Conceptualizing College-Going Volition:
Investigating Relationships with Barriers and Self-Efficacy in Rural Appalachia

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ABSTRACT

High school students in rural Appalachia typically face a high degree of obstacles to college going and, because a large number of adults in this region have no postsecondary education, many high school students are prospective first-generation college students (PFGCSs). Using the tenets of social cognitive career theory (SCCT) and psychology of working, I investigated college-going volition among a sample of 452 high school students in rural Appalachia. As predicted, PFGCSs reported significantly lower college-going volition than non-PFGCSs. I also investigated this construct in relation to other key SCCT variables. College-going volition was moderately negatively correlated with perceived educational barriers and it provided unique prediction of college-going self-efficacy when controlling for barriers. Contrary to my hypothesis, these two predictors did not interact in the prediction of college-going self-efficacy. Implications for an inclusive understanding of college-going are discussed.

Keywords: Appalachian students, SCCT, psychology of working, volition, barriers

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CHAPTER 1: INTRODUCTION

Conceptualizing College-Going Volition

Educational and vocational researchers aim to understand factors that contribute to postsecondary aspirations and behaviors, especially when those two outcomes are at odds with one another. Researchers have also encouraged continued efforts to understand the choice to go straight into the workforce versus attend further education. There are discrepancies between the number of students indicating plans to attend college after high school, and the number of those that do (Venezia, Kirst, & Antonio, 2003). Furthermore, once students get to college, many do not complete their intended degree. In 2009, the three-year completion rate for an associate degree was 29.2% and the six-year completion rate for a bachelor's degree was only 55.5% (National Information Center for Higher Education Policymaking and Analysis, 2017).

The rural Appalachian region of the United States faces particularly disparate rates of educational and vocational attainment, disadvantaged by unique difficulties of the sociocultural environment and geographic landscape (deMarrais, 1998; Seal & Harmon, 1995). Students in this region often come from a low socioeconomic status and have parents with limited educational attainment and/or who are unemployed. Students might also have inadequate educational opportunities and face long travel times to school. The high school completion rates between 2010 and 2014 remained just over 70% for people over the age of 25 in many of the rural Appalachian counties, compared to the concurrent national average of 86.3% [Appalachian Regional Commission (ARC), 2017]. According to Pollard and Jacobsen (2013), nearly 75% of the population in this region who are 25 or older had obtained no form of postsecondary education. Furthermore, the rural counties face levels of unemployment up to 1.5 times the national average (ARC, 2016). These low rates of educational attainment coupled with poor

vocational attainment suggest that postsecondary education is not perceived as a likely option for students in these areas. These students appear to have a high number of obstacles limiting the choice to attend postsecondary education.

The current study investigates this perceived ability to freely make choices about going to college, or *college-going volition*. Work volition, from which college-going volition has been modified, has demonstrated influences on important outcomes, including work meaning and academic, job, and life satisfaction (Allan, Autin, & Duffy, 2014; Buyukgoze-Kavas, Duffy, & Douglass, 2015; Duffy, Bott, Torrey, & Webster, 2013; Jadidian & Duffy, 2012). The current study investigates volition as it pertains to going to college, which may be an avenue for understanding postsecondary pursuits. In doing so, I integrate variables from two career-related theories to increase the understanding of a unique population, high school students in rural Appalachia, and their thoughts about pursuing postsecondary education. These theories include the psychology of working framework (Blustein, 2006) and social cognitive career theory (SCCT: Lent, Brown, & Hackett, 1994), both of which consider one's surrounding context and aim to be broadly applicable across populations.

In the psychology of working framework, Blustein (2006) posits that individuals vary in their degree of choice regarding work-related decisions, thus potentially limiting the applicability of existing career theories. In proposing the idea of work volition, Blustein argued that many career theories tend to assume a degree of choice in making decisions about one's employment. In fact, the author contends that the notion of "career" is a part of a narrative with which a minority of people around the world can identify. Blustein (2006) intended for the psychology of working framework to explain the meaning and experience of work for people with varying levels of volition and for whom work holds varying purposes and meanings. In conceptualizing

work, Blustein (2006) considers the context that it creates and under which it is performed, including work that occurs in the job market as well as that done to care for one's family. Work is defined as having three primary potential functions: to provide (a) means of survival and power, (b) social connection, and / or (c) self-determination. However, not all individuals experience all three of these functions. According to the theory, volition is important for attaining the aspects of social connection and self-determination through one's work.

Within the psychology of working framework, Blustein (2006) conceptualized volition as an individual-level construct, although with benefits that extend upward into the greater organizational and societal levels. Integrating Blustein's description with the dictionary definition of volition, Duffy, Diemer, Perry, Laurenzi, and Torrey (2012) identified and defined "work volition" as "the perceived capacity to make occupational choices despite constraints" (p. 401). Work volition has been operationalized and studied as it pertains to individuals in the world of work as well as college students as they anticipate entry into the workforce with their respective degrees (Duffy et al., 2012; Duffy, Diemer, & Jadidian, 2012). In the current study, I aim to investigate the notion of work volition modified to pertain to making decisions about college. For high school students, the ability and decision to attend college is not something that all students have or make. Many students who indicate plans to attend college do not do so (Venezia et al., 2003). There are many influences on this action, both internal and external. College-going volition may be one such influence that will vary across students and impact beliefs about going to college. Moreover, college-going volition may be especially relevant for students from populations that face significant barriers to education, including rural Appalachian youth.

