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Cognitive Fusion, Self and Other-Blame, and College Adjustment Outcomes

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COGNITIVE FUSION, SELF AND OTHER-BLAME, AND COLLEGE ADJUSTMENT OUTCOMES

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ABSTRACT

College students from socioeconomically challenging backgrounds are more likely to drop out of college before being awarded a bachelor's degree. A challenging background predicts difficulties in emotion regulation, which may affect adjustment to college and, subsequently, persistence in college until a bachelor's degree is awarded. Previous research has identified cognitive fusion, a state in which one unquestioningly believes the literal content of their thoughts, and inflexible usage of self and other-blame as predictors of negative social, psychological, and academic outcomes. The present study used self-report data collected from emerging adult college students at a small midwestern university to assess whether the presence of high cognitive fusion would increase the effects of self and other-blame usage on college adjustment outcomes. While none of the moderation models tested were significant, higher cognitive fusion was significantly associated with lower reports of psychological and social adjustment to college. The exploratory analyses conducted suggest that both childhood socioeconomic status and cognitive fusion influence college adjustment for emerging adults. Thus, interventions seeking to improve college persistence for students from challenging backgrounds may benefit from incorporating therapies that reduce cognitive fusion.

Keywords: Cognitive Fusion, Self-Blame, Other-Blame, College Adjustment

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INTRODUCTION

Attainment of a college degree has become an increasingly important part of upward mobility in the United States (Ma & Pender, 2023). On average, college graduates' lifetime earnings surpass those of high school graduates who directly enter the workforce by the age of 33. While college enrollment rates have increased over the past few decades, enrollment alone does not guarantee retention of students until a degree is awarded. Recent reports show that only around 64% of college students seeking a bachelor's degree earn that credential within six years of enrollment (National Center for Education Statistics, 2022). The 36% of students who drop out suffer the loss of the many benefits associated with degree attainment. Further, there are inequitable factors that influence which students return to school and which do not; students from high-challenge neighborhoods had lower persistence rates than students from low-challenge neighborhoods (Ma & Pender, 2023). High-challenge neighborhoods were defined using a composite of college attendance, household structure, median family income, housing stability, education level, and crime rates.

One aspect of high-challenge neighborhoods that may influence persistence of incoming college students is a higher degree of emotional dysregulation, which is predicted by lower family income as a child and higher exposure to stress (Kim et al., 2013). Ability to regulate emotions may improve adjustment to the novel challenges encountered as a student enters college (Garg et al., 2016). Some of the barriers that are most strongly associated with student attrition are the increased academic difficulties presented in college, low ability to self-motivate, and social isolation (Tinto, 1996). A strong ability to recognize and regulate one’s own emotions is an invaluable strength that may aid in overcoming these specific barriers (Garg et al., 2016). Unfortunately, university students report higher degrees of depressive symptoms, negative

thought patterns, and cognitive fusion compared to same-age non-university students (Miniati et al., 2023). Thus, interventions aiming to improve emotional regulation may be especially valuable for college students and may even help to address educational inequities between students from high-challenge and low-challenge backgrounds. The current study will investigate the relationship between two specific risk factors for emotional dysregulation (cognitive fusion and rigid usage of blame-related cognitive emotion regulation strategies) and college adjustment in academic, psychological, and social domains, with the hope of improving mental health interventions for emerging adults adjusting to college.

Literature Review

College and Development

The college transition has been identified as a setting for intervention because of the many challenges associated with this period. Traditional students, or students entering college immediately after graduating high school, are generally in the developmental stage of emerging adulthood, which follows adolescence and precedes young adulthood (Arnett, 2004). In adolescence, individuals face difficulties relating to new roles and negotiating increased autonomy from their parents or guardians (Phillips & Power, 2018). As they transition from adolescence to emerging adulthood, these issues become magnified by the increased responsibilities placed on legal adults. Arnett (2004) identified five features of the emerging adulthood phase that can pose new challenges for emerging adults. This phase is a time of identity exploration, meaning that individuals may experience changes in their values and goals in life. This ties into the next characteristic of this stage, which is instability. Emerging adults experience a higher frequency of change in their dwellings, jobs, and relationships, which may produce negative emotions for some individuals. A third characteristic is possibilities, which

refers to the wide range of available paths still open to individuals in the emerging adulthood stage. This can be both exciting and intimidating, as emerging adults may feel pressure to commit prematurely to one particular path. Fourth, the emerging adulthood phase is characterized by self-focus, as the individual begins to differentiate more from their family identity and take on the responsibility of choosing their path in life. This self-focus may be advantageous when targeting psychological interventions towards emerging adults. Finally, "feeling in-between" is a characteristic of this stage that refers to the negotiation of roles as individuals start to leave adolescence behind but are not fully ready to live an independent adult life. Each of Arnett's characteristics of emerging adulthood highlights a vulnerability that could be addressed or a strength that can be used to introduce effective mental health interventions to this age group.

By the time emerging adults first attend college, they have undergone a course of emotional development guided by their environment and physical and cognitive maturation. Typically, individuals in middle childhood gain the cognitive development needed to recognize patterns of emotions and consider effectiveness of emotion regulation strategies based on the context in which they are used; these strategies are often external, such as removing oneself from a frustrating situation (Cicchetti, 2016). This phase is followed by an increase in metacognition, meaning that children can begin to observe their own thought processes and how thoughts contribute to their behavior. In adolescence, individuals gain the ability to consciously control their cognitive emotion regulation strategies (Phillips & Power, 2018). Using their improved symbolic and abstract reasoning skills, along with self-reflection, adolescents are able to consider future situations and decide which emotion regulation strategy is likely to be most effective for achieving their desired outcome (Cicchetti, 2016). Thus, the necessary cognitive abilities for

effective emotion regulation are present in the typical emerging adult. However, emotional socialization and availability of emotion regulation strategies can influence whether emerging adults are able to make the best use of their cognitive abilities when regulating their emotions.

Interactions with caregivers and family members play a vital role in introducing children to emotion regulation. Throughout childhood, children observe the contexts in which their parents regulate their emotions and which strategies they use (Phillips & Power, 2018). Children also learn directly from their caregivers as they discuss emotions with each other, and punishment and reinforcement are administered to the child for behaviors resulting from emotions. If a child has been socialized to suppress emotional responses due to being punished for emotional expression and observing their parents suppressing their own emotions, they may not learn to use other emotion regulation strategies that could be more effective. Thus, the emotional environment throughout childhood may impact the emotion regulation repertoire that an emerging adult brings with them to college.

Students from high-challenge neighborhoods may have especially limited repertoires of emotion regulation strategies (Ion et al., 2023). This is compounded by evidence that students from these backgrounds have more physiological difficulty regulating activity of the amygdala, the emotional center of the brain (Kim et al., 2013). These findings suggest that inequitable factors in childhood may cause students with challenging backgrounds to have a disadvantage in emotion regulation abilities compared to students who grew up in a financially stable and emotionally nurturing environment. Considering the high prevalence of stressors in the college environment, this emotion regulation disadvantage may increase the rate of attrition for college students from high-challenge backgrounds.

If an individual is at a disadvantage with emotion regulation abilities due to factors in their childhood, the college transition may be an important intervention site for several reasons. The increased autonomy and independence present during this stage may increase the effectiveness of mental health interventions, as emerging adults may be more willing to accept perspectives that differ from their parents' (Arnett, 2004). The wide range of possibilities available to many emerging adults may be reduced by an inability to regulate emotions. Improving emotion regulation skills during emerging adulthood may restore career options for students who previously would have had more limited possibilities.

In addition to the advantageous features of self-focus and identity exploration during emerging adulthood, there are also vulnerabilities present during this stage that may benefit from emotion regulation interventions. An emerging adult's experiences and interactions in college may influence the formation of their adult identity (Arnett, 2015). College students will experience increased social demands as they create new social networks, explore romantic relationships, and learn to advocate for themselves with professors and career supervisors. Regulation of emotion plays an essential role in forming and maintaining social relationships (Phillips & Power, 2018). Failures in the social arena during college because of emotion regulation deficits may affect the self-concept of emerging adults in a manner that lasts into early adulthood. Failure to regulate emotions in college may also reduce available resources for emerging adults; many students will need academic references and professional network contacts that may be harder to secure for those who have interpersonal issues due to emotion regulation deficits. Overall, there are several features of the college transition that might make it a valuable setting for emotion regulation interventions. By investigating the influence of cognitive fusion

and blame strategies on emotion regulation and therefore college adjustment, the present study will contribute to the theory behind college persistence and emotion regulation interventions.

