own academic abilities did not perform as well (Elias & Loomis, 2002). This finding is intriguing, especially in that diminished self-efficacy is one of the core elements of the burnout syndrome, and it suggests that burnout's deleterious effects can negatively influence the academic achievement of students higher in the need for cognition. Also, considering that higher levels of need for cognition are generally related to higher levels of academic performance, it is reasonable to assume that higher levels of need for cognition are likely evident in much of the graduate student population, hence, my inclusion of need for cognition as a variable of interest in this study.

Research Questions and Hypotheses

For the present study, need for cognition is relevant to the development and maintenance of feelings of burnout and cynical attitudes in graduate students in that attitudes developed by those higher in need for cognition are less susceptible to change than those developed by those lower in need for cognition (Areni, Ferrell, & Wilcox, 2000; Haugtvedt & Petty, 1992). Thus, the level of need for cognition reported by graduate students may influence the development and maintenance of feelings of burnout and cynical attitudes in instances of co-rumination.

Furthermore, individuals higher in need for cognition tend to generate causal explanations for the behaviors they observe in others and, to enhance their memory of the behaviors observed, are also more likely to later try to explain the actions of others (Lassiter, Briggs, & Bowman, 1991). This, arguably, leads individuals higher in need for cognition to co-ruminate more, especially if the actions of others led to the problems about which co-ruminators are engaged in discussion. However, there is no existing research that supports such an assumption. In fact, there is very little research concerning need for cognition as a potential mediating or moderating variable between communication traits (Linvill, Mazer, & Boatwright, 2016).

To address this gap in the literature, and considering the research on need for cognition discussed above, need for cognition is included in this study as a potential moderating variable between co-rumination and graduate student burnout and cynicism. Also, it is significant to recall that individuals with a higher need for cognition tend to make use of information-seeking activities, or so-called "investment behaviors" (von Stumm & Ackerman, 2013), when trying to make sense of a particular situation (Cacioppo et al., 1996; Fortier & Burkell, 2014). Thus, this study's examination of both need for cognition and co-rumination in graduate students may reveal some insights regarding co-rumination as a potential investment behavior, although this is not the primary purpose of the study. Therefore, and based on the literature discussed above, hypotheses and questions guiding this research project are as follows:

H1:   There is a positive relationship between graduate student co-rumination and feelings of burnout.

H2:   There is a positive relationship between graduate student co-rumination and cynical attitudes.

RQ1: Is there a relationship between graduate student need for cognition and co-rumination?

RQ2: Does graduate student need for cognition moderate the effect of co-rumination on overall graduate student burnout?

RQ3: Does graduate student need for cognition moderate the effect of co-rumination on graduate student cynicism?

Methodology

Procedure

The study employed an online self-report survey, administered through Qualtrics online survey software, consisting of basic demographic questions and scales designed to measure levels of co-rumination, burnout, cynicism, and need for cognition in graduate students. Following Boren (2013), who also administered a self-report survey for similar research purposes, participants for this study were selected on a volunteer basis. Specifically, invitations for participation were sent via e-mail from the dean of the graduate school at a large, southeastern university to a distribution list of the university's graduate students. Graduate programs included in the sampling frame for this study were master's and doctoral programs, as well as programs offering graduate certificates. Participants were first asked to review a brief informed consent form (see Appendix B) before being asked to complete the actual questionnaire. The anonymous, 59-item questionnaire began with demographic items such as age, sex, ethnicity, and type of graduate program, and the remainder of the questionnaire consists of 43 items from three scales (see Appendix A). Following completion of the survey, participants were thanked for their responses, and given the option of entering into a drawing for a chance to receive one of four $25 Amazon gift cards. With the university's graduate student enrollment at 5,866, and a total of 618 students responding, this survey yielded a response rate of approximately 10.5%.

Participants

As seen in Table 1, the majority of respondents were female ($N = 377$, 61%), while males made up 38.2% of the sample ($N = 236$), with one respondent selecting the "intersex" option for biological sex and four respondents declining to indicate their biological sex. Participant age ranged from 18 to 76 years old ($M = 29.2$, $SD = 8.15$ years). The median age for this sample was 27, with a mode of 23. Regarding the ethnic composition of the sample, 42 respondents (6.8%) were African-American, 18 (2.9%) were Asian-American, 430 (69.6%) were Caucasian, 36 (5.8%) were Latino/a, and 76 (12.3%) selected the "other" response option. Sixteen respondents (2.6%) declined to answer.

The majority of respondents (47.9%) were seeking a master's degree ($n = 306$), followed by a doctoral degree ($n = 297$; 47.9%), and a graduate certificate ($n = 8$; 1.3%). Most respondents were full-time graduate students, enrolled in 12 or more hours of courses (n = 385; 62.2%). The remaining students indicated they were part-time (i.e., enrolled in fewer than 12 hours of courses; $n = 234$; 37.8%). Assistantship status varied among participants, with 176 (28.4%) holding a graduate teaching assistantship (i.e., GTA), 82 (13.2%) holding a graduate assistantship (i.e., GA), 165 (26.7%) holding a research assistantship (i.e., RA), and 196 (31.7%) reporting that they hold no assistantship at all. Notably, approximately 41% of respondents reported that they held a job outside of the university in addition to their school-related responsibilities ($n = 233$). Participants were enrolled in a range of graduate programs, with the majority of students representing education and engineering programs (See Table 1 for a full listing).