Evolving Conceptualizations of Volition

Within the educational literature, researchers studied volition as it relates to motivation and learning. Some described it as a dispositional will to do things without any external pressures, meaning one's efforts are driven by internal factors (Ornstein, 1995). From this aspect, volition is primarily a measure of autonomy and accountability. Volitional students are described as "overachievers" who have a disposition to be persistent and attentive when working toward goals (Ornstein, 1995, p. 106). Volition has often been discussed as a component, coupled with motivation, of the self-regulated learning process (Corno, 1993; Corno & Kanfer, 1993), by which students manage and appropriately focus their thoughts and emotions on learning tasks. Acting "of one's own volition" refers to effective utilization and allocation of resources in attempts to accomplish set goals (Corno, 1993). Some have argued that goal-setting is not enough for performance (Kim & Bennekin, 2016), and that volitional processes link goal setting to goal attainment (Kuhl, 1987; Zimmerman, 1989). According to Kuhl (1984), volitional control strategies include motivation and emotion control, and control over the situation and environment. Individual differences may contribute to varying levels of volitional control or implementation of volition strategies.

The construct of work volition, theorized by Blustein (2006), overlaps conceptually with that of volitional control in the educational literature in that they both address the issue of choice in the face of competing demands. Dispositional qualities are relevant across both constructs as individuals are likely to vary in their level of enacted strategies or perceived choice depending on a variety of factors. However, there are conceptual differences that must be acknowledged. Volition in learning has primarily been identified as a self-regulatory process or set of strategies to achieve ongoing goals, such as enacting stress-reduction or imagining desirable outcomes to

stay on track to complete a task (Corno & Kanfer, 1993). Work volition, on the other hand, is conceptualized as a belief that people can make choices in accordance with their own interests and not be constrained by other influences on those decisions (Blustein, 2006; Duffy et al., 2012; Duffy et al., 2012). In other words, work volition is concerned with one's beliefs regarding the possibility of making a choice aimed at a particular outcome rather than the behaviors one might enact to accomplishment individual goals.

In the current study, I investigated the construct of college-going volition: the perception of choice in the process of going to college despite constraining factors. Given the focus on beliefs surrounding the choice to pursue college, rather than strategies to achieve immediate educational goals, I chose to modify the work volition scale as opposed to using a more general scale of educational volition. Utilizing this scale is also an avenue by which I am attempting to extend the psychology of working framework, within which it is conceptually grounded. I believe that the attention to context and aim of inclusivity within the psychology of working warrant its application to Appalachian high school students who face a unique set of constraints on their career and educational trajectories.

Social Cognitive Career Theory: SCCT

The current study also looks to social cognitive career theory (SCCT; Lent et al., 1994) as an organizational framework. SCCT emphasizes the interplay of self-efficacy beliefs, outcome expectations, and interests in determining goals and subsequent performance. SCCT posits that self-efficacy and outcome expectations pertaining to a particular vocational domain influence one's interests in that domain. These interests then mediate the influence of self-efficacy and outcome expectations on goals (Lent at al., 1994). Additionally, factors related to the individual and the surrounding context influence self-efficacy and outcome expectations. In the SCCT

model, self-efficacy plays a central role in the link between context and experiences, on the one hand, and outcomes related to interests and performance, on the other. The tenets of SCCT are intended to apply to both career and academic behaviors because these domains share similar mechanisms of development (Lent at al., 1994). In the current study, I was interested in the application of SCCT to the pursuit of going to college among students in a rural setting, facing unique barriers. Previous research supported the application of SCCT among rural Appalachian youth in relation to career and educational aspirations and expectations (Ali & Saunders, 2006; Ali & McWhirter, 2006). Ali and Saunders (2006) found that perceived parental support and self-efficacy beliefs each contributed to the prediction of high school students' expectations to attend college. Ali and McWhirter (2006) found support for the utility of SCCT variables—self-efficacy beliefs, college outcome expectations, perceived barriers, and socioeconomic status—in predicting high school students' aspirations following high school; aspirations were categorized as work, vocational school, bachelor's degree, or professional degree.

Volition in the Context of SCCT

The role of work volition, as conceptualized within the psychology of working framework, has been investigated in relation to SCCT variables, particularly background contextual affordances and person inputs (e.g., gender, social class), proximal influences (barriers), and self-efficacy. In the psychology of working framework, Blustein (2006) theorized that demographic variables such as gender and social class may influence one's perceived sense of control over choices, with women and those from lower social classes often facing more constraints on volition than men and those from higher social classes. Researchers have found some support for the associations between lower social class and both lower work volition and higher barriers. For example, in a study by Duffy et al. (2015) attempting to determine

predictors of work volition in an undergraduate sample, the authors found that social class, as measured by self-report, was significantly related to work volition—lower social class was related to higher work volition—but this relationship was weak when accounting for other demographic variables. There was only a weak relationship between social class and barriers as well: lower social class was associated with higher barriers. However, one notable limitation to this study is that the sample was college students who, despite coming from different social classes, had all overcome many barriers and have achieved getting into college. The range of barriers faced may be restricted for this population relative to those who do not attend college, and thus, limit generalizability. Additionally, social class was only measured with two self-report items for which students rated their current and past social class.

In the current study, I investigated another demographic factor that may influence work volition: one's status as a prospective first-generation college student (PFGCS). PFGCSs are middle and high school students whose parents have never attended college (Gibbons & Borders, 2010). These students are more likely to be from lower income families and to achieve lower academic attainment. Gibbons and Borders (2010) found that these students perceive more barriers to pursuing a college education and report lower self-efficacy for college-going than their non-PFGCS peers. These students are also more likely to indicate plans to enter the workforce after high school, rather than intentions to pursue further education (Gibbons & Borders, 2010; Gibbons, Borders, Wiles, Stephan, & Davis, 2006). Based on research linking social class and barriers with volition (Duffy et al., 2015) and evidence that PFGCSs face more barriers and typically come from lower social classes (Gibbons & Borders, 2010), I hypothesize that PFGCSs will report lower college-going volition that non-PFGCSs (H1).