Cognitive Fusion and Emotion Regulation

The concept of cognitive fusion can be defined as a belief in the literal truth of one's own thoughts, characterized by a failure to interrogate the evidence supporting those thoughts or recognize the influence of irrational thoughts on one's mood (Benfer et al., 2020). Belief in the literal truth of one's thoughts increases the emotional impact of the thoughts, which may lead to more intense emotions that are more difficult to regulate, especially if one has a limited repertoire of emotion regulation strategies. Cognitive fusion is one component of acceptance and commitment therapy's (ACT) conceptualization of psychopathology. A closely-related second component, experiential avoidance, refers to coping with distress by avoiding distressing stimuli, including thoughts, feelings, and environmental stressors. ACT considers experiential avoidance maladaptive because a certain degree of distress is often necessary when pursuing valued goals.

Cognitive fusion and experiential avoidance combine to form psychological inflexibility, which is a mental state in which a person's thoughts and feelings exert undue influence over their behaviors, leading to rigid behaviors that take a person further from meeting their personal goals (Levin et al., 2014). Thus, ACT focuses more on changing a person's reaction to their psychological symptoms, rather than targeting the symptoms directly (Hayes, 2004). The experiential avoidance associated with psychological inflexibility can cause people to delay their progress towards personal goals until their symptoms have been alleviated; ACT seeks to improve functioning while the symptoms are still present by increasing psychological flexibility. Thus, ACT identifies psychological inflexibility and its component parts (cognitive fusion and

experiential avoidance) as contributors to poor psychological health and aims to reduce them through therapy.

A psychologically inflexible person finds distressing thoughts and feelings especially intolerable because they automatically believe the content of the thoughts and identify with their emotions. They may then use maladaptive strategies such as substance use and social isolation to avoid those thoughts and feelings. A survey of Slovenian community adults found that higher psychological inflexibility was associated with higher ill-being and lower well-being for respondents (Avsec et al., 2022). This was partially explained by the use of avoidant coping strategies. Another study found that psychological inflexibility both longitudinally and cross-sectionally predicted suicidal ideation in a college sample (Krafft et al., 2019b). Breaking psychological inflexibility into its constituent parts allows more specific and actionable interventions to be applied.

Cognitive fusion is especially important as a component of psychological inflexibility because it describes dysfunction at its source: when a person first has an automatic thought and reacts to it. Hayes et al. (2006) describe cognitive fusion as a preceding factor that can produce and maintain experiential avoidance. Because cognitive fusion causes people to believe the content of their thoughts unquestioningly, it can lead to behaviors taken to avoid those thoughts to prevent the ensuing distress of identifying with them. Thus, the moment of believing the content of a thought triggers a cascade converting that thought into action, a process that can be accelerated by experiential avoidance. For example, a college student might have the thought, “I am stupid,” after performing poorly on a test, fully believe the thought, feel distressed by it, and avoid that distress by engaging in substance use to avoid more negative thoughts.

In support of this upstream theory of cognitive fusion, Cookson et al. (2020) investigated the relationship between stressful life events, cognitive fusion, and symptoms of anxiety and depression for university students. They reported that cognitive fusion independently mediated the relationship between stressful life events and symptoms of anxiety and depression, with experiential avoidance only adding explanatory value when combined with cognitive fusion. In the example of the student with a poor test grade, if the student were able to interrogate or distance themselves from the initial thought, "I'm stupid," it wouldn't have the same behavior-influencing effect as it does when they believe the thought. Having a lower degree of fusion with thoughts means that individuals will experience less distress from those thoughts and be less likely to turn to avoidant strategies to prevent them from recurring. Treating cognitive fusion may therefore help to prevent experiential avoidance and other downstream symptoms from developing in the first place.

Psychological inflexibility and cognitive fusion are closely related to emotion dysregulation, as those with low psychological flexibility likely have more difficulty recognizing the effects of their thoughts on their emotions in a given moment and intervening to prevent those emotions from manifesting as maladaptive behaviors. Hayes et al. (2012) theorized that cognitive fusion and experiential avoidance could combine to produce avoidant behaviors or an increase in impulsive behaviors, suggesting that cognitive fusion could be involved in both internalizing and externalizing symptoms. The common factors in the two symptomology pathways are dysregulation of emotion and a rigid application of the same behaviors to varying situational demands. As Hayes (2004) wrote, cognitive fusion narrows the repertoire of available coping strategies, meaning that it is less likely an individual will flexibly and effectively regulate their own emotions in different situations. College provides a wide variety of new and stressful

experiences to incoming students. Thus, high levels of cognitive fusion may exacerbate barriers to college adjustment, perhaps disproportionately in students who have limited emotion regulation repertoires due to challenging factors in their childhood.

In college students specifically, psychological inflexibility and cognitive fusion have been documented in association with poorer outcomes across several domains. A study by Bi and Li (2021) sampled 644 Chinese college students and used latent profile analysis to divide them into psychological flexibility profiles. Psychological inflexibility was associated with college adjustment in each profile; low psychological flexibility participants experienced the lowest success in college adjustment, while high psychological flexibility participants reported the highest degree of college adjustment. Psychological flexibility, as the inverse of psychological inflexibility, is negatively related to cognitive fusion and experiential avoidance. A psychologically flexible person demonstrates less cognitive fusion and experiential avoidance, while a psychologically inflexible person has high levels of these qualities. Krafft et al. (2019a) found that, in their college-student sample, high levels of cognitive fusion were associated with higher reported distress and more functional problems. Cognitive fusion was also associated with rumination, hostility, academic issues, social issues, and family issues. These findings suggest that cognitive fusion may interact with stressful events encountered in college life to produce functional deficits in students. Reducing cognitive fusion may help students to more flexibly regulate their emotions and behavior in response to the varying demands placed on them by the college environment.

Appraisal Theory of Emotion

Considering the relationship between cognitive fusion with one's thoughts and decreased ability to regulate one's emotions, an appraisal theory of emotion will be used to support the

logical assumptions of this study. According to Roseman's Emotion System model (2013), people use contextual information to analyze events and behaviors, generate emotional responses, and determine appropriate behaviors to take based on their own goals. When an individual experiences a negative consequence, they are likely to use available contextual information to determine the reason the event happened and how to avoid the consequence in the future. This process of situation appraisal can produce the emotional response necessary to motivate actions to avoid receiving the same negative consequence again.

The Emotion System model includes several dimensions of situational appraisals, including whether the individual has control over an event, whether the event is certain or uncertain, and whether the event is caused by impersonal circumstances, another person, or the individual themselves. The present study is especially interested in the latter dimension, which can be called appraisal of agency. Appraisals of agency produce distinct emotional responses depending on the perceived causal agent of an event, as different sources of negative consequences require different reactions from an individual. When a negative consequence occurs because of another person's actions, the common emotional responses include dislike, anger, and contempt (Roseman, 2013). These emotions can be adaptive because they prime the individual to take interpersonal action to prevent the consequence from happening again. When an individual is the cause for their own negative consequence, the common emotional responses are regret, guilt, and shame (Roseman, 2013). These emotions can promote self-control strategies, such as time management or behavioral contingencies, to prevent the consequence-linked behaviors from being repeated.

The theorized relationships between appraisal of agency and subsequent guilt and anger responses have been supported experimentally. Neumann (2000) tested the theoretical

assumption that self-attribution is related to guilt, while other-attribution is related to anger. In this study, university students were primed either to attribute a series of neutral events to their own agency or to the agency of another person. After being placed into a controlled conflictual situation, self-attributing participants produced more guilt-related statements, while other-attributing participants were more likely to respond with anger. In another study, college students were presented with a vignette that elicited a feeling of other-blame in participants (León et al., 2009). Participants reporting higher levels of blame also reported higher anger. Based on these findings and the Emotion Systems model, the determination of the causal agent of an event, or who is to blame, can lead to vastly different emotional responses. Thus, this appraisal theory of emotion describes a pathway for the conversion of thoughts to emotions, which may help to explain the relationship between fusion to one's thoughts and negative emotion regulation outcomes.

Cognitive fusion may influence the emotional appraisal of an event in several ways. Individuals with a high level of cognitive fusion tend to believe in the literal truth of their own thoughts (Benfer et al., 2020). This fusion to thought content can cause inflexibility of responses in a new situation. For example, if a person has a history of experiencing negative consequences due to others' actions, their thoughts may be primed to appraise events as other-caused (Neumann, 2000). Cognitive fusion with these initial thoughts may prevent the person from fully considering the available contextual information, possibly leading to erroneous appraisals of agency. Once an appraisal has been completed, a person with high cognitive fusion may also have difficulty reappraising the situation as new information becomes available.