Table 1 – Participant Demographic Characteristics

Demographic Items	N	M (SD)
Age	615	29.20 (8.15)
	n	**%**
Biological Sex		
Male	236	38.2
Female	377	61
Intersex	1	.2
Prefer not to answer	4	.6
Ethnicity		
African-American	42	6.8
Asian-American	18	2.9
Caucasian	430	69.6
Latino/a	36	5.8
Other	76	12.3
Prefer not to answer	16	2.6
College/School		
Nursing	5	.8
Forestry and Wildlife Sciences	21	3.4
Engineering	106	17.1
Business	53	8.6
Pharmacy	7	1.1
Veterinary Medicine	17	2.7
Sciences and Mathematics	64	10.3
Liberal Arts	108	17.4
Human Sciences	38	6.1
Education	124	20
Architecture, Design and Construction	9	1.5
Agriculture	56	9.0
Interdisciplinary	1	.2
Other	10	1.6
Full-time/Part-time Student		
Full-time	385	62.2

Part-time	234	37.8
Degree		
Ph.D.	297	47.9
Master's Degree (e.g., MA/MS/MBA/etc.)	306	49.4
Graduate Certificate	8	1.3
Other	9	1.5
Assistantship Status		
Graduate Teaching Assistantship (GTA)	176	28.4
Graduate Assistantship (GA)	82	13.2
Research Assistantship (RA)	165	26.7
No Assistantship	196	31.7
Have Outside Job		
Yes	233	41.4
No	330	58.6

Variables and Measures

Co-rumination. To evaluate co-rumination, I used a 9-item measure developed by

Haggard, Robert, and Rose (2011), who revised Rose's (2002) original 27-item co-rumination

measure (see Appendix A). Because the original measure was used to evaluate co-rumination in

the context of friendships, the revised 9-item measure, which was edited to focus specifically on

problems at work, will be used. Participants were prompted to indicate how true each item is for

them, and used a 5-point, Likert-style scale for their responses (e.g., 1 = not at all true; 5 = really

true). Scores are derived from averaging together the nine items of the measure, with higher

mean scores representing greater levels of co-rumination. This measure was designed, tested, and

validated as a measure of co-rumination among coworkers in the study conducted by Haggard et

al. (2011), and was also found useful in Boren's (2014) study on co-rumination among working

adults. Boren (2014) reports that reliability for this measure, determined using Cronbach's alpha

coefficient, was acceptable (α = .89). For the sample in the present study, Cronbach's alpha was

also found acceptable (α = .87). Reliability estimates and descriptive statistics for this and other dependent and independent variables are presented in Table 2.

     Burnout and Cynicism. To measure feelings of burnout and the presence of cynical attitudes for this study, I used the 16-item Maslach Burnout Inventory—General Survey (MBI-GS) introduced by Schaufeli, Leiter, Maslach, and Jackson (1996) (see Appendix A). Each item is presented in the form of a statement about personal attitudes, expectations, and/or feelings, and respondents rate how often each statement applies to them on a scale from 0 to 6, with 0 = never and 6 = daily. As a whole, the MBI-GS is made up of three subscales, which measure each of burnout's three core dimensions: emotional exhaustion, cynicism, and personal inefficacy. For the emotional exhaustion and cynicism subscales, higher mean scores indicate higher levels of burnout, and for the personal efficacy scale, lower mean scores indicate higher levels of burnout (Schutte et al., 2000). It is important, here, to note that, when quantifying the presence of burnout, each subscale can be evaluated apart from the others (Boren, 2013; Maslach et al., 2001). The 16-item MBI-GS was adapted from the original 25-item measure introduced by Maslach and Jackson (1981), which focused on human service-oriented professions, to measure levels of burnout across occupations, and its ability to do so has been validated in the burnout literature (Bakker, Demerouti, & Schaufeli, 2002; Schutte et al., 2000). Regarding reliability in previous studies, Cronbach's alpha coefficient for each of the subscales was calculated at 0.89 (exhaustion), 0.78 (cynicism), and 0.76 (efficacy) for the 16-item scale (Richardsen & Martinussen, 2005). The reliability estimates for this sample (as calculated by Cronbach's alpha coefficient) were at or better than those previously published: Exhaustion (α = 0.91), Cynicism (α = 0.84), and Efficacy (α = 0.83). For the MBI-GS as a whole, reliability was well within the acceptable range (α = .90).

Need for cognition. To evaluate need for cognition, I used the short form of the need for cognition measure developed by Cacioppo, Petty, and Kao (1984) (see Appendix A). The short form of the measure reduces the original measure from 34 items to 18 items, but, according to Cacioppo et al. (1996), who also made use of the short form of the measure, it is highly correlated with the original measure ($r = .95$, $p < .001$). Moreover, the short form of the need for cognition measure developed by Cacioppo et al. (1984) has high levels of internal consistency, as measured by Cronbach's Alpha coefficient ($\alpha = .90$). See et al. (2009) further established the short form's reliability ($\alpha = .81$), as did Sadowski and Gulgoz (1992) ($\alpha = .91$). Originally, this measure's items were presented with a 9-point, Likert-style scale, with response options ranging from -4 to 4, and with the sum of a participant's responses representing their level of need for cognition (scores ranged from -72, meaning low need for cognition, to 72, meaning high need for cognition) (Cacioppo et al., 1984). Other studies have reliably employed a 5-point, Likert-style scale for this measure (e.g., See et al., 2009). For the present sample and study, respondents were asked to use a 7-point, Likert-style scale to indicate their level of agreement with each item (1 = strongly disagree, 7 = strongly agree). For this study, need for cognition scores are presented as a mean of the responses to the 7-point scale, ranging from 1 to 7, with 1 representing individuals with a lower need for cognition and 7 representing individuals with a higher need for cognition. Reliability, calculated using Cronbach's alpha coefficient, was found acceptable for the present sample ($\alpha = .88$).

Table 2 – Scale and Subscale Reliability Estimates and Descriptive Statistics

Variable	*N*	*Min*	*Max*	*M*	*SD*	α
1. Need for Cognition	525	2.33	7	4.88	.85	.88
2. Co-Rumination	552	1	5	2.48	.81	.87
3. Burnout Composite	534	1.06	6.31	3.72	1.11	.90
4. Burnout Exhaustion	547	1	7	4.50	1.54	.91
5. Burnout Cynicism	543	1	7	3.66	1.54	.84
6. Burnout Efficacy	537	1	7	4.88	1.10	.83

Results

Data Analysis

The independent variable in this analysis is co-rumination. Dependent variables include overall burnout as well as the cynicism dimension of burnout. A potential mediating or moderating variable is student need for cognition. All analyses were run with SPSS Statistics software, version 21.0.

To test hypotheses 1 and 2, as well as the first research question, analysis began with a review of bivariate correlations between graduate student co-rumination and the variables burnout, cynicism, and need for cognition. For the second and third research questions, which explore need for cognition's influence on the development of burnout when co-rumination is present, as well as its potential effect on the development of cynical attitudes in graduate students when co-rumination is present, two separate multiple regression analyses were run. Multiple regression can be used to quantify the strength of relationships across the four interval-level

variables, and reduces error that may be compounded when multiple correlations are conducted. Table 3 displays the Pearson Product Moment Correlation Coefficients among variables of interest, and also includes their means and standard deviations. Tables 4 and 5 summarize the two regression analyses, respectively.