In previous research, work volition is associated with higher self-efficacy in related domains. For example, in college student samples, work volition is moderately (Duffy, Diemer, & Jadidian, 2012) to strongly (Jadidian & Duffy, 2012) correlated with Career Decision Self-Efficacy (CDSE; Taylor & Betz, 1983); those with higher volition also demonstrated higher levels of CDSE. Research indicates a moderate correlation in the same direction between work volition and science self-efficacy (Duffy, Bott, Allan, & Autin, 2014). Self-efficacy beliefs, whether regarding future educational or occupational options, have also demonstrated negative relationships with corresponding perceptions of barriers (Gibbons & Borders, 2010; Luzzo, 1996). Gibbons and Borders (2010) found evidence that, within the SCCT model, perceptions of barriers to college-going were directly related to college-going self-efficacy (CGSE), which further influenced intentions to go to college.

Past research demonstrated that those who indicate higher levels of work volition tend to report fewer career-related barriers: among college students, both moderate (Duffy et al., 2015) and weak relationships (Duffy et al., 2012) between these variables have been found; among adults, the relationship between work volition and barriers was weak (Duffy et al., 2012). Thus, work volition and barriers appear to be (negatively) related but distinct constructs. I expected to find similar results in the current study: that perceptions of barriers to college-going and college-going volition would demonstrate a significant, but no more than a moderate, negative correlation (H2). Given past findings that barriers and volition within a shared domain are unique constructs (Duffy et al., 2015; Duffy et al., 2012; and Duffy et al., 2012) and each significantly related to self-efficacy (Duffy et al., 2012; Jadidian & Duffy, 2012; and Duffy et al., 2014), I believed that each would demonstrate incremental prediction of college-going self-efficacy; lower barriers and higher volition would predict higher self-efficacy (H3).

In a study investigating the role of work volition within the SCCT framework among college students in science majors (Duffy et al., 2013), work volition positively correlated with all other variables tested in the model: self-efficacy, outcome expectations, interests and goals. In this same study, initial evidence was found for the role of volition as a moderator between self-efficacy and goals as well as between self-efficacy and outcome expectations. In both cases, volition interacted with self-efficacy; self-efficacy was a significant predictor at low levels of volition, but not at high levels of volition. However, the significance of these moderating effects disappeared when tested in a complete model (i.e., one that also included interests and all other associations between the SCCT variables). These findings provide evidence that volition is related to SCCT variables, but also suggest limited understanding of its role and location of influence relative to the other SCCT variables. Therefore, in the current study, I propose a different point of influence: the relationship between perceived educational barriers and college-going self-efficacy.

As previously described, college-going volition is an attitude regarding one's degree of choice in making decisions related to college when considering possible constraints on those decisions. One's level of college-going volition may influence how one considers and responds to external barriers to college-going, and thus, the role of barriers in relation to other outcomes. When someone feels a high degree of choice, barriers may have a lesser impact on self-efficacy. Conversely, when one feels a low degree of choice, barriers may have a greater impact on self-efficacy. Therefore, I predict that volition will moderate the relationship between college-going barriers and college-going self-efficacy; the negative relationship between barriers and self-efficacy will be stronger for those with low volition (H4).

CHAPTER 2: METHOD

Participants

The sample for the current study included students at three high schools in the rural Appalachian region of the United States. The data for this study were collected as part of a research-intervention program being implemented and assessed at these high schools, funded by a Science Education Partnership Award (SEPA) from the National Institutes of Health (NIH), #R25OD020231. The initial sample from which the subsample for the current study was derived comprised 1231 completed surveys. Of these participants, 228 (18.5%) did not give assent to have their responses used in research, and an additional 3 students' parents denied consent, resulting in a sample of 1000. The participants were randomly assigned one of two questions sets, one with measures pertaining to general college-going and one pertaining to STEMM pursuits, the former (n = 478) being the set used for the current study. I determined that 471 respondents sufficiently completed the general college-going measures (e.g. less than 15% of the items missing from any of the study scales). Last, I screened the sample with a validity check, for which I required participants answer three of the four validity items correctly. Two of the measures, the College-Going Self-Efficacy Scale and Perception to Educational Barriers Scale-Revised, included two embedded validity check items each, asking participants to select a specified response to determine if they were reading the items carefully. Participants' responses were considered valid if they answered at least three of the four validity check items correctly. Requiring all four validity items to be correct would have provided a sample of 426 and using the cutoff of three provided a sample of 453. After one participant was removed due to not completing the survey in an accurate manner (providing the same response for all items), the final sample for the current study consisted of 452 participants.

Of the 452 participants, 98.0% identified as White, 2.2% Latino, 2.0% American Indian, 1.1% Black, 0.2% Asian, and 0.2% Pacific Islander (participants could endorse more than one race, therefore, the percentages total to more than 100%). Of the participants, 56.4% were female and 42.3% were male. Five participants endorsed "prefer not to answer" and one did not complete the gender item. The sample included tenth, eleventh, and twelfth graders; tenth graders made up 35.8% of the sample, eleventh 34.5%, and twelfth 29.4%. Fifteen percent of the participants were 15 years old, 33.4% were 16, 35.6% were 17, and 15.5% were 18 years of age or older.