An inflexible appraisal style may contribute to emotion dysregulation as context-inappropriate emotional responses prevent the individual from taking functional steps to avoid

undesired consequences. For example, if a student attributes a low grade on a test to their professor's agency, rather than their own lack of studying, the student may experience anger and frustration. Anger and frustration are likely to motivate interpersonal coping strategies, like complaining to friends about the professor, and less likely to produce the self-control behaviors needed to change the consequence in the future; in this case, setting aside more time for studying. When a student uses a context-inappropriate strategy, they are likely to experience the negative consequence again, and highly cognitively fused students may be less likely to change their appraisal even when presented with evidence that their appraisal was ineffective. The use of ineffective coping strategies fails to remove the emotion-provoking stimulus, leading to continued arousal of negative emotions. This can also be applied to students who inflexibly appraise situations as their own fault, even when those situations are out of their direct control. Guilt and shame are unlikely to produce interpersonal problem-solving behaviors that may be needed in college situations, such as reaching out to a professor to contest the grading of a test question. Consequently, an inflexible approach to attribution could result in functional deficits in a college setting, especially when compounded with a high degree of cognitive fusion.

Self and Other-Blame as Emotion Regulation Strategies

In keeping with the present study's emphasis on the cognitive basis of emotion dysregulation and adjustment problems, attributions of self and other-blame will be conceptualized as cognitive emotion regulation strategies. These two cognitive processes have been identified as cognitive emotion regulation strategies by Garnefski and Kraaij in their development of a Cognitive Emotion Regulation Questionnaire (CERQ; 2007). The label "emotion regulation strategy" does not indicate that the strategy is adaptive or maladaptive, but rather that it is a common cognitive strategy used by some individuals to modulate their

emotions in response to an event. The CERQ includes a variety of cognitive strategies that are considered to be maladaptive, such as rumination and catastrophizing, in addition to more adaptive strategies, such as positive reappraisal and refocus on planning. Because of the attributional focus of the present study, the self-blame and other-blame subscales will be the primary strategies focused on in this discussion.

While it is possible for self-blame and other-blame to be applied adaptively to certain situations (such as when an event is unequivocally the fault of the individual or another person in their life), these strategies can become maladaptive if they are inflexibly applied across different situations. In their validation of the CERQ, Garnefski and Kraaij (2007) found that test-retest reliability coefficients for both self-blame and other-blame were significant and moderately sized at a one-year follow-up, suggesting that there is some stability in individual use of these strategies. Inflexible trait-like use of self-blame and other-blame may increase the chance that these strategies will be applied maladaptively to an incompatible situation: blaming others when the fault is one's own can be considered maladaptive, as can blaming oneself when an event outside of one's control occurs. This can be observed in the case of the student who blames a professor for their low grades and consequently chooses to go out with friends instead of setting more time aside for studying.

Both self and other-blame have been documented in association with negative mental health and adaptive outcomes. Polizzi et al. (2022) surveyed U.S. undergraduates about their use of cognitive emotion regulation strategies and their quality of life in functional domains. Reported use of self and other-blame was associated with lower quality of life in both clinical and non-clinical participants. A study by Marincas et al. (2013) investigated underlying factors for Romanian high school seniors failing their high school exit examination, referred to as the

baccalaureate. When comparing high schoolers who failed the baccalaureate and first-year college students who passed, those who failed the exam reported higher levels of both self-blame and other-blame. A study of Turkish university students found that self-blame was correlated with self-handicapping tendencies (Yavuzer, 2015). Finally, blame strategies and functional interference of anxiety were assessed in Spanish 8 to 12-year-olds (Rodriguez et al., 2021). Other-blame mediated the relationship between anxiety and functional interference of symptoms both at home and in school. These studies support a negative relationship between the use of self/other-blame and adjustment in academic and personal domains.

Further, some types of self-blame may be more detrimental than others, especially when they become a regular part of an individual's coping repertoire. Graham and Juvonen (1998) sampled U.S. middle school students in the 6th and 7th grade about their experiences with peer victimization. This study divided self-blame into a characterological form and a behavioral form; characterological self-blame attributes a negative consequence to an internal characteristic of the victim, while behavioral self-blame attributes the negative consequence to the victim's behavior. Students who reported using characterological self-blame after events of victimization reported higher levels of loneliness and anxiety and lower levels of self-worth. Behavioral self-blame followed the same direction of association with these variables, though with smaller correlation coefficients. The relationship between self-perceived victimization and maladjustment outcomes was also partially mediated by use of self-blame (Graham & Juvonen, 1998). Thus, students with a history of peer rejection or conflict and use of characterological self-blame may have increased risk of maladjustment when entering the college environment. Reducing the use of self-blame or reducing its behavioral influence through cognitive defusion, or decreased belief in the content of one's thoughts, may help reduce maladjustment risk for these students.

In addition to relationships with functional impairment, blaming strategies have been documented in association with cognitive fusion. Benfer et al. (2020) examined cognitive fusion and self-blame in a sample of U.S. community adults. Cognitive fusion showed a significant moderate correlation with self-blame relating to generalized traumatic experiences. Additionally, cognitive fusion moderated the relationship between self-blame and post-traumatic symptoms, suggesting that cognitive fusion amplifies the effect of negative cognitions. In a sample of Pakistani university students, conceptualizations of a hated self or inadequate self-predicted cognitive fusion (Noureen & Malik, 2021). Cognitive fusion also partially mediated the relationship between these negative self-conceptualizations and depressive symptoms. These findings suggest a relationship in which cognitive fusion and negative self-cognitions are often present together and work to amplify each other's negative effects when both are present. However, the interactions between cognitive fusion and blame strategies have not been investigated in correlation with college adjustment outcomes.

The proposed relationship between cognitive fusion and blame-related cognitions is further complicated by the finding that individuals are more likely to make negative self-attributions when they are in a negative mood state, even mild states such as normal dysphoria after upsetting daily events (Forgas et al., 1990). This finding suggests a possible pathway from daily stressors to negative self or other-blame, the emotional effects of which are then amplified by cognitive fusion to produce further negative mood states and possible negative adjustment outcomes. In college, the frequent presence of daily stressors may result in increased maladaptive self or other-blame in students who are predisposed to use these cognitive emotion regulation strategies. If these students also have high cognitive fusion, the blame attributions are

more likely to cause negative mood states and promote maladaptive behaviors to avoid those feelings, leading to adjustment issues in social, psychological, and academic domains.

The Present Study

The college environment introduces many new emotional, social, and academic challenges to first-time students. Emotion regulation is a valuable skill that allows students to make healthy and adaptive decisions when faced with novel stressful situations. In the college adjustment process, a lack of emotion regulation skills may result in a student making impulsive or avoidant decisions that negatively affect their relationships with professors and peers. Negative experiences such as poor grades or conflicts with peers or professors may culminate in a higher chance of dropping out of college. Cognitive fusion and blame strategies may act as barriers to adaptive emotion regulation, as they can increase the intensity of emotions, making it more difficult to regulate them. Thus, a better understanding of these potential barriers to emotion regulation may support the design and implementation of interventions to facilitate healthy emotional development and adjustment to the college environment for first-time students.

The purpose of the present study is to clarify the relationships between cognitive fusion, self-blame and other-blame, and college adjustment. Previous research supports a positive correlation between cognitive fusion and use of self and other-blame as cognitive emotion regulation strategies. Both cognitive fusion and self/other-blame have been documented in association with negative mental health and adjustment outcomes. Self-blame is more strongly associated with feelings of guilt and sadness, while other-blame is more associated with anger. However, previous studies have not linked cognitive fusion, self and other-blame, and college adjustment outcomes in a unified manner. Thus, the present study will examine the distinct

effects of self and other-blame on domains of academic, social, and psychological college adjustment. Cognitive fusion is predicted to moderate the relationship between blame strategies and adjustment.

Hypotheses

H1: Self and other-blame will each have negative relationships with college adjustment outcomes in all three domains. More blame will be associated with lower adjustment outcomes.

H2: Cognitive fusion will be negatively related to college adjustment outcomes in all three domains, such that higher levels of cognitive fusion will be associated with poorer academic, psychological, and social adjustment to college.

H3: Cognitive fusion will moderate the relationship between each blame strategy and college adjustment in each of the three domains. High levels of cognitive fusion paired with high use of each blame strategy will result in significantly lower reported adjustment in academic, psychological, and social adjustment to college.

METHODS

Participants and Procedure

The current study received 102 responses, which were then screened to ensure that all participants were between the ages of 18 and 25, enrolled in at least one on-campus course, and were not engaging in careless responding (see Appendix A for participant flow diagram). The average age of the 66 participants retained for analysis was 19.74 years (*SD* = 1.68). Demographic frequencies and percentages for participant gender, race/ethnicity, and years enrolled are summarized in Table 1.

Participants were recruited from 100- and 200-level courses across all departments at a small midwestern university. Study administrators contacted course instructors who then distributed the survey link to students in their courses. Some participants received a small academic compensation for their participation at the discretion of their course instructor; in these instances, an alternative assignment was also offered to avoid coercion to participate.