Hypothesis 1

The first hypothesis predicted that there would be a positive relationship between graduate student co-rumination and the presence of burnout in graduate students. For this hypothesis, specifically, the mean of all three burnout subscales (i.e., Burnout Composite) was used to represent overall graduate student burnout. To test the hypothesis, a bivariate correlation test was run with co-rumination and burnout as the variables of interest. Table 3 presents the correlations matrix between co-rumination and both the composite as well as subscales of the Burnout measure. As Table 3 indicates, the correlation between co-rumination and the composite measure of burnout ($r = .076$, $p = .084$) was not significant. On the whole, the first hypothesis was not supported.

Hypothesis 2

The second hypothesis anticipated a positive relationship between co-rumination and graduate student cynicism. To test this relationship, a bivariate correlation test was conducted using the mean score of burnout's cynicism subscale and the mean co-rumination score. The hypothesized relationship between the two variables was not supported ($r = .076$, $p = .079$; see Table 3), and thus, the second hypothesis was also rejected.

Research Question 1

The first research question explored whether there was a relationship between graduate student co-rumination and need for cognition. To address this question, a bivariate correlation

was run between need for cognition and co-rumination scores. As seen in Table 3, there was a negative, nonsignificant, relationship between need for cognition and co-rumination ($r = -.025$, $p = .576$). These findings do not suggest a relationship between students' need for cognition and co-rumination.

Table 3 – Correlation matrix of variables of interest with means and standard deviations.

			Variable						
Variable	M	SD	1	2	3	4	5	6	7
1. Need for Cognition	4.88	.85	1	-.025	-.335**	-.222**	-.265**	.329**	.125**
2. Co-Rumination	2.48	.81	-.025	1	.076	.118**	.076	.021	-.151**
3. Burnout Composite	3.72	1.11	-.335**	.076	1	.810**	.876**	-.731*	-.132**
4. Burnout Exhaustion	4.50	1.54	-.222**	.118**	.810**	1	.594**	-.324**	-.145**
5. Burnout Cynicism	3.66	1.54	-.265**	.076	.876**	.594**	1	-.507**	-.045
6. Burnout Efficacy	4.88	1.10	.329**	.021	-.731**	-.324**	-.507**	1	.105*
7. Age	29.20	8.15	.125**	-.151**	-.132**	-.145**	-.045	.105*	1

$* p < .05$, $** p < .01$, $N = 618$.

Research Question 2

The second research question addressed whether need for cognition moderated the relationship between co-rumination and overall feelings of burnout. For this question, a hierarchical multiple regression analysis was run, with the dependent variable being the composite burnout score. Using the "Enter" method in SPSS, co-rumination was entered as a predictor variable in the first model, and need for cognition was added as a second predictor variable in the second model. Table 4 displays a summary of the regression analysis. The first model, which only included co-rumination as a potential predictor of burnout, found that co-

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rumination alone does not account for a significant amount of the variance in burnout scores, $F(1, 501) = 2.05$, $p = .153$, $R^2 = .004$, $R^2_{adjusted} = .002$. Those findings suggest that, by itself, co-rumination cannot be considered a significant predictor of burnout, at least in this sample ($\beta = .064$, $t = 1.43$, $p = .153$).

However, the second model, which included both co-rumination and need for cognition as potential predictors of graduate student burnout, did account for a significant amount of the variance in overall burnout scores, $F(2, 500) = 31.59$, $p < .001$, $R^2 = .112$, $R^2_{adjusted} = .109$. In the second model, need for cognition was the only variable of interest with a significant relationship to burnout, which suggests that need for cognition is a significant predictor of overall graduate student burnout scores ($\beta = -.329$, $t = -7.81$, $p < .001$)

Table 4 – Hierarchical Multiple Regression Analysis of Variables Predicting Burnout

	Model 1			Model 2		
Predictor Variables	*B*	*SE B*	β	*B*	*SE B*	β
Co-Rumination	.088	.062	.064	.070	.058	.051
Need for Cognition				-.429	.055	-.329*
R^2		.004			.112	
Adjusted R^2		.002			.109	

*$p < .001$, $N = 618$; The second model was significant, $F(2, 500) = 31.59$, $p < .001$.

Research Question 3

The second research question asked whether need for cognition would moderate the relationship between co-rumination and only the cynical dimension of burnout. To address this question, a hierarchical multiple regression test was run with the mean scores on the cynicism subscale of burnout being the dependent variable. Using the "Enter" method in SPSS, co-

rumination was entered as a predictor variable in the first model, and need for cognition was added as a second predictor variable in the second model. Table 5 displays a summary of the regression analysis.

The first model, which only included co-rumination as a potential predictor of graduate student cynicism, found that co-rumination alone does not account for a significant amount of the variance in cynicism scores, $F(1, 510) = 2.59$, $p = .108$, $R^2 = .005$, $R^2_{adjusted} = .003$. These findings suggest that, for this sample, co-rumination alone cannot be considered a significant predictor of cynicism in graduate students ($\beta = .071$, $t = 1.61$, $p = .108$).

However, the second model, which included both co-rumination and need for cognition as potential predictors of graduate student cynicism, accounted for a significant amount of the variance in cynicism scores, $F(2, 509) = 20.06$, $p < .001$, $R^2 = .073$, $R^2_{adjusted} = .069$. In the second model, need for cognition was the only variable of interest with a significant relationship to cynicism, which suggests that need for cognition is a significant predictor of graduate student cynicism ($\beta = -.261$, $t = -6.11$, $p < .001$).

Table 5 – Hierarchical Multiple Regression Analysis of Variables Predicting Cynicism

	Model 1			Model 2		
Predictor Variables	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Co-Rumination	.135	.084	.071	.121	.081	.064
Need for Cognition				-.473	.077	-.261*
R^2		.005			.073	
Adjusted R^2		.003			.069	

*$p < .001$, $N = 618$; The second model was significant, $F(2, 509) = 20.06$, $p < .001$.

Other Significant Results

Although not addressed by the hypotheses and research questions of this study, there were several significant findings worth noting here. These findings were discovered through bivariate correlation tests (see Table 3), and will be discussed in more detail in the discussion section of this paper.