We categorized the sample based on prospective first-generation college student (PFGCS) status using conservative criteria; only those students with no parent who completed any college was categorized as prospective first-generation. This meant that a student with a parent who attended any college classes, including technical or vocational training, would be categorized as a non-PFGCS. I was not able to categorize with certainty those participants who reported one parent's education as high school or less and either a) left the other parent's education blank or b) did not know the education level of the other parent; therefore, the PFGCS status of these students was identified as missing data. This determination resulted in 153 (33.8%) prospective first-generation college students, 264 (58.4%) non-prospective first-generation college students, and 35 students (7.7%) who could not be categorized.

Procedure

The selection of these high schools was based on their location in counties that have been labeled as economically distressed by the Appalachian Regional Commission (ARC, 2016). The current study used a subset of responses gathered from a larger data collection. All 10th, 11th, and 12th grade students at these schools had the opportunity to participate in the surveys, which were

administered electronically during the school day on iPads distributed by the research team, as part of the program evaluation. At the beginning of each school year, parents are given the opportunity to decline consent for their students' program evaluation data to be used for research purposes.

Members of the research team went into classrooms to administer the surveys in the Spring semester following the administration of the intervention for that semester; the data reported here are from the post-intervention collection for the 2016-2017 school year. The research team members distributed iPads with the surveys open for completion, provided a brief explanation and answered any questions. Once students completed the survey, they indicated whether they assented to have their responses used in research. Only data from those students who assented, and whose parents did not decline consent, were used in the current study. There was no penalty for those who did not choose to participate in research and it did not impact their participation in the classroom interventions. Many of these students in the sample had received the intervention intended to increase interest in college-going and STEMM (Science, Technology, Engineering, Math, and Medicine). Grouping students by whether or not they should have had the intervention, based upon their grade and school attended, I estimated that 291 of the students should have received the intervention, and 161 should not have received it. Unfortunately, due to attendance concerns and unreliable self-report, I am not able to verify these numbers with confidence in the current data set.

A priori power analyses using G*Power suggested that our sample of 452 participants is adequate for the analyses used. Once I determined that I would need to run an ANCOVA to investigate the difference in college-going volition by PFGCS status, controlling for grade, I ran a G*Power analysis, which determined that 210 participants would be the minimum sample size

needed to detect a medium main effect (f = .25) with power of .95. I determined that a multiple regression model testing the incremental prediction of college-going self-efficacy by college-going volition and its interaction with educational barriers would require 107 participants to achieve statistical power of .95 with a medium effect size (f^2 = .15).

Measures

College-Going Volition. College-going volition was measured by modifying the Work Volition Scale- Student version (WVS- SV; Duffy et al., 2012), which consists of 16 items that assess the degree to which students perceive a capacity to make choices regarding their future occupation, despite constraints. The original WVS- SV consists of two subscales, volition and constraints, which measure students' general perceptions of their capacities to make future work choices and to do so despite constraints, respectively. Respondents use a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to respond to statements. Items on the volition subscale include "I feel total control over my future job choices," and items on the constraints subscale are reverse-coded and include "What I want has little impact on my future job choice." Duffy et al. (2012) found an internal consistency of .92 for the total scale among a sample of 379 undergraduate students. They also determined Cronbach's alpha estimates of .78 and .89 for the volition and constraints subscales, respectively.

For the current study, this measure was modified to be specific for the domain of college-going rather than work by rewording each item to refer to college-going. In addition, using feedback obtained from the research team, the last item from the non-student version of the Work Volition Scale (WVS; Duffy et al., 2012) was modified and added to the college-going version within the constraints subscale, "The college I would like to attend doesn't exist in the area where I live." Therefore, the resulting scale has 17 items, 16 from the WVS-SV and 1 from

the WVS. Other example items include: “I will be able to change my course of study in college if I want to” and “I feel total control of my choices regarding college.” In the current sample, this measure demonstrated a reliability estimate of .85.

College-Going Self-Efficacy. The College-Going Self-Efficacy Scale (Gibbons, 2005) was used to assess high school students’ expectations about their abilities to go to and stay in college, measured by two subscales of attendance and persistence, respectively. Using the prompt “How sure are you about being able to do the following,” the Attendance subscale asks students to respond to 15 items pertaining to issues related to finances, ability, family, and decision-making skills, on a 4-point Likert scale ranging from 1 (*not at all sure*) to 4 (*very sure*). An example of an Attendance items is “I can get accepted to a college.” The Persistence subscale asks students to use the hypothetical situation that they did go to college and respond to 16 items regarding issues of finances, ability, family, and life skills, using the same Likert scale. The Persistence subscale items include “I could make friends at college.” Higher scores on the measure are indicative of greater perceptions of college-going self-efficacy. The measure has demonstrated a reliability coefficient of .94 in a sample of middle school students (Gibbons & Borders, 2010). This measure demonstrated a reliability of .96 for the current sample.

Barriers to College Going. The Perception to Educational Barriers Scale-Revised (PEB-R; McWhirter, 2000; revised by Gibbons & Borders, 2010) was used to assess variables that might be barriers to continuing education after high school. This measure contains the original 28 items on the Perception of Educational Barriers Scale (McWhirter, 2000), along with 17 additional items. Furthermore, consistent with Gibbons (2005), I used only the Likelihood subscale, which addresses the occurrence of barriers. The revised scale includes 45 items, or perceived barriers, such as those related to finances and lack of social support. Items include “not

enough money" and "having to work while in school." Students rate the likelihood of each variable being a barrier on a scale of 1 (*not at all likely*) to 4 (*definitely*). When utilized with middle school students, the Cronbach's alpha of this revised Likelihood scale was .93 (Gibbons & Borders, 2010). The revised Likelihood scale demonstrated a reliability of .95 in the current sample.

Control Variables. At the end of the questionnaire, participants were asked to provide demographic variables - including gender, school, and grade - which were used to assess and account for pre-existing differences in college-going volition. A large number of the participants in the sample had received an intervention aimed at changing perceptions about college-going. I was unable to sufficiently assess and control for differences in the study variables between those who received the intervention and those who did not receive it due to the insufficient identification of those who had received it and those who had not.