All elements of the study protocol were administered using Google Forms. Participants were presented with the informed consent document on the first page and were instructed to indicate or refuse consent by continuing or exiting the survey. Participants then completed a brief demographic survey, followed by the Cognitive Emotion Regulation Questionnaire, the Cognitive Fusion Questionnaire, and the College Adjustment Questionnaire. The scales were administered in the same order for all participants, but items within each scale were randomly assorted by Google Forms. At the end of the survey, participants were presented with a debriefing form containing more details about the purpose of the study and contact information for the primary investigator and on-campus mental health resources.

Materials

Demographic Information

The demographic information form presented to participants included questions about gender identity, age, ethnicity, years enrolled at an undergraduate institution, and a 3-item scale assessing their perceived economic status during childhood (Griskevicius et al., 2011; See Appendix B for demographic survey items).

Use of Self and Other-Blame

The Cognitive Emotion Regulation Questionnaire (CERQ) assessed participants' usage of cognitive emotion regulation strategies, namely self and other-blame (Garnefski & Kraaij, 2007). The questionnaire includes nine subscales that measure self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and blaming others. The full questionnaire was administered in an attempt to conceal the study's focus on blame strategies from participants; this is necessary as blame is likely to be affected by social desirability bias (Van de Mortel, 2008).

The 36-item questionnaire contains example statements such as "I feel that I am the one who is responsible for what has happened," "I feel that others are responsible for what has happened," and "I feel that I am the one to blame for it." (see Appendix C for the full CERQ). Participants indicate whether they *almost never*, *rarely*, *sometimes*, *frequently*, or *almost always* use each cognitive emotion regulation strategy. Participant composite scores for each subscale range from 1 (rare usage of the specific strategy) to 5 (frequent usage of the specific strategy).

In initial validation, the CERQ showed acceptable to good internal consistency for all of the factors measured (Garnefski & Kraaij, 2007). In the present study, reliability for the self-blame and other-blame scales was assessed using Cronbach's alpha, showing acceptable

reliability for the present sample (self-blame: α = .76; other-blame: α = .73). The initial validation study also reported that test-retest reliability after one year was fair to good (self-blame, r = .55; blaming others, r = .65; Garnefski & Kraaij, 2007).

Cognitive Fusion

The Cognitive Fusion Questionnaire (CFQ) measured participants' level of cognitive fusion, or the degree to which they believe the literal content of and are distressed by their own thoughts (Gillanders et al., 2014). Scores on the seven items (See Appendix D) of the questionnaire are averaged to produce a cognitive fusion composite ranging from 1 to 7, with a higher score indicating higher cognitive fusion. An example item from the questionnaire is, "I tend to get very entangled in my thoughts." Participants indicated whether each statement was *never true*, *very seldom true*, *seldom true*, *sometimes true*, *frequently true*, *almost always true*, or *always true* for themselves.

A previous study on construct validity found that CFQ scores were highly correlated with automatic thoughts (r = .61, p < .001), ruminative response style (r = .84, p < .001), and depression symptoms (r = .69, p < .001; Gillanders et al., 2014). The questionnaire also demonstrated good test-retest reliability at a follow-up time of an average of 4 weeks (r = .81, p < .001). In the present study, the Cronbach's alpha calculated for this scale indicates excellent reliability (α = .92).

College Adjustment

The College Adjustment Questionnaire (CAQ) was administered to evaluate adaptive functioning in the college environment (O'Donnell et al., 2018). This questionnaire consists of 14 items designed to assess functioning in relational, psychological, and academic domains. Example items include, "I am succeeding academically," "I am happy with my social life," and

"I feel that I am doing well emotionally since coming to college" (See Appendix E for the full scale). Items are answered using a 5-point Likert-type scale ranging from 1. *Very inaccurate* to 5. *Very accurate*. All item responses were averaged to produce an overall adjustment composite score, and then items were divided by subscale and averaged into three domain-specific adjustment scores ranging from 1 (very poor adjustment) to 5 (excellent adjustment).

In initial validation, the CAQ showed good internal reliability for each of its three scales (Educational Functioning, $r = .89$, $p < .001$; Relational Functioning, $r = .84$, $p < .001$; and Psychological Functioning, $r = .79$, $p < .001$). The CAQ also demonstrated good convergent validity with the established Student Adaptation to College Questionnaire, which is a similar but significantly longer questionnaire ((Educational/Academic domains, $r = .65$, $p < .001$; Relational/Social domains, $r = .67$, $p < .001$; and Psychological/Emotional domains, $r = .69$, $p < .001$; O'Donnell et al., 2018). In the present study, Cronbach's alpha was used to assess scale reliability for the obtained sample. Results for the overall scale and each of the three subscales indicate good reliability (College Adjustment Overall: $\alpha = .89$; Educational Functioning: $\alpha = .93$; Relational Functioning: $\alpha = .85$; Psychological Functioning: $\alpha = .82$).

RESULTS

Data were screened using the frequencies function of SPSS. Only 3 scores were missing; these were replaced with the mean score for each item. Skewness and kurtosis for all variables were either within the acceptable range (-1 to 1) or within the range of the standard error multiplied by three. Thus, all scales appeared to be normally distributed. Table 1 shows the demographic composition of the sample.

Hypothesis One

Bivariate correlations were performed to test the hypothesis that both self-blame and other-blame are negatively related to college adjustment overall and in all three domains. Neither self-blame nor other-blame returned any significant correlations with any of the adjustment composites. These results do not support the tested hypothesis. See Table 2 for correlations between all study variables.

Hypothesis Two

Bivariate correlations were performed to test the hypothesis that cognitive fusion is negatively related to college adjustment overall and in all three domains. Higher cognitive fusion was significantly associated with lower overall adjustment, r (64) = -.33, $p < .01$. Cognitive fusion and academic adjustment were not significantly correlated. Cognitive fusion and social adjustment were marginally significantly correlated, r (64) = -.24, $p = .05$. Finally, cognitive fusion was significantly correlated with psychological adjustment, r (64) = -.49, $p < .001$. Thus, the second hypothesis tested was partially supported. Participants reporting higher cognitive fusion also reported lower overall, social, and psychological adjustment.

Table 1

Frequency and Percentages of Gender, Race/Ethnicity, and Education (N = 66)

	Frequency	*Percent*
Gender		
Female	56	84.8
Male	8	12.1
Transgender Male	1	1.5
Non-Binary/Genderqueer	1	1.5
Race/Ethnicity		
White	56	84.8
Hispanic/Latinx/Spanish Origin	6	9.1
Middle Eastern/South Asian	1	1.5
Black/African American	1	1.5
East Asian, Hawaiian Native/other Pacific Islander	1	1.5
Prefer not to say	1	1.5
Years Enrolled in School		
Freshman/first year of enrollment	26	39.4
Sophomore/second year of enrollment	21	31.8
Junior/third year of enrollment	15	22.7
Senior/fourth year or more of enrollment	4	6.1

Table 2

Descriptive Statistics and Correlations for Study Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7
1. Self-Blame	66	3.47	0.71	—						
2. Other-Blame	66	2.43	0.73	-.16	—					
3. Cognitive Fusion	66	4.54	1.28	.23	-.06	—				

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7
4. Overall Adjustment	66	3.44	0.79	-.06	.24	-.33**	—			
5. Academic Adjustment	66	3.73	1.04	-.01	.22	-.08	.80**	—		
6. Social Adjustment	66	3.27	0.99	-.02	.12	-.24*	.72**	.28*	—	
7. Psychological Adjustment	66	3.28	1.04	-.13	.22	-.49**	.80**	.55**	.38**	—

*$p < .05$. **$p < .01$.

Hypothesis Three

Eight moderation analyses were performed to assess the prediction of each college adjustment domain (Y) from self-blame and other-blame (X1) and cognitive fusion (M; moderator). It was hypothesized that usage of self-blame and other-blame would predict college adjustment when individuals were high in cognitive fusion. To reduce any possible issues of multicollinearity, self-blame, other-blame, and cognitive fusion were standardized, and interaction terms were created for each of the blame types with cognitive fusion.

Overall Adjustment

Two hierarchical regression analyses were performed to evaluate whether the interactions of self-blame and other-blame, respectively, and cognitive fusion were predictive of overall college adjustment. First, self-blame and cognitive fusion were entered into the first stage of the model and the interaction term was entered into stage two of the model. Overall, the regression model approached significance, F (3,62) = 2.62, p = .06; R = .34, Adjusted R^2 = .07. Self-blame and cognitive fusion accounted for approximately 7% of the variance in overall college

adjustment. The interaction term of self-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = .26, p = .79; β = .03.

Next, other-blame and cognitive fusion were entered into the first stage of a new model and the interaction term was entered into stage two of the model. Overall, the regression model was significant, F (3,62) = 4.73, p < .01; R = .43, Adjusted R^2 = .15. Other-blame and cognitive fusion accounted for approximately 15% of the variance in overall college adjustment. The interaction term of other-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = 1.46, p = .15; β = .13.