First, a significant, negative relationship was found between need for cognition and three of the burnout-related measures used in this study, including the composite burnout measure ($r = -.335$, $p < .01$), the exhaustion subscale ($r = -.222$, $p < .01$), and the cynicism subscale ($r = -.265$, $p < .01$). Need for cognition also had a significant, positive relationship between the efficacy subscale of burnout ($r = .329$, $p < .01$) and graduate student age ($r = .125$, $p < .01$).

Second, co-rumination shared a couple of significant relationships in this sample. Co-rumination was positively related to the exhaustion subscale of burnout ($r = .118$, $p < .01$), and was negatively related to age ($r = -.151$, $p < .01$).

Finally, graduate student age had a significant, negative relationship between both the composite burnout measure ($r = -.132$, $p < .01$) and the exhaustion subscale ($r = -.145$, $p < .01$). Age was also positively related to the efficacy subscale of burnout ($r = .105$, $p < .05$).

<center>**Discussion**</center>

The primary goal of this study was to explore the communicative development of burnout and cynicism across the graduate student population at a large, southeastern university. Specifically, I examined the relationships between co-rumination—a type of social support that involves the excessive or frequent discussion of problems and negative emotions (Rose, 2002)—and both burnout and cynicism in the graduate school environment. Previous research (e.g., Boren, 2013) has demonstrated that the act of co-rumination between graduate students

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suppresses the expected benefits of social support on the emotional exhaustion dimension of burnout, thereby exacerbating burnout instead of mitigating it. Thus, this study set out to expand on those findings, by exploring whether co-rumination among graduate students had a similar impact on the cynicism dimension of burnout, and also on the burnout construct as a whole, as it was hypothesized that co-rumination would have a positive relationship with burnout in both cases. Need for cognition (NFC) was included in this study as a potential moderating variable between co-rumination and burnout in order to explore whether NFC was influential in the development of graduate student burnout and/or cynicism when graduate students engaged in co-rumination.

On the whole, the hypothesized relationships between co-rumination and burnout, and also between co-rumination and cynicism, were not supported. However, the inclusion of graduate student NFC in this study yielded some interesting insights, which I discuss later in this section.

Hypotheses

Hypothesis 1 predicted that there would be a positive relationship between co-rumination and burnout (as measured by the burnout construct as a whole) in graduate students. Results of a bivariate correlation test (see Table 3), however, indicate no significant relationship between the two variables, which suggests that the act of co-rumination among graduate students does not exacerbate their experience of overall burnout in any meaningful way, at least in this sample.

Similarly, Hypothesis 2 predicted a positive relationship between co-rumination and graduate student cynicism (as measured by the cynicism subscale of the burnout construct). Again, a bivariate correlation test revealed no significant relationship between the two (see Table 3). Thus, this study found that co-rumination serves to exacerbate neither graduate students'

overall levels of burnout, nor their levels of cynicism more specifically. These findings are both unexpected and intriguing, considering Boren's (2013) findings that co-rumination heightened graduate student burnout (measured by the emotional exhaustion subscale of the burnout construct), as well as his (2014) findings that co-rumination exacerbated burnout (measured by the construct as a whole) in working adults.

Interestingly, however, the bivariate analysis did reveal a small but significant, positive relationship between co-rumination and burnout's emotional exhaustion subscale, which supports the findings of Boren's (2013) study. In fact, the emotional exhaustion subscale of burnout was the only burnout-related measure to show a significant relationship with co-rumination in the present graduate student sample (see Table 3). Notably, this suggests two things. First, in the graduate student context, co-rumination does heighten the experience of emotional exhaustion for graduate students to some extent, which lends credence to the idea that burnout can be, at least in part, communicatively developed, as argued by Miller et al. (1988). Such a finding also contributes to the literature on social support and co-rumination by demonstrating that the *content* of social support is, indeed, as essential to consider as the act itself, as Boren (2013; 2014) has argued.

Second, the positive relationship between co-rumination and emotional exhaustion provides partial support for the claim that emotional exhaustion is the first-experienced aspect of the burnout syndrome – a claim found throughout the burnout literature (e.g., Maslach, 2003; Maslach & Goldberg, 1998). Indeed, previous researchers have argued that individuals develop cynical attitudes towards their work and those they work with as a *response* to the experience of emotional exhaustion and as a strategy for self-protection against stress (Maslach & Goldberg, 1998). This study also found a significant positive relationship between emotional exhaustion

and cynicism, which lends further support to the idea that cynicism is the burnout syndrome's second step. Thus, cynicism can be considered a reaction to the experience of burnout as much as it can be considered a symptom of the syndrome. If this is the case, in retrospect, it makes sense that no significant relationship was found between co-rumination and cynicism, as emotional exhaustion would be a critical mediator. It is also imperative to consider the role of stress in this process. Recall that the emotional exhaustion dimension of burnout represents the basic stress element of the syndrome, meaning it is related to work overload and other sources of stress (Maslach, 2003; Maslach & Goldberg, 1998). Further, Boren (2014) found that co-rumination was positively related to stress. Therefore, it is perhaps the case that the experience of overwhelming stress leads to emotional exhaustion, which is only further exacerbated by co-rumination, and that cynical attitudes are developed as a response to that heightened emotional exhaustion, rather than as a direct response to any co-ruminative behavior.

It is worth noting again that co-rumination is associated with greater feelings of closeness between those engaged in co-rumination (Rose et al., 2012). This is worthy of consideration here because, when discussing burnout, cynicism is also frequently referred to as "depersonalization" (e.g., Leiter & Maslach, 1988; Maslach & Goldberg, 1998; Taris et al., 2005). It stands to reason that, if co-rumination leads co-ruminators to feel closer to one another, then co-ruminators would not *de-personalize* as a result of that co-rumination, but rather because of something else (e.g., stress/emotional exhaustion). Thus, the cynical attitudes of co-ruminators are manifest *in* interpersonal interaction, rather than *through* interpersonal interaction, which is a meaningful distinction to make.