CHAPTER 3: RESULTS

Missing items for some participants warranted a missing item analysis. Results of the analysis indicated that no item was missing from more than 1.5% of the participants. I used available case analysis because of the low item-level missingness; this is preferred over mean substitution, which can create inflated correlations between items (Parent, 2013).

I first assessed the extent to which the data met the assumptions for the planned analyses. Given that each student was assigned a unique code number, I could assume that observations are independent. I evaluated the data for normality and the existence of outliers, first for the dependent variable of volition for Hypothesis 1; the Shapiro Wilk's test of normality was significant for volition among PFGCSs ($p < .01$) and non-PFCGSs ($p < .001$), suggesting a violation of the normality assumption. Because large samples tend to be overly sensitive to tests of normality and skewness, I utilized a subjective assessment of the distribution shapes of the dependent variable for each category of prospective first-generation status (Tabachnick & Fidell 2013). While there appears to be some skewness and kurtosis, all values are less than three times the respective standard errors, thus I concluded these would not make a "substantive difference in the analysis" with a larger sample (Garson, 2012; Tabachnick & Fidell, 2013, p. 80).

The data were assessed for any potential univariate outliers for volition using visual analysis of descriptive tests, including histograms and box plots in SPSS (Aguinis, Gottfredson, & Joo, 2013). Histograms of the volition scores for PFGCSs and non-PFGCSs separately revealed no data points that sat away from the distributions. Further, there were no outlying scores indicated by the box plots, which equate to 2.7 standard deviations from the mean in normal distributions; this also satisfies the general rule of being with 3 standard deviations (Aggarwal, 2013). Thus, I performed no further univariate outlier analyses and retained all 452

of the participants for the between-groups analyses. However, the analyses were only run for the 417 participants that were categorized as PFGCSs or non-PFGCSs. The nonsignificant Levene's Test, $F(1, 410) = .045$, $p = .83$, provided support for equality of variances between the two groups.

I also tested the data for multivariate outliers for the regression tests for hypotheses 3 and 4, using the Mahalanobis Distance; a case was considered a multivariate outlier if $p < .001$ for the distance value. I identified five multivariate outliers using the Mahalanobis Distance. After identifying five multivariate outliers, I examined the response sets to first determine that the outlying values were not due to recording or responding errors. I then ran the analyses with the outliers removed; there were no changes in the findings, thus, I decided to retain all 452 participants for the regression analyses. When running the regression analyses, I included visual analyses of the residuals to assess for assumptions of normality, linearity, and homoscedasticity of the residuals. The scatterplots of the residuals and predicted scores of the dependent variable demonstrated a normal distribution as shown by data points clustered around the predicted value of zero and becoming more sporadic away from that line, a linear relationship shown by a generally straight line between the residuals and predicted values, and homoscedasticity as shown by the presence of fairly equal scatter around predicted values of the dependent variable.

The means and correlations between the study variables are presented in Table 1. As expected per past research within the domain of career (Duffy et al., 2012; Duffy et al., 2013; Duffy et al., 2015; Jadidian & Duffy, 2012), college-going volition was positively correlated with college-going self-efficacy ($r = .69$) and negatively correlated with perceived educational barriers ($r = -.54$). Additionally, perceived educational barriers were negatively correlated with college-going self-efficacy ($r = -.55$).

Hypothesis 1 predicted that there would be a significant effect of prospective first-generation college student status on college-going volition, specifically that PFGCSs would have significantly lower college-going volition that non-PFGCSs. Before running my analysis, I investigated possible demographic variables that may affect volition: gender, school, and grade. There was no significant difference in college-going volition between genders, $t(409) = -0.74$, $p = .46$. There were no differences in volition scores across the three schools from which the sample was obtained, $F(2, 414) = 2.02$, $p = .13$. I did observe a significant effect of grade on college-going volition, $F(2, 415) = 4.29$, $p < .01$. Post hoc comparisons using the Tukey HSD test indicated that 12th graders ($M = 5.28$, $SD = .91$) reported significantly higher volition scores than 10th graders ($M = 4.93$, $SD = .85$); however, 11th graders ($M = 5.12$, $SD = .94$) did not differ significantly from either of the groups. I therefore included grade level as a covariate in subsequent analyses.

To test the first hypothesis, I conducted a one-way ANCOVA to assess for differences in reported college-going volition between PFGCSs and non-PFGCS, controlling for grade level. The ANCOVA, displayed in Table 2, provided a significant main effect for PFGCS status, $F(1, 415) = 10.10$, $p < .01$, $\eta_p^2 = .024$, indicating that there was an effect of PFCGS status on college-going volition when controlling for the effect of grade on college-going volition. PFGCSs reported lower levels of college-going volition ($M = 4.93$, $SD = .91$) than their non-PFGCS peers ($M = 5.19$, $SD = .89$). The results were statistically significant in support of Hypothesis 1, but the corresponding effect size for the main effect of PFGCS status was small as indicated by the η_p^2 value.