Academic Adjustment

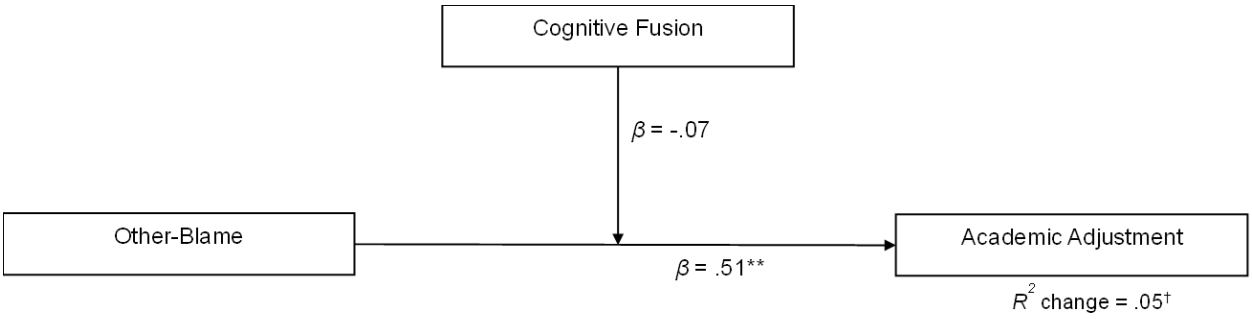
Hierarchical regression analyses were performed to evaluate whether the interactions of self-blame and other-blame, respectively, and cognitive fusion were predictive of academic college adjustment. First, self-blame and cognitive fusion were entered into the first stage of the model and the interaction term was entered into stage two of the model. Overall, the regression model was not significant, F (3,62) = .27, p = .85; R = .11, Adjusted R^2 = -.04. The interaction term of self-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = -.59, p = .56; β = -.09.

Next, other-blame and cognitive fusion were entered into the first stage of a new model and the interaction term was entered into stage two of the model. Overall, the regression model approached significance, F (3,62) = 2.38, p = .08; R = .32, Adjusted R^2 = .06. Other-blame and cognitive fusion accounted for approximately 6% of the variance in academic college adjustment. The interaction term of other-blame and cognitive fusion also approached significance, t (62) = 1.86, p = .07; β = .23.

To further probe the near-significant interaction, simple slopes were conducted at low (Low Cognitive Fusion) and high (Highly Cognitively Fused) levels of the moderator. Results indicated that other-blame serves as a significant predictor of academic adjustment at high levels of the moderator, or for highly cognitively fused individuals only, t (62) = 2.56, p = .01; β = .51 (see Figure 1). Other-blame did not significantly predict academic adjustment at low and average levels of the moderator. At high levels of the moderator, increased other-blame was predictive of higher academic adjustment, supporting the moderation hypothesis in the opposite direction of the predicted relationship (see Figure 2).

Figure 1

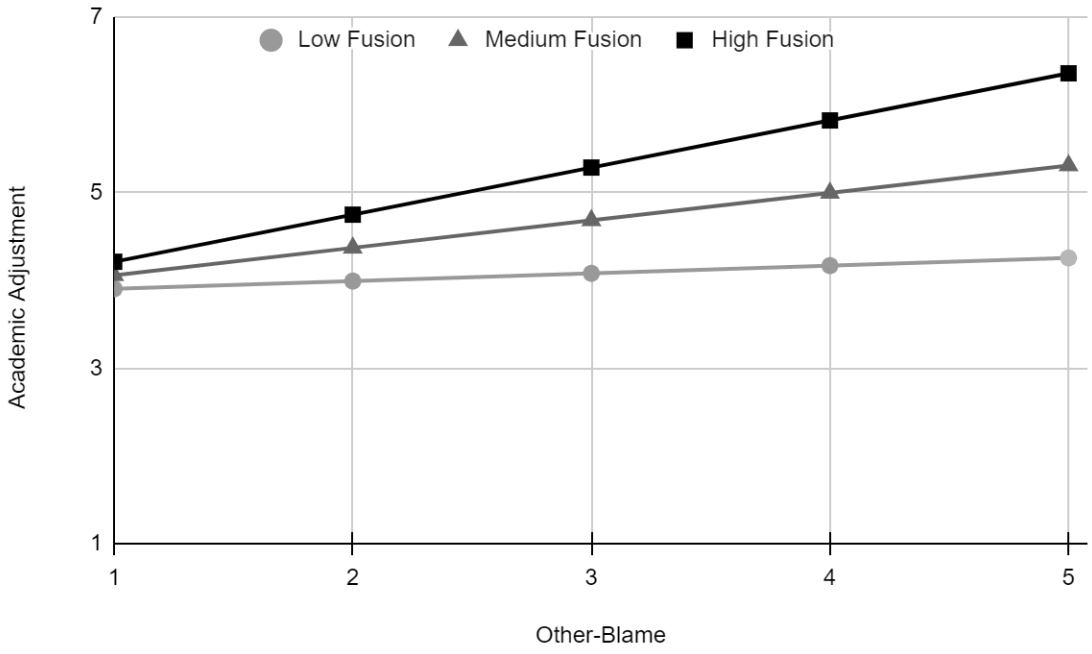
Moderation Diagram with Beta Weights and R^2 Change for Highly Cognitively Fused Individuals (High Levels of the Moderator).



***p = .01; †p = .07.*

Figure 2

Plotted Regression Equations of Other-Blame Predicting Academic Adjustment at High, Medium, and Low Levels of Cognitive Fusion.



Social Adjustment

Hierarchical regression analyses were performed to evaluate whether the interactions of self-blame and other-blame, respectively, and cognitive fusion were predictive of social college adjustment. First, self-blame and cognitive fusion were entered into the first stage of the model and the interaction term was entered into stage two of the model. Overall, the regression model was not significant, F (3,62) = 1.47, p = .23; R = .26, Adjusted R^2 = .02. The interaction term of self-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = .54, p = .59; β = .07.

Next, other-blame and cognitive fusion were entered into the first stage of a new model and the interaction term was entered into stage two of the model. Overall, the regression model

was not significant, F (3,62) = 1.56, p = .21; R = .27, Adjusted R^2 = .03. The interaction term of other-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = .28, p = .78; β = .03.

Psychological Adjustment

Hierarchical regression analyses were performed to evaluate whether the interactions of self-blame and other-blame, respectively, and cognitive fusion were predictive of psychological college adjustment. First, self-blame and cognitive fusion were entered into the first stage of the model and the interaction term was entered into stage two of the model. Overall, the regression model was significant, F (3,62) = 7.00, p < .001; R = .50, Adjusted R^2 = .22. Together, self-blame and cognitive fusion accounted for approximately 22% of the variance in psychological adjustment to college. The interaction term of self-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = .90, p = .37; β = .11.

Next, other-blame and cognitive fusion were entered into the first stage of a new model and the interaction term was entered into stage two of the model. Overall, the regression model was significant, F (3,62) = 8.64, p < .001; R = .54, Adjusted R^2 = .26. Other-blame and cognitive fusion predicted approximately 26% of the variance in psychological adjustment to college. The interaction term of other-blame and cognitive fusion was not significant, indicating that moderation had not occurred, t (62) = 1.16, p = .25; β = .12.

None of the moderation analyses conducted were significant, refuting all components of hypothesis three. The relationship between blame strategies, cognitive fusion, and college adjustment does not appear to be explained by a moderation relationship.

Testing Study Assumptions

To test the study assumption that participants of lower socioeconomic status (SES) in childhood would report lower college adjustment, an exploratory linear regression was performed. Perceived childhood SES was a significant predictor of overall college adjustment, r (64) = .34, $p < .05$. The regression equation for predicting college adjustment from childhood SES was found to be Y' = 0.17 * X + 2.78. The R^2 for this equation was .11; about 11% of the variance in college adjustment was predicted from childhood SES. Additionally, SES was a significant predictor of social adjustment, r (64) = .32, $p < .01$, higher psychological adjustment, r (64) = .26, $p < .05$, and lower cognitive fusion, r (64) = -.36, $p < .01$.

DISCUSSION

Recent reports on college retention and persistence find that students from high-challenge neighborhoods (neighborhoods with lower median family income, less housing stability, higher crime rates, etc.) are more likely to drop out before earning their bachelor's degree than students from low-challenge backgrounds (Ma & Pender, 2023). Because lower income in childhood and exposure to stress are predictive of difficulties in emotion regulation (Kim et al., 2013), the present study aimed to assess the relationships between two theoretically maladaptive emotion regulation characteristics (cognitive fusion and blaming self/others to regulate emotions) and college adjustment outcomes in academic, social, and psychological domains.