Research Questions

The first research question explored whether graduate student co-rumination and NFC shared any relationship with each other. Results of a bivariate correlation test (see Table 3) indicate no significant relationship between co-rumination and NFC. This finding is unexpected for a couple of reasons. First, if NFC is truly "a need to understand and make reasonable the experiential world" (Cohen et al., 1955, p. 291), then it stands to reason that those graduate students higher in NFC would likely seek out more discussion with their peers when confronted with problems, considering graduate students often seek the feedback of other graduate students as they make sense of the graduate school environment (Furlich, 2004; Myers, 1994). However, that did not appear to be the case in this sample. Second, previous research posits that individuals higher in NFC are more inclined to consider a wider range of possibilities and rely on more sources of information when making sense of a problem, which makes it necessary to seek and acquire more information on that problem (Cacioppo & Petty, 1982; Fortier & Burkell, 2014; Nair & Ramnarayan, 2000). This too would seem to lend itself to more frequent discussion of problems among graduate students, but this too, was not the case in this sample. Thus, the results of this study suggest that NFC is not necessarily indicative of more *discussion*, but indicative simply of more *thought*. Such a conclusion may appear unremarkable or even banal, but it contributes to a more detailed understanding of the NFC concept, in terms of cognitive processes and behavioral manifestations, which is a worthwhile goal in itself.

The second research question addressed whether graduate student NFC moderated the effect of co-rumination on overall graduate student burnout. As the results of a hierarchical multiple regression analysis show (see Table 4), co-rumination alone cannot be considered a significant predictor of burnout in this sample, as co-rumination, by itself, did not account for a

significant amount of the variance in overall burnout scores. However, NFC did account for a significant amount of the variance in overall burnout scores, and was the only variable of interest with a significant relationship to burnout in the second model of the regression analysis. This suggests that NFC is a significant predictor of overall graduate student burnout scores, with higher levels of NFC predicting lower overall burnout scores in this sample. A bivariate correlation test (see Table 3) confirms a negative relationship between NFC and overall burnout, so it appears that those higher in NFC experience less burnout, and those lower in NFC experience more burnout.

There are two potential explanations for such a finding with the second research question. The first explanation involves the concept of job engagement, which is often considered the opposite of burnout, and is characterized by energy, involvement, and efficacy (Maslach et al., 2001). As the conceptual opposite of burnout, scholars argue that engagement can alleviate or combat burnout, for engaged employees cannot be burned out, as the reasoning goes (Boren, 2014; Schaufeli & Bakker, 2004). Previous research has demonstrated that there is a positive relationship between individuals' NFC and their levels of engagement with their work (e.g., Soubelet & Salthouse, 2017; von Stumm & Ackerman, 2013). If the same relationship between NFC and engagement were found in the present sample, then it would make sense that NFC and burnout are negatively related here. However, because engagement was not measured in the present study, such a claim cannot be made. It certainly bears addressing in future research.

Another explanation for the second research question's findings points to the claim made in previous research (e.g., Areni et al., 2000; Haugtvedt & Petty, 1992) that the attitudes of people higher in NFC are less susceptible to change than those of individuals lower in the NFC. Haugtvedt and Petty (1992) found that the attitudes of high NFC individuals were not influenced

by messages that contrasted their opinions, relative to their low NFC counterparts, who were more readily swayed by conflicting information. The authors suggest that this was because low NFC individuals relied more on the perceived expertise of the source of the messages and on the overall amount of information found within the messages, whereas high NFC individuals based the confidence in their opinions on how many substantive arguments they could recall that supported their opinions (Haugtvedt & Petty, 1992). In a longitudinal study, Areni et al. (2000) found that the opinions of high NFC individuals, when confronted with reported group opinions, were more resistant to change and persisted over time, whereas the opinions of low NFC individuals were more easily influenced by reported group opinions and were more susceptible to change over time. Taken together, the results of previous research suggest that individuals lower in NFC are influenced by the opinions of others more frequently and easily than their high NFC counterparts. Applied to the findings of the present study, such a claim may help explain why individuals lower in NFC burn out more than those higher in NFC. If low-need individuals learn that their peers are burning out, which happens regularly in the graduate school environment (Boren, 2013; Dyrbye et al., 2008; Fowler, 2015) they are, arguably, more likely to feel burned out themselves.

The third research question asked whether graduate student NFC moderated the effect of co-rumination on graduate student cynicism. Hierarchical multiple regression analysis (see Table 5) shows that co-rumination alone did not account for a significant amount of the variance in cynicism scores in this sample, and thus, is not a significant predictor of graduate student cynicism. NFC, however, accounted for a significant amount of the variance in cynicism scores. Moreover, NFC was the only variable in the second model of the regression analysis to show a significant relationship with cynicism. Therefore, graduate student NFC is a significant predictor

of graduate student cynicism in this sample, with higher levels of NFC predicting lower cynicism scores. A bivariate correlation test (see Table 3) confirms the negative relationship between NFC and cynicism, so it appears to be the case that graduate students higher in the NFC not only burn out less, but also are less cynical.

Considering the findings for the second research question, the findings for the third research question are less surprising. If higher levels of NFC are associated with lower levels of overall burnout, as was the case in Research Question 2, then it makes sense that higher levels of NFC are also associated with lower levels of cynicism in graduate students, because cynicism is such an integral aspect of the experience of burnout (Maslach, 2003), and because cynicism is also such a common response to burnout (Maslach & Goldberg, 1998).

Still, this study's findings are intriguing, as they suggest there is something about NFC that protects individuals from experiencing burnout, at least to some extent. There are, I believe, two possible explanations for such an effect. First, as the bivariate correlation tests illustrate (see Table 3), NFC in this sample was significantly and negatively related to every burnout-related measure (i.e., the composite burnout measure, the emotional exhaustion subscale, and the cynicism subscale) except for the personal efficacy subscale, to which NFC was found positively related, and significantly so. The positive relationship between NFC and personal efficacy here suggests that individuals higher in NFC tend to believe more in their own abilities to perform competently whatever task they need to perform in the graduate school environment. It is perhaps the case that such a belief in one's own abilities mitigates students' perceptions of stress to the extent that perceptions of burnout become less obvious or inevitable. In this sample, NFC and all other burnout-related measures shared a significant. This negative relationship further supports this as a potential explanation, as the mitigation of emotional exhaustion and cynicism

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as a result of higher NFC levels should also mitigate feelings of personal *in*efficacy. Notably,

extant research suggests that the three dimensions of burnout vary and interact with each other

differentially for individuals (Maslach, 2003), leading to different levels of risk for developing

burnout. In other words, one's situation may be characterized by higher levels of emotional

exhaustion and cynicism, which would likely cause one to feel a greater sense of personal

inefficacy about their work. Such a situation would, arguably, be more conducive to the

development of burnout. In another situation, according to this line of reasoning, an individual's

experience may be characterized by high levels of personal efficacy, perhaps as a result of high

levels of NFC, and that sense of personal efficacy may serve to reduce perceptions of exhaustion

and cynicism. However, the dearth of research examining NFC in relation to burnout makes it

difficult to support such a claim. Still, it is vital to consider the complex and individual nature of

the burnout syndrome, and this study further underscores that importance.