Hypothesis 2 proposed that college-going volition would have a significant, but no more than moderate, negative correlation with perceived barriers to support the two being related

constructs but measuring unique concepts (i.e. volition is not merely measuring lack of barriers) In support of this hypothesis, I found a moderate correlation (r = -.54) in which the two variables demonstrate 29% shared variance and over 2/3 unique variance. Hypothesis 3 predicted that college-going volition would be a significant predictor of college-going self-efficacy beyond perceptions of educational barriers to further support uniqueness. I ran a hierarchical regression, as shown in Table 3, in which perception of educational barriers (Step 1) and college-going volition (Step 2) were regressed on college-going self-efficacy, which provided a measurement of additional variance accounted for (ΔR^2) by college-going volition. In Step 1, perceived educational barriers explained 30.4% of the variance in college-going self-efficacy. The addition of college-going volition in Step 2 accounted for an additional 21.9% of the variance in college-going self-efficacy, $R^2 = .52$, $\Delta R^2 = .22$, $\Delta F(1, 450) = 206.55$, $p < .001$. Together, perception of educational barriers and college-going volition accounted for 52.3% of the variance in college-going self-efficacy, $F(2, 449) = 246.15$, $p < .001$. These results support the hypothesis that college-going volition is a significant unique predictor of college-going self-efficacy, even after accounting for the effect of perceived educational barriers.

Finally, Hypothesis 4, which suggested that perception of educational barriers and college-going volition would interact to provide incremental prediction of college-going self-efficacy, was investigated. Before doing so, centered variables of perceptions of barriers and college-going volition were created by subtracting the mean of the respective variable from each participant's total response. This was done to correct for multicollinearity between each variable and the interaction term. The two centered variables were multiplied together to create the interaction term. This interaction term was added to the hierarchical model utilized for the previous hypothesis. I did not find support for any effect of the interaction between perceived

educational barriers and college-going volition. The total model accounted for 52.5% of the variance in college-going self-efficacy, $F(3, 448) = 164.81$, $p < .001$. However, the interaction between perceived barriers and college-going volition did not add to the predictive capacity of the model, $R^2 = .53$, $\Delta R^2 = .002$, $\Delta F(1, 448) = 1.54$, $p = .22$.

CHAPTER 4: DISCUSSION

In a study with high school students in rural Appalachia, I aimed to understand volition, the perception of the capacity to make choices despite constraints, as it pertains to college-going. I utilized the theories of SCCT (Lent at al., 1994) and the psychology of working (Blustein, 2006) with the intention of further integrating these two theories and increasing the application of psychology of working to high school students in rural Appalachia, a population underrepresented in literature. I found support for the application of a modified version of work volition to measure college-going volition. This measure demonstrated good reliability (α = .85) and demonstrated relationships with SCCT variables that are consistent with the theoretical assumptions and past findings of the original work volition scales (e.g., negative relationship with barriers and a positive relationship with self-efficacy; Duffy et al., 2015; Duffy et al., 2012; Jadidian & Duffy, 2012). Additionally, this study investigated volition relative to students' status as prospective first-generation college students (PFGCSs). To my knowledge, the current study was the first to investigate volition, as it has been conceptualized within the psychology of working framework, related to college-going among high school students and alongside one's status as a PFGCS.

I found support for the hypothesis that those students without a parent who had attended any college (PFGCSs) would report lower levels of college-going volition than those with a parent who had some college education. This suggests that students who have a parent with some college experience feel more able to freely make choices about going to college when considering their own circumstances, or a higher level of perceived power in making the decision to attend or not to attend college. This finding is consistent with Blustein's (2006) proposition that people vary in their degree of volition based upon certain demographic variables - such as

gender and social class - and related findings that support social class as a predictor of work volition (Duffy et al., 2015), especially considering the tendency for PFGCSs to be from lower income households (Gibbons & Borders, 2010). However, also consistent with past research, I did not find any differences by gender (Duffy et al., 2012; Duffy et al., 2013; Duffy et al., 2015; Jadidian & Duffy, 2012). Despite the expectation that demographic variables will relate to varying levels of volition, there have been limits to the significance of such findings, suggesting the need to look at additional demographic characteristics in relation to this construct (Duffy et al., 2015).

The significantly lower college-going volition reported by PFGCSs, compared to their non-PFGCS peers, supports previous findings that PFGCS status is an important characteristic when investigating career and educational development, particularly within a SCCT framework. Researchers have recommended that PFGCS status needs to be considered as a person variable beyond socioeconomic status, gender, and race/ethnicity because of its impact on theoretically-relevant variables such as self-efficacy and outcome expectations (Gibbons & Borders, 2010). PFGCS status brings into consideration parent education level as an added factor that may relate to one's work volition, and thus, an added variable to consider when applying an inclusive framework of education and career, such as the psychology of working framework (Blustein, 2006). However, although statistically significant, the difference in college-going volition between PFGCSs and non-PFGCSs was small, thus, limiting the meaningfulness of these findings. Because the students in the current sample were exposed to an intervention focusing on college-going and STEMM awareness, it will be important to further investigate college-going volition without the impact of an intervention to more accurately assess the size of the affect.

Although the effect was small, the measured differences in college-going volition between PFGCSs and non-PFGCSs support the validity of the measure. Finding that PFGCSs demonstrated lower levels of volition supports the measure's ability to discriminate between individuals that would be expected to experience less power in the college decision-making process based on parent education. As previous research indicates, students whose parents did not attend college are more likely to go straight into the workforce after high school, are likely to perceive more barriers to education, and endorse lower college-going self-efficacy (Gibbons & Borders, 2010; Gibbons et al., 2006); the current results add to our understanding of this population, demonstrating that PFGCSs also report lower levels of college-going volition. Considering the low prevalence of postsecondary education among adults in Appalachia (Pollard & Jacobsen, 2013), the differences in volition based upon parent education level is particularly relevant to this population.