First, it was hypothesized that other-blame and self-blame usage would each display negative relationships with college adjustment overall and in each of the three domains. None of the correlation analyses run to test this hypothesis were significant. However, one correlation did approach significance; other-blame nearly reached a significant positive association with academic adjustment (p = .06). The direction of the association was in the opposite direction of the hypothesized relationship and findings from previous research associating other-blame with poorer academic outcomes (Marincas et al., 2013; Rodriguez et al., 2021). This discrepancy may be attributable to inaccurate measurement of the other-blame construct this study attempted to target. Because the present sample reported relatively low other-blame (M = 2.43 on a scale from 1 to 5), it is possible that the other-blame reported by participants did not represent rigid, maladaptive blaming of others. The ability to assign blame or responsibility to others in moderation might be academically adaptive in a college setting, where students need to advocate for themselves to their professors. Professors make mistakes, and emergencies outside of students' control happen, both of which warrant acting in an assertive manner rather than an

ashamed or self-blaming manner. Alternatively, it could be that individuals who blame others for problems in their lives are more likely to report satisfaction with their academic status, either due to an unwillingness to admit dissatisfaction in their performance or a sense that they have done all they can personally do to improve their academic performance.

Next, it was hypothesized that higher cognitive fusion would be associated with lower reported college adjustment in all three domains. This hypothesis was partially supported, as cognitive fusion was significantly related to overall adjustment in addition to social and psychological adjustment. Participants who reported higher levels of cognitive fusion tended to report lower social and psychological adjustment to college, which is consistent with previous research (Bi & Li, 2021; Noureen & Malik, 2021). Cognitive fusion demonstrated the greatest magnitude of association with psychological adjustment. However, this study did not replicate previous findings that cognitive fusion is associated with more academic issues (Krafft et al., 2019a). Thus, it appears that cognitive fusion's impact on the college transition primarily occurs through an increase in psychological symptoms and subsequent social difficulties, without any direct impact on academic adjustment.

Finally, it was hypothesized that self and other-blame would each be predictive of each of the college adjustment domains at high levels of the moderating variable, cognitive fusion. While several of the regression models were significant, indicating that overall adjustment and psychological adjustment could be explained using a combination of self or other-blame, cognitive fusion, and the interaction between the two, none of the interaction terms were significant. In the significant models, it was apparent that cognitive fusion was the driving variable behind the significant relationships, as neither self nor other-blame were significant predictors in any of the models. Thus, the moderation hypothesis was not supported. However,

the interaction term in one model approached significance ($p = .07$), and conducting simple slopes for this model revealed that other-blame was a significant predictor of academic adjustment at high levels of cognitive fusion. At high levels of cognitive fusion, high other-blame was associated with higher reported academic adjustment.

As with the near-significant positive correlation between other-blame and academic adjustment, the results of this moderation model could have two explanations. First, it could be that other-blame only has noticeable positive effects at high levels of cognitive fusion because highly cognitively fused individuals are at such a disadvantage that the small positive effect of other-blame (i.e., ability to place blame on others when it is their fault) actually makes a difference for them. Cognitive fusion had a nonsignificant negative effect on academic adjustment that may have contributed to these results. Conversely, participants with low fusion tended to report higher adjustment in all domains, and the additional benefit of other-blame might be negligible in comparison. An alternative explanation could be that participants who blame others for their problems and fully believe these attributions may be the least likely to admit they are dissatisfied with their academic performance. These participants may feel that they have done their part academically, and that anything they are unsatisfied with should be attributed to their professors or course difficulty rather than their own academic performance. Without additional information corroborating participants' academic performance, it is unclear which explanation is more likely to be true.

After hypothesis-testing was complete, additional analyses were performed to explore whether perceived childhood socioeconomic status (SES) was predictive of adjustment to college for the current sample, as low SES is one of the components of a high-challenge neighborhood that has been reported in negative association with college persistence (Ma & Pender, 2023).

Higher perceived childhood SES was a significant predictor of overall college adjustment, with a positive relationship. These findings are consistent with past research and suggest that impaired adjustment to college may contribute to higher dropout rates in students from high-challenge neighborhoods. When regressions were performed predicting the three domains of college adjustment from childhood SES, only social and psychological adjustment were significantly predicted by childhood SES. Additionally, lower reported childhood SES was significantly predictive of higher cognitive fusion. These results suggest that the decreased persistence rate in students from low-SES backgrounds is largely due to psychological and social difficulties, which is consistent with previous research (Kim et al., 2013). Cognitive fusion appears to be a significant contributor to these psychological difficulties, which means that acceptance and commitment therapy interventions designed to reduce cognitive fusion may help alleviate these psychological challenges and the adjustment problems that come with them.

Limitations

The present research has several limitations that should be considered when interpreting these results. First, the sample size was small and may have lacked adequate statistical power to identify relationships between study variables; this possibility is supported by the many results reported above that approached significance but were not fully significant at the .05 level. Additionally, the sample was largely homogeneous and comprised of white females. The results of this study may not generalize to populations outside of white females because of the lack of representation of other races/ethnicities and gender identities.

The self-report surveys used to measure the study variables were subject to several limitations. First, the use of self-report surveys limited the ability to collect situation-dependent information on usage of blame-related emotion regulation strategies in varying college-related

situations. Participants may approach different stressors in their lives with different emotion regulation strategies, which was not captured by the present study design. Additionally, it is very likely that reports of other-blame were affected by social desirability bias, as blaming others is often thought of as a failure to take accountability and a socially undesirable trait. Participants may not be willing to report, even anonymously, that they often blame others for their problems. Alternatively, participants who use this strategy may lack the self-awareness of their own emotion regulation processes necessary to report on strategy usage.

The self-report measurement of academic adjustment also proved to be a limitation of the study. Prior research has linked usage of other-blame with lower academic performance, but the construct measured by the self-report academic adjustment scale was more similar to academic satisfaction than an objective measure of academic performance. While perceived academic performance may be an important component of a student's choice to stay enrolled in college, an objective measure of academic performance would have helped to explain some of the more ambiguous results of this study.

Conclusions and Implications

The current study provides additional support for the role of cognitive fusion in reduced psychological, social, and overall adjustment to college. Self and other-blame were not identified as significant correlates of adjustment in college, though other-blame approached significance when associated with academic adjustment. Other-blame may be adaptive at the low levels reported by our sample, or participants who blame others may be less likely to report dissatisfaction with their academic performance in college. These findings identify possible intervention targets for improving college adjustment and subsequent persistence in college until the awarding of a degree. Cognitive fusion is one of the targeted constructs of acceptance and

commitment therapy, which has been labeled as having moderate research support in the treatment of depression by the Society of Clinical Psychology (2015). Thus, cognitive fusion is a treatable factor influencing college adjustment.

The present sample reported relatively high levels of self-blame (M = 3.47 on a 1-5 scale) and cognitive fusion (M = 4.54 on a 1-7 scale). This is congruent with recent findings that college students report higher levels of psychological distress than same-age non-university students (Miniati et al., 2023). These findings underscore the importance of mental health services on college campuses. Cognitive fusion was especially high for participants from low-SES backgrounds, suggesting that access to needed mental health services could be especially important for improving college persistence of students from under-represented backgrounds. Further, cognitive fusion was negatively related to childhood SES and negatively related to college adjustment in social and psychological domains, suggesting that reduction of cognitive fusion might help mitigate the effects of low-SES upbringing on college and psychological adjustment. In future studies, a mediation model may help to better explain the relationship between childhood SES, cognitive fusion, and psychological and social adjustment to college. Further research on the efficacy of acceptance and commitment therapy for reducing cognitive fusion in college students could help inform future intervention efforts.