   A second explanation for the negative relationship between NFC and burnout involves

age. Seen in Table 3, NFC had a significant, positive relationship with age in this sample,

suggesting that older graduate students showed higher levels of NFC. Moreover, age was

negatively and significantly related to co-rumination, the emotional exhaustion subscale of

burnout, and the burnout construct as a whole. Age also displayed a significant, positive

relationship with the efficacy subscale of burnout in this sample. Of course, it is relatively easy

to speculate about what these results mean. Indeed, the relationships among these variables

suggest (1) that as individuals get older, they engage in less co-rumination; (2) that older

individuals experience less burnout; and (3) that older individuals feel a greater sense of personal

efficacy towards their school and/or work. It is reasonable to assume that older graduate students

have more work experience than younger graduate students, and thus are more equipped to

handle the stress that younger students may find overwhelming. Or, perhaps they have simply become more accustomed to stress over the years, and its effects are less noticeable, which would arguably lead older graduate students to engage in less co-rumination.

Another explanation involves the relationship status or broader social network of graduate students, which likely looks different for individuals of different ages. Extant research on social support shows that older adults report a greater number of people in their social networks than younger adults, despite rating their networks, in terms of the social support they reportedly received, much lower than their younger counterparts (Granello, 2001). Other research suggests that having a romantic partner is a significant predictor of individuals' wellbeing (Walen & Lachman, 2000). Thus, older graduate students may seek less social support from their fellow graduate students, because they have more extensive social networks, have a romantic partner to rely on, or because they perceive less need for social support in general, any or all of which may lead them to reduced co-rumination.

Previous research has not found any significant relationships between co-rumination, specifically, and age (e.g., Haggard et al., 2011), so the present study contributes to the literature on co-rumination by introducing the idea that older individuals may co-ruminate less than younger individuals, as was the case in this sample of graduate students. Moreover, the findings of this study support those of Brewer and Shapard (2004), who also found a negative relationship between the emotional exhaustion dimension of burnout and age. In other words, the present study further supports the idea that older individuals burn out less. Future research is needed to better understand the role of NFC in all of this, as there has been little-to-no research done on the relationships between NFC and the dimensions of burnout.

Additional Findings

Earlier, before introducing the hypotheses and research questions guiding this project, I briefly mentioned the concept of *investment behaviors*, which refers to certain information-seeking activities that high NFC individuals tend to engage in when attempting to make sense of a situation (von Stumm & Ackerman, 2013). Because of its interactional qualities, I predicted that this study's examination of co-rumination, in addition to NFC, might shed some light on co-rumination as a potential investment behavior for graduate students higher in NFC. However, the fact that no significant relationship was found between co-rumination and NFC in this sample suggests that co-rumination is not one of these investment behaviors, as a significant, positive relationship between the two variables would be needed to support the claim that it is.

Theoretical and Practical Applications

The findings of previous research into co-rumination and burnout has demonstrated that co-rumination exacerbates feelings of emotional exhaustion, and specifically so for graduate students (Boren, 2013). The findings of this study contribute to the literature on both co-rumination and burnout in several noteworthy ways. First, this study demonstrated that co-rumination between graduate students is not associated with the levels of cynicism reported by those students. Further, this study supports the findings of Boren (2013) in that there was a small but significant positive relationship between co-rumination and the emotional exhaustion subscale of burnout, which suggests that burnout is developed communicatively, as Miller et al. (1988) posited. Taken together, these findings lend credence to the idea that emotional exhaustion is the first aspect of the overall burnout syndrome to occur, and also to the idea that cynicism is as much a *response* to emotional exhaustion as it is a *symptom* of the syndrome as a whole, which are both ideas advanced elsewhere in the burnout literature (Maslach, 2003;

Maslach & Goldberg, 1998). The inclusion of NFC as a variable of interest in this study also makes significant contributions to the research literature by demonstrating that co-rumination and NFC are not directly related, to any significant extent, and that NFC is predictive of lower scores on almost every burnout-related measure used in this sample (i.e., the composite of the three subscales, the emotional exhaustion subscale, and the cynicism subscale) except for the personal efficacy subscale, with which it shared a significant, positive relationship. As noted previously, these findings suggest that NFC may play a role in protecting against or mitigating the experience of burnout and attitudes of cynicism in graduate students.

Practically speaking, this study reinforces the idea that co-rumination does have a positive relationship with emotional exhaustion, which is the most-experienced aspect of the burnout syndrome, although co-rumination had no direct effect on graduate student cynicism. Still, these findings suggest that co-rumination can have a deleterious effect on graduate students, in that frequent discussion of problems and negative emotions tends to make graduate students feel more emotionally exhausted. Thus, graduate programs should consider avenues to help limit graduate students' motivation to engage in excessive problem talk. One such strategy, as proposed by Boren (2013) is to provide graduate students with easier means to file grievances or to discuss problems. Perhaps encouraging or even incentivizing more interaction between students and faculty would limit the need for graduate students to discuss problems with their peers.

Limitations and Directions for Future Research

Of course, this study has some limitations worth noting, but addressing these limitations presents opportunity for future research concerning co-rumination, burnout, cynicism, and NFC. First, due to concerns about survey length, perceptions of social support among graduate students

were not measured in this study. As a particular type of social support, albeit a problematic type, it is perhaps necessary to gauge perceptions of social support to glean truly meaningful information about co-rumination from the data collected here. Future research should include perceptions of social support in the survey instrument. Similarly, graduate student engagement was not measured in this study. As the conceptual opposite of burnout, it might be worth considering engagement in the context of graduate school, especially in relation to burnout and the effects of co-rumination.