Per previous literature, I aimed to find support for college-going volition as a construct both related to, and distinct from, perceptions of educational barriers (Duffy et al., 2012; Duffy et al., 2015; Duffy et al., 2012). The moderate correlation between the two constructs in the current study provided preliminary support for this idea, as it provides a substantial relationship as well as divergence between the constructs. The two variables had 29% shared variance, and thus, more than 2/3 unshared variance, the latter representing distinctiveness. As such, I proposed that college-going volition would be a proximal influence within the SCCT model that would predict college-going self-efficacy alongside perceptions of educational barriers, another proximal influence. In support of Hypothesis 3, college-going volition and perceptions of educational barriers both accounted for unique variance in college-going self-efficacy, which, taken alongside the correlation between the two variables, provides support for the notion that

these two variables are related but separate constructs (Duffy et al., 2012; Duffy et al., 2015; Duffy et al., 2012).

One might conclude from these findings that while increases in perceptions of barriers relate to decreases in college-going volition, the latter is a separate construct. Students may perceive similar barriers but may feel differently about their abilities in the face of such constraints. In the same vein, people may perceive different constellations of barriers alongside differing perceptions of power over the decision-making process. Further, the variations in these constructs relate to unique variations in college-going self-efficacy. Considering the unique variance in self-efficacy attributable to college-going volition, this variable may be an additional mechanism through which changes in outcomes, such as self-efficacy, may be understood and potentially elicited. In a region with widespread economic disparities and geographic barriers, additional points of influence for educational attainment are warranted as added education and training may provide means of reducing those disparities.

I did not find an interaction between barriers and volition when predicting college-going self-efficacy, suggesting that the effect of barriers on self-efficacy is similar no matter the amount of volition students report. In other words, there is a negative effect of barriers on college-going self-efficacy, but this effect does not differ across students with varying levels of college-going volition. These results suggest an additive effect of college-going volition and perception of barriers when predicting self-efficacy. Efforts to address volition should have the same effect across students regardless of the barriers perceived. Therefore, students appear to have similar opportunities to benefit from interventions, such as the one being implemented with many of the students in the current sample to increase college-going self-efficacy.

Based upon the results of the current study, I found initial support for college-going volition as a proximal influence in the SCCT model. Previous literature has investigated work volition as a moderating influence on the paths between self-efficacy and outcome expectations and self-efficacy and goals (Duffy et al., 2013). The current study investigated the role of college-going volition as a predictor of self-efficacy and a moderator between barriers and self-efficacy. The current study did not find support for a moderating role of college-going volition, but it did support college-going volition as a direct influence on self-efficacy alongside perceived barriers (see Figure 1). Thus, I conclude that volition is not just another way of measuring perceived (or lack of) barriers, but an additional influence, or barrier, on how students feel about the prospect of going to college.

Volition is theorized to be malleable along with other SCCT variables and, being an individual-level variable, might be a viable point of change for interventions (Duffy et al., 2015). When certain barriers cannot be reduced, such as financial constraints, it may be useful to target students' volition and address the way they see themselves in relation to existing barriers. This possibility aligns with the theory behind critical consciousness in relation to sociopolitical barriers. Critical consciousness is an internal and individual-level variable that can be a resource for coping with sociopolitical barriers (Watts, Griffith, & Abdul-Adil, 1999). Diemer and Blustein (2006) even found that components of critical consciousness positively relate to students' progress in career development (e.g., vocational identity, commitment to future careers, and view of work as a larger part of their future lives).

Limitations

There are several limitations to consider when interpreting and applying the findings of the current study. The data used were correlational and cross-sectional, which limits the ability

to make causal claims. This is particularly relevant to the regression tests; I cannot say with certainty what the direction of the relationships between volition, barriers, and self-efficacy are. Longitudinal investigations would help clarify the direction of these relationships, and the role of college-going volition in students' perceptions about college-going.

The current study was done among high school students in rural Appalachia, a unique population that is generally underrepresented in research. These students may also be underrepresented by the scope of traditional career and educational theories. While the composition of the sample was intentional for the overall aim of the project, it limits the generalizability to populations beyond rural Appalachia, as well as to more diverse populations within Appalachia. Students in this region face unique sociocultural and geographic factors, including values of self-reliance and familism, and long travel times to school (deMarrais, 1998; Seal & Harmon, 1995), and thus volition may look different or play a different role. For example, values of family ties and self-reliance might affect the valence of volition items (e.g. prioritizing one's interests may be counter to the important role of the family), or self-reliance might limit endorsement of negative valanced items due to the implication that one would need external assistance. Further investigation of college-going volition, as well as those variations of work volition from which it was modified, with additional student populations who face different constellations of influences on college-going would be useful for such generalization as well as to provide additional points of comparison.

It is necessary to acknowledge that many of the students in the current study had received an intervention aimed to increase college-going perceptions. However, I did not have a sufficiently identified group of students having not received the intervention to control for possible intervention effects. I cannot be certain about the presence of or extent of an impact that

the intervention might have had on the relationships between the study variables. As noted above, future research should examine college-going volition in populations without any intervention and over time with interventions to better understand the potential differences between PFGCSs and non-PFGCSs.

Furthermore, this was the first time that the work volition scale has been modified to be specific to college-going. While the measure demonstrated good reliability and related in expected ways with college-going self-efficacy and perceptions of educational barriers in this population, it is possible that the items from the work volition scale do not adequately capture college-going volition. While career and academics are often conceptualized similarly, such as in SCCT, there may be items that do not translate directly from work to college-going. It is important to continue investigations with this variable to better determine what it looks like with other populations across different contexts.