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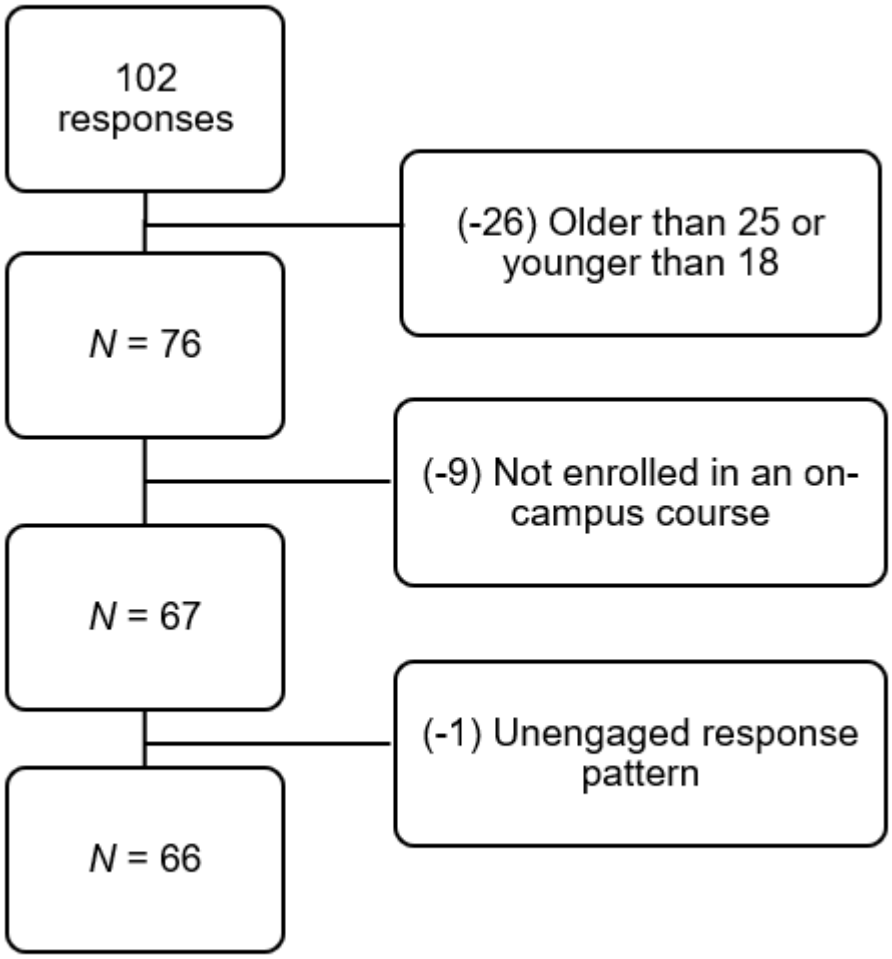
APPENDICES

Appendix A

Participant Flow Diagram



Appendix B

Demographic Questions

What is your age?

_____

For how many years have you been enrolled in an undergraduate degree? (if your academic status is different from your years of enrollment at a college or university, please select number of years enrolled)

-Freshman/first year of enrollment
-Sophomore/second year of enrollment
-Junior/third year of enrollment
-Senior/fourth year or more of enrollment

How many on-campus FHSU courses are you enrolled in for the Spring 2024 semester?

_____

What is your race/ethnicity?

-White
-Hispanic/Latinx/Spanish Origin
-Middle Eastern/South Asian
-Black/African American
-East Asian, Hawaiian Native/other Pacific Islander
-Prefer not to say

Which term best describes your gender identity?

-Woman
-Man
-Transgender woman
-Transgender man
-Non-binary or Gender queer
-Prefer not to say

Reflecting on your own childhood, please choose the response that best represents your agreement with each statement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My family usually had enough money for things when I was growing up	1	2	3	4	5	6	7
I grew up in a relatively wealthy neighborhood	1	2	3	4	5	6	7
I felt relatively wealthy compared to the other kids in my school	1	2	3	4	5	6	7

Appendix C

Cognitive Emotion Regulation Questionnaire (CERQ)

Please select the response that represents how often each statement is true for you when something stressful happens in your life.

	Almost never				Almost always
I feel that I am the one to blame for it	1	2	3	4	5
I feel that I am the one who is responsible for what has happened	1	2	3	4	5
I think about the mistakes I have made in this matter	1	2	3	4	5
I think that basically the cause must lie within myself	1	2	3	4	5
I feel that others are to blame for it	1	2	3	4	5
I feel that others are responsible for what has happened	1	2	3	4	5
I think about the mistakes others have made in this matter	1	2	3	4	5
I feel that basically the cause lies with others	1	2	3	4	5
I think that I have to accept that this has happened	1	2	3	4	5
I think that I have to accept the situation	1	2	3	4	5
I think that I cannot change anything about it	1	2	3	4	5
I think that I must learn to live with it	1	2	3	4	5
I often think about how I feel about what I have experienced	1	2	3	4	5
I am preoccupied with what I think and feel about what I have experienced	1	2	3	4	5
I want to understand why I feel the way I do about what I have experienced	1	2	3	4	5

	Almost never				Almost always
I dwell upon the feelings the situation has evoked in me	1	2	3	4	5
I think of nicer things than what I have experienced	1	2	3	4	5
I think of pleasant things that have nothing to do with it	1	2	3	4	5
I think of something nice instead of what has happened	1	2	3	4	5
I think about pleasant experiences	1	2	3	4	5
I think of what I can do best	1	2	3	4	5
I think about how I can best cope with the situation	1	2	3	4	5
I think about how to change the situation	1	2	3	4	5
I think about a plan of what I can do best	1	2	3	4	5
I think I can learn something from the situation	1	2	3	4	5
I think that I can become a stronger person as a result of what has happened	1	2	3	4	5
I think that the situation also has its positive sides	1	2	3	4	5
I look for the positive sides to the matter	1	2	3	4	5
I think that it all could have been much worse	1	2	3	4	5
I think that other people go through much worse experiences	1	2	3	4	5
I think that it hasn’t been too bad compared to other things	1	2	3	4	5
I tell myself that there are worse things in life	1	2	3	4	5
I often think that what I have experienced is much worse than what others have experienced	1	2	3	4	5
I keep thinking about how terrible it is what I have experienced	1	2	3	4	5

	Almost never				Almost always
I often think that what I have experienced is the worst that can happen to a person	1	2	3	4	5
I continually think how horrible the situation has been	1	2	3	4	5

Appendix D

Cognitive Fusion Questionnaire (CFQ)

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	very seldom true	seldom true	sometimes true	frequently true	almost always true	always true

1. My thoughts cause me distress or emotional pain	1	2	3	4	5	6	7
2. I get so caught up in my thoughts that I am unable to do the things that I most want to do	1	2	3	4	5	6	7
3. I over-analyse situations to the point where it's unhelpful to me	1	2	3	4	5	6	7
4. I struggle with my thoughts	1	2	3	4	5	6	7
5. I get upset with myself for having certain thoughts	1	2	3	4	5	6	7
6. I tend to get very entangled in my thoughts	1	2	3	4	5	6	7
7. It's such a struggle to let go of upsetting thoughts even when I know that letting go would be helpful	1	2	3	4	5	6	7

Appendix E

College Adjustment Questionnaire (CAQ)

Listed below are some statements that describe how college students might be feeling about their experience with college. **Please use the rating scale below to indicate how accurately each statement describes you *at this point in time.*** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

Response Options
1: Very Inaccurate
2: Moderately Inaccurate
3: Neither Inaccurate nor Accurate
4: Moderately Accurate
5: Very Accurate

	Very Inaccurate				Very Accurate
1. I am succeeding academically.	1	2	3	4	5
2. I don't have as much of a social life as I would like.*	1	2	3	4	5
3. I feel that I am doing well emotionally since coming to college.	1	2	3	4	5
4. I am happy with my social life.	1	2	3	4	5
5. I am doing well in my classes.	1	2	3	4	5
6. I am happy with how things have been going in college.	1	2	3	4	5
7. I am happy with the grades I am earning in my classes.	1	2	3	4	5
8. I feel that I am emotionally falling apart in college.*	1	2	3	4	5
9. I have had a hard time making friends since coming to college. *	1	2	3	4	5
10. I am as socially engaged as I would like to be.	1	2	3	4	5
11. I have felt the need to seek emotional counseling since coming to college.*	1	2	3	4	5
12. I am meeting my academic goals.	1	2	3	4	5
13. I have performed poorly in my classes since starting college.*	1	2	3	4	5
14. I am satisfied with my social relationships.	1	2	3	4	5

Appendix F

Recruitment Script

Hello. My name is Olivia Tipton, and I am a graduate student in the FHSU Psychology Department. I would like to invite you to participate in a research study. The purpose of my study is to gain a better understanding of personal factors that influence on-campus college students' adjustment to the college environment.

If you choose to participate, you will be given a survey to fill out asking questions about your personal thought patterns and your experience adjusting to college. Your professor may be offering research or extra credit for participating. Your responses will contribute to our understanding of how to help on-campus college students successfully adjust to college life.

You will be asked to fill out a consent form related to the study after your questions are answered. You will then be asked to complete a survey. If you choose to participate, the study will take approximately 20 minutes. If you have any questions about the study and/or would like more information about the study before deciding whether to participate, please contact me (Olivia Tipton) or my faculty supervisor (Dr. Stephanie Weigel).

If you would like to participate, click the following link:
URL

Thank you!

Olivia Tipton

o_tipton@mail.fhsu.edu

Dr. Stephanie Weigel

smweigel@fhsu.edu

(Faculty Supervisor)

Appendix G

Informed Consent Form

Name of the Study: Factors Influencing College Adjustment

INTRODUCTION
The Department of Psychology at Fort Hays State University supports the practice of protection for human subjects participating in research. You are being asked to participate in a research study. It is your choice whether or not to participate. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to continue this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with your professor, the Department of Psychology, or Fort Hays State University.