From a methodological standpoint, a longitudinal study on these concepts would be beneficial. Administering this survey at a single moment in time may not provide an adequate understanding of co-rumination's effect on burnout and cynicism in graduate students. Data for this study was collected at the beginning of the semester, when graduate students are arguably under less stress. Also, it would behoove researchers to study these concepts, and especially the particular context of graduate school, from a more qualitative perspective, considering that the vast majority of research on burnout, NFC, and co-rumination has been conducted with a quantitative focus, and that qualitative research would add necessary richness to the understanding of these concepts in context.

It is perplexing why co-rumination was not found related to overall burnout scores, as it was in Boren's (2014) study. Future research should continue to explore co-rumination's influence on the burnout construct as a whole. It should be mentioned that NFC is traditionally presented as a raw total of the responses to the scale's items, as opposed to the mean of responses. Due to time constraints, NFC scores could not be presented as such in the present study, which certainly limits the ability to apply or expand this data to other studies on NFC. Future research should approach the presentation of NFC scores from the traditional standpoint.

Finally, future research should examine the variables included in this study in relation to other potentially influential variables, such as the amount of time one has been in school consecutively, their particular graduate program, or the amount of work they are engaged in outside of the university, whether that work be regarding family or another job. Certainly, such variables likely influence feelings of burnout in the experiences of graduate students, and may provide some co-ruminative motivation.

Conclusion

The results of this study point to several noteworthy conclusions. First, the hypothesized positive relationships between co-rumination and both overall feelings of burnout and cynical attitudes in graduate students were not supported. However, co-rumination and the emotional exhaustion dimension of burnout showed a significant, positive relationship in this sample. Taken together, this suggests that burnout is, at least in part, communicatively developed. It also suggests, though, that co-rumination does not lead to burnout in the cases of the cynicism and personal efficacy dimensions of the construct. Second, graduate student co-rumination and need for cognition were not found significantly associated, suggesting that need for cognition is likely just indicative of more thought, and not necessarily indicative of more discussion. Finally, significant, negative relationships were found between need for cognition and overall burnout, as well as between need for cognition and cynicism. Notably, these findings suggest that there is something about need for cognition that protects against or mitigates the experience of burnout and the development of cynical attitudes in graduate students. The positive relationship between need for cognition and the personal efficacy subscale of burnout is a potential explanation for this last set of findings.

This study sought to build on the findings of Boren (2013; 2014), who demonstrated that co-rumination exacerbated the experience of burnout as measured by the emotional exhaustion subscale in graduate students, and as measured by the three-dimensional construct in a sample of working adults. The present study supports Boren' (2013) findings that co-rumination exacerbates emotional exhaustion, but contradicts his (2014) findings when co-rumination is examined in relation to the burnout construct as a whole. As such, future research should continue to explore the relationships between co-rumination and the composite burnout construct, as well as the relationships between co-rumination and burnout's three dimensions. Need for cognition, unexpectedly, proved the most fruitful of the variables of interest included in this study. Future research should continue to examine NFC's influence on burnout, and particularly so in the graduate student environment, as higher levels of NFC were associated with lower levels of burnout and cynicism here. Certainly, the present study provides the first step to a more complete understanding of the relationship between NFC and burnout.

Regarding the practical implications of this study, first, because co-rumination was found to have a positive relationship with emotional exhaustion, it is apparent that burnout can, indeed, be developed communicatively. It is also clear that the content of seemingly-socially supportive transactions is as important to consider as the actions themselves, as co-rumination among graduate students served to exacerbate the experience of emotional exhaustion in this sample, despite co-rumination being considered a type of social support. Therefore, educators and school administrators should consider methods through which graduate students can voice their concerns without having to rely on other graduate students to do so. Such methods could include monthly meetings between a graduate student and different faculty members to help bolster the student's relationships with school faculty. Or, graduate programs could provide students with

information regarding mental health and well being resources on campus. Indeed, encouraging or even incentivizing more interaction between graduate students and faculty, as well as between graduate students and administration, could likely help students limit the extent to which they discuss problems with each other, and thus, also limit the extent to which they burn out. Also, the fact that age was negatively related to burnout, negatively related to co-rumination, and positively related to NFC suggests that it students should consider taking time between their undergraduate and graduate studies to gain work experience before returning to school for a graduate degree, as it appears older students were better able to handle, or were at least not as impacted by, the stressors and requirements of graduate school in this sample.

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Appendix A

Descriptive Information

Please answer the following questions to the best of your ability.

1. Are you at least 18 years of age?
   a. Yes
   b. No
2. What is your age, in years? _____
3. Please indicate your biological sex.
   a. Male
   b. Female
   c. Intersex
   d. Prefer not to answer
4. Please indicate your ethnicity.
   a. African-American
   b. Asian-American
   c. Caucasian
   d. Latino/a
   e. Other
   f. Prefer not to answer
5. What year did you receive your undergraduate degree (BA/BS).
6. In what college is the graduate program in which are you currently enrolled?
   a. School of Nursing
   b. School of Forestry and Wildlife Sciences
   c. College of Engineering
   d. College of Business
   e. School of Pharmacy
   f. College of Veterinary Medicine
   g. College of Sciences and Mathematics
   h. College of Liberal Arts
   i. College of Human Sciences
   j. College of Education
   k. College of Architecture, Design and Construction
   l. College of Agriculture
   m. Interdisciplinary
   n. Other; Please specify: _____
7. Are you a full-time or part-time student? _____
8. Is your graduate program an online program?
   a. Yes
   b. No

9. What type of graduate degree are you currently pursuing?
   a. Ph.D. (if PhD, skip to #10)
   b. Master's Degree (e.g., MA/MS/MBA/etc.) (skip to #11)
   c. Graduate Certificate (skip to #11)
   d. Other; Please describe:_____ (skip to #11)
10. What year did you receive your Master's Degree, or related graduate degree/certificate (do not answer if currently working toward Master's Degree)?
11. How many semesters of graduate coursework have you completed? _____
12. Do you currently hold a graduate teaching and/or research assistantship?
         If yes, continue; If no assistantship, skip to 13.
   a. Graduate teaching assistantship (GTA)
   b. Graduate assistantship (GA)
   c. Research assistantship (RA)
13. If No, have you held one in the past?   Yes/No
14. If you currently hold an assistantship of some type, please list primary work-related activities (e.g., taking role in large lecture class; teaching two sections of 30 student classes; grading weekly essays; washing lab equipment; conducting interviews for research studies, etc.).
15. Do you hold an additional job(s) outside of your graduate program?
   a. If yes, please list primary work duties.
16. Please provide an estimate for how many hours per week you devote to the following:
   a. Graduate coursework _____
   b. Research _____
   c. Assistantship duties (if applicable) _____
   d. Work outside of the graduate program (if applicable) _____

Co-Rumination at Work Scale (Haggard et al., 2011)

The following items focus on your attitudes and opinions about your work as graduate students. As you answer these questions, think about "work" as duties related to your role in your graduate program, including coursework and assistantship obligations (if applicable). Please respond with as accurate description of your experiences as possible.

On a scale from 1 to 5, with 1 = not at all true and 5 = really true, please answer the following questions.

1. When I have a problem at work, we talk to each other about it for a long time.
2. If I have a problem at work, we will spend our time together talking about it, no matter what else we could do instead.
3. When my friend has a problem, I always try really hard to keep my friend talking about it.

4. When I have a problem, my friend always tries to get me to tell every detail about what happened.
5. When we talk about a problem that I have at work we will talk about every part of the problem over and over.
6. When we talk about a problem that I have at work we talk a lot about the problem in order to understand why it happened.
7. When we talk about a problem that I have at work we talk a lot about all the different bad things that might happen because of the problem.
8. When we talk about a problem that I have at work, we try to figure out everything about the problem, even if there are parts that we might never understand.
9. When we talk about a problem that I have at work we spend a long time talking about how sad or mad I feel.

Maslach Burnout Inventory – General Survey (Schaufeli et al., 1996)

The following items address feelings that are common to working environments. As you answer these questions, think about "work" as duties related to your role in your graduate program, including coursework and assistantship obligations (if applicable). Please respond with as accurate description of your feelings and experiences as possible.

On a scale from 0 to 6, with 0 = never and 6 = daily, please indicate how often each statement applies to you.

1. I feel emotionally drained from my work *(Exhaustion)*
2. I feel used up at the end of the workday (*Exhaustion*)
3. I feel tired when I get up in the morning and have to face another day on the job. (*Exhaustion)*
4. Working all day is really a strain for me. (*Exhaustion*)
5. I can effectively solve problems that arise at my work. *(Efficacy)**
6. I feel burned out from my work. (*Exhaustion*)
7. I feel I am making an effective contribution to what this organization does. *(Efficacy)**
8. I have become less interested in my work since starting this job. *(Cynicism)*
9. I have become less enthusiastic about my work. *(Cynicism)*
10. In my opinion, I am good at my job. *(Efficacy)**
11. I feel exhilarated about my work. *(Efficacy)**
12. I have accomplished many worthwhile things at my job. *(Efficacy)**
13. I just want to do my job and not be bothered. *(Cynicism)*
14. I have become more cynical about whether my work contributes to anything. (*Cynicism*)
15. I doubt the significance of my work. *(Cynicism)*
16. At my work, I feel confident that I am effective at getting things done. *(Efficacy)**
*Reverse scoring is used on this item

Need for Cognition Scale (Cacioppo et al., 1984)

People approach problem solving and information processing differently. The following statements address your perceptions of processing information. There is no right or wrong answer, just differences in preferences.

On a scale from 1 to 5, with 1 = strongly disagree and 5 = strongly agree, please indicate your overall level of agreement with the following statements.

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.*
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.*
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issues even when they do not affect me personally.

* Reverse scoring is used on this item.

Questions for Incentive Drawing

1. Would you like to sign up for the chance to win one of four $25 Amazon gift cards?
   a. Yes (if yes, respondent is directed to a page with the link to a second survey, where they may enter their contact information for the incentive drawing)
   b. No (if no, respondent is finished with survey and thanked for their participation)
2. Please follow this link to a second survey, where you may enter your contact information for the incentive drawing (please note, the information provided for the incentive drawing cannot be linked in any way to your responses on the current survey):

Appendix B

Recruitment/Information Letter:

Hello Graduate Students,

You are invited to participate in a research study entitled "Graduate Student Burnout and Cynicism: Examining the Effects of Student Co-Rumination and Need for Cognition," which examines the feelings of burnout and cynical attitudes graduate students may have regarding their graduate coursework and related obligations. Aside from burnout and cynicism, this survey assesses the extent to which graduate students talk negatively about their problems with fellow graduate students (i.e., co-rumination), as well as the extent to which graduate students enjoy the process of engaging in effortful thought (i.e., need for cognition).

You are being invited to participate in this research study because you are a graduate student at Auburn University and are 18 years of age or older.

The survey should take no longer than 20 minutes. As a reward for your participation, you will have the chance of entering into a drawing to win one of four $25 Amazon gift cards. Participants will complete the questionnaire through Qualtrics, an online survey platform. To enter the drawing for the Amazon gift cards, participants will have the option of entering their name and email address into a second survey, the link to which will be provided upon completion of the first survey.

Proceeding with this online survey indicates that you consent to participate in this study.

To begin the survey, please go to this website:

https://auburn.qualtrics.com/jfe/form/SV_3eewf5xOa7KjEqh

Your participation in this survey is completely voluntary and your insights will be used to help us further contribute to the developing body of knowledge regarding burnout across the graduate student population. As you complete the survey, you can end your participation at any

time by closing the browser. Your responses will remain anonymous and no individual data about you will be reported.

Within any research study there is always a potential risk when participant disclosure is involved as you might feel uncomfortable thinking about your graduate school experience. Benefits for participants include having the opportunity to reflect on your own graduate school experience, as well as aid in developing knowledge regarding graduate student burnout. There are no costs for participants of this study.

This study is being conducted by Matthew Newport, M.A. student (Auburn University) and Debra L. Worthington, Ph.D. (Auburn University). If you have further questions about this project, you may contact Matthew Newport at mmn0006@auburn.edu or Debra L. Worthington at worthdl@auburn.edu. If you have questions about your rights as a study participant, please direct your questions to the Auburn University Office of Research Compliance at (334) 844-5966 or irbadmin@auburn.edu.

Thank you for being willing to share your insights and participate in this important research.

Thanks!

Matthew Newport
Auburn University
mmn0006@auburn.edu

The Auburn University Institutional Review Board has approved this document for use from January 17, 2020 to ------- Protocol #20-024 EX 2001, Newport