Implications and Future Directions

The current study aimed to incorporate college-going volition as an added factor of the decision-making process surrounding going to college. Researchers have investigated volition in the context of work and career alongside SCCT variables. Given the parallel domains of education and career when being investigated with SCCT (Lent, Brown & Hackett, 1994), the current explored how volition relates to other SCCT variables within the domain of education. Students' felt power in the decision to go college in the face of the constraints appears to be a variable that differs between students whose parents have attended college and those whose parents have had no college experience (PFGCSs). To my knowledge, this demographic variable has not yet been investigated alongside volition, as conceptualized by the psychology of working, in previous literature. Parent education captures a demographic factor that is not

necessarily measured by family income for SES, but instead access to knowledge and support about college and career pursuits not in the form of income. The findings of the current study suggest that parent education is important to consider within the framework. In a region facing large disparities in academic and vocational attainment influenced by much more than economic means, including sociocultural and geographic influences (Ali & Saunders, 2006; Ali & McWhirter, 2006) it is important to better understand the impact of these disparities and contributing factors, including the lack of adults with college experience.

Moving forward with psychology of working conceptualization and applications, it may be valuable to consider the role of parent education on students' perceptions of decision-making power regarding educational and career pursuits. Based upon the parallel nature of education and career, there is reason to believe that the education of one's parents may also impact volition specific to work. It would be valuable to see how parent education influences people's experiences of work, including perceived work volition, as well as the ability to have their needs of survival and power, social connection, and self-determination met (Blustein, 2006). Assessing work volition among high school seniors and adults in rural Appalachia would further add to the understanding of this concept among a population that would be expected to experience less power in their work-related choices.

Studies looking at work volition suggest that when people perceive higher volition over career decisions, they report higher levels of academic, job, and life satisfaction (Allan, Autin, & Duffy, 2014; Buyukgoze-Kavas, Duffy, & Douglass, 2015; Duffy at al., 2013; Jadidian & Duffy, 2012). This reflects the psychology of working's theory that volition increases the likelihood of meeting higher level needs of work, social connection and self-determination in addition to survival (Blustein, 2006). If one considers education as a parallel domain, higher levels of

college-going volition are likely to lead to increased satisfaction with educational pursuits. Furthermore, education may be seen as more than the associated financial tolls and rewards, and making a volitional choice to go to college may also place students in better positions to face the possibility of education not necessarily securing future job success.

Furthermore, college-going volition, alongside perceptions of educational barriers, predicted college-going self-efficacy. Considering the importance of self-efficacy beliefs, it might be valuable for those working with PFGCSs to consider volition when addressing college-going. One might discuss how students feel about the process and their ability to make decisions in their best interests considering the limiting factors they may face. This could be an empowering process for students and improve their ability to pursue satisfying educational paths. The possibility for such empowerment coincides with previous findings that suggest higher levels of critical consciousness relate to improvements in students' career progress (Diemer & Blustein, 2006). Previous literature also suggests an increased general sense of control as another possible avenue for increasing perceived work volition (Duffy et al., 2015). Therefore, it may be important for interventions to emphasize education and awareness geared toward empowerment beyond the specific domains of interest (e.g. college-going or work) to increase volition over those processes.

It would be informative to investigate college-going volition with behavioral outcomes to better understand the relationship of this variable on the actual choice to attend college, which is a recurring recommendation in past literature with related variables. This would allow us to better understand the impact that volition has on the actual decision to attend college. As volition is theorized to be a malleable variable, it would be helpful to look at changes over time, and specifically in response to interventions, such as the one many of the students in the current

study underwent. It might also be beneficial to look at these changes in relation to barriers and self-efficacy. One might answer whether volition or barriers change more and whether changes in volition predict changes in self-efficacy. Taken together, these results would inform the targeting of future interventions and better inform the predictive capacity of this variable as well as the direction of relationships with related variables.

Conclusions

The current study provided preliminary support for the utility of a measure of volition, as conceptualized from the psychology of working framework, within the domain of college-going. The College-Going Volition Scale distinguished between students without a parent who has obtained any college education (PFGCS) and those who have at least one parent with known college experience. This measure also related in expected ways with SCCT variables included in the study (barriers and self-efficacy). The study supports the notion that people vary in the degree of volition they perceive about college-going based upon their status as perspective first-generation college students (PFGCS), a demographic variable that is prevalent in rural Appalachia and not previously investigated with volition as it is conceptualized by the psychology of working framework.

The current study aimed to add to the literature on college-going perceptions of an understudied group, rural Appalachian high school students, assumed to face more obstacles surrounding the decision to pursue education after high school. Hopefully, the incorporation of volition will provide additional insight into addressing gaps in education among students with more to overcome when considering the possibility of going to college. The inclusion of any form of education or training after high school in the current study further allows the findings to be extended to populations with different expectations of "career" and education, including

military or technical training. Some students might be considering education or training surrounding short-term employment demands as opposed to long-term career aspirations. Even for students not currently considering advanced education, it may still be important to address students' perceptions about the possibility of doing so. Many students may need additional education not previously required to meet the demands of the changing workforce- that which requires increasing levels of knowledge and skills. It is important to understand how students of varying circumstances perceive their situations surrounding college-going, about which the current study provides additional insights through the construct of college-going volition.

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APPENDIX

Table 1.

Means, Standard Deviations, and Intercorrelations Among Study Variables

	PFGCS (n = 153)	non-PFGCS (n = 264)			
Variable	*M (SD)*	*M (SD)*	1	2	3
1. College-Going Volition	4.93 (0.91)	5.19 (0.89)	.86 (.85)	-.58	.72
2. Educational Barriers	1.70 (0.52)	1.58 (0.47)	-.48	.96 (.95)	-.58
3. College-Going Self-Efficacy	2.93 (0.61)	3.17 (0.54)	.65	-.50	.96 (.96)

Note. All correlations significant at the $p < .01$ level. Internal consistency reliability statistics are included on the diagonal; those for non-PFGCS are in parentheses. Correlation coefficients for PFGCS are below the diagonal