PURPOSE OF THE STUDY
The purpose of this study is to examine personal factors that influence college students' adjustment to the on-campus environment.

PROCEDURES
After you finish reading the consent and your questions are answered, you may click the "next" button to move on to the next section of the survey. Clicking "next" is giving consent to participate. You will be asked whether you are between the ages of 18 and 65 and whether you are enrolled in at least one on-campus FHSU course. Next, you will be asked to fill out a series of brief questionnaires related to behaviors, opinions, and basic demographics. Once you have completed all sections of the survey you will be routed to the debriefing statement. The last page of the online survey is the debriefing document. You may print out the debriefing page or just read the form and exit the survey. The debriefing form also provides you with contact information for the principal investigator, my thesis advisor, and the Health and Wellness Center. The debriefing form may also be used by course instructors to award research or extra credit for participation. **If you decide to participate in this research study, you will be asked to click "next" on the survey after you have had all of your questions answered and understand what participation in the study entails. The length of time of your participation in this study is 20 minutes. Approximately 200 participants will be in this study.**

RISKS
We do not anticipate more than minimal risk with this study. As this study is in an online survey format, all responses will be anonymous. There are items that could cause embarrassment if you were identified and your answers were exposed. You may experience psychological distress due to thinking about the items on the survey; however, this should be no more than you would experience in everyday life. To

protect confidentiality, your name will not be linked to your responses. As this study is anonymous there is no opportunity to directly follow up with you or ascertain your stress level following completion of the survey. If you are an FHSU student, you will be referred to the Health and Wellness Center if you feel distressed both at the bottom of this informed consent form and in the debriefing form on the final screen of the survey. The phone number and address of the Health and Wellness Center are provided as well as the contact information for the principal researcher. If you are participating through an institution other than FHSU, you will be referred to your respective counseling center. If you become distressed during the survey, you may close the window and stop participating at any time. All questions are voluntary; therefore, if you feel that a question is too distressing, you may skip that question.

BENEFITS

You may be offered course credit or extra credit as determined by your instructor, which may enhance your overall course grade. You may also benefit from participation by seeing how a research study operates and may even spark interest in conducting research. Finally, you may gain personal insight into your own experiences and factors that influence your behavior. The field of psychology could also benefit from your participation in this research by gaining an understanding of how personal factors may influence college adjustment as a young adult.

PAYMENT TO PARTICIPANTS

You will not receive any compensation for participation in this experiment. However, you may receive extra credit or research credit, but this is at your instructor's discretion.

PARTICIPANT CONFIDENTIALITY (HOW WILL PRIVACY BE PROTECTED)

Your name will not be associated in any publication or presentation with the information about you or with the research findings from this study. Instead, the researcher(s) will use a study number or a pseudonym rather than your name. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. Permission granted on this date to use and disclose your information remains in effect for five years. By signing this form, you give permission for the use and disclosure of your information for purposes of this study at any time in the five years the data is stored on the principal researcher's password-protected laptop.

OTHER IMPORTANT ITEMS YOU SHOULD KNOW

- **Withdrawal from the study:** You may choose to stop your participation in this study at any time by closing out of the survey window. Your decision to stop your participation will have no effect on your academic standing in the class or at Fort Hays State University.
- **Funding:** There is no outside funding for this research project.
- **Alternative options:** If your instructor is providing extra credit or research credit for your participation, they should also provide you with alternative ways to earn this

credit that do not include participating in this research study if you do not want to. Please speak directly with your instructor about alternative options.

REFUSAL TO SIGN CONSENT AND AUTHORIZATION
You are not required to continue with the survey Consent and Authorization form and you may refuse to do so without affecting your right to any services you are receiving or may receive from Fort Hays State University or to participate in any programs or events of Fort Hays State University. However, if you refuse to consent, you cannot participate in this study.

CANCELING THIS CONSENT AND AUTHORIZATION
You may withdraw your consent to participate in this study at any time by closing out of the survey window. You also have the right to cancel your permission to use and disclose further information collected about you, in writing, at any time, by sending your written request to: Olivia Tipton, Department of Psychology, 707 Park St. Hays, KS 67601. If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use and disclose information that was gathered before they received your cancellation, as described above.

QUESTIONS ABOUT PARTICIPATION
Questions about procedures should be directed to the researcher(s) listed at the end of this consent form.

PARTICIPANT CERTIFICATION:
I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions about my rights as a research participant, I may call 785-628-4321, write the Office of Scholarship and Sponsored Projects (OSSP), Fort Hays State University, 600 Park St., Hays, Kansas 67601, or email irb@fhsu.edu. I agree to take part in this study as a research participant. By continuing with the survey, I affirm that I am at least 18 years old and that I have received a copy of this Consent and Authorization form.

RESEARCHER CONTACT INFORMATION:

Olivia Tipton	Dr. Stephanie Weigel
Principal Investigator	Faculty Supervisor
Department of Psychology	Department of Psychology
707 Park St.	707 Park St
Fort Hays State University	Fort Hays State University
Hays, KS 67601	Hays, KS 67601
o_tipton@mail.fhsu.edu	smweigel@fhsu.edu

Appendix H

Debriefing Form

You have just completed a study titled "Factors Influencing College Adjustment." The purpose of this study was to examine the effect of specific emotion regulation styles on adjustment to the on-campus college environment. You were asked to fill out a survey asking questions about your usage of different emotion regulation strategies and your experience adjusting to college. The information provided will help researchers understand how to facilitate successful adjustment to college for incoming freshman students.

The research team greatly appreciates your help with this project! If you feel distressed after your participation in this project, you can contact the Health and Wellness Center (free to students) at 785-628- 4401 to schedule an appointment to talk with someone about how the project impacted you, or the Office of Scholarship and Sponsored Projects at 785-628-4321 if you have questions about the process of this research project. For more information about the research project, you can contact the principal researcher, Olivia Tipton. You may also contact the faculty adviser, Dr. Stephanie Weigel.

Sincerely,

Olivia Tipton

o_tipton@mail.fhsu.edu

Dr. Stephanie Weigel

smweigel@fhsu.edu

(Faculty Supervisor)

Appendix I

IRB Exempt Letter

FORT HAYS STATE UNIVERSITY

Forward thinking. World ready.

OFFICE OF SCHOLARSHIP AND SPONSORED PROJECTS

DATE:	January 17, 2024
TO:	Olivia Tipton, B.S.
FROM:	Fort Hays State University IRB
STUDY TITLE:	[2145853-1] Cognitive Fusion, Self and Other-Blame, and College Adjustment Outcomes
IRB REFERENCE #:	24-0055
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	January 17, 2024
REVIEW CATEGORY:	Exemption category # 2

Thank you for your submission of New Project materials for this research study. The departmental human subjects research committee and/or the Fort Hays State University IRB/IRB Administrator has determined that this project is EXEMPT FROM IRB REVIEW according to federal regulations.

Please note that any changes to this study may result in a change in exempt status. Any changes must be submitted to the IRB for review prior to implementation. In the event of a change, please follow the Instructions for Revisions at http://www.fhsu.edu/academic/gradschl/irb/.

The IRB administrator should be notified of adverse events or circumstances that meet the definition of unanticipated problems involving risks to subjects. See http://www.hhs.gov/ohrp/policy/AdvEvntGuid.htm.

We will put a copy of this correspondence on file in our office. Exempt studies are not subject to continuing review.

If you have any questions, please contact Keith Bremer at IRB@fhsu.edu. Please include your project title and reference number in all correspondence with this committee.

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I warrant that the posting of the Thesis does not infringe any copyright, nor violate any proprietary rights, nor contains any libelous matter, nor invade the privacy of any person or third party, nor otherwise violate FHSU Scholars Repository policies.

I agree that Fort Hays State University may translate the Thesis to any medium or format for the purpose of preservation and access. In addition, I agree that Fort Hays State University may keep more than one copy of the Thesis for purposes of security, back-up, and preservation.

I agree that authorized readers of the Thesis have the right to use the Thesis for non-commercial, academic purposes, as defined by the "fair use" doctrine of U.S. copyright law, so long as all attributions and copyright statements are retained.

To the fullest extent permitted by law, both during and after the term of this Agreement, I agree to indemnify, defend, and hold harmless Fort Hays State University and its directors, officers, faculty, employees, affiliates, and agents, past or present, against all losses, claims, demands, actions, causes of action, suits, liabilities, damages, expenses, fees and costs (including but not limited to reasonable attorney's fees) arising out of or relating to any actual or alleged misrepresentation or breach of any warranty contained in this Agreement, or any infringement of the Thesis on any third party's patent, trademark, copyright or trade secret.

I understand that once deposited in the Repository, the Thesis may not be removed.

Thesis: Cognitive Fusion, Self and Other-Blame, and College Adjustment Outcomes

Author: Olivia B. Tipton

Signature: Olivia Tipton

Date: 4/29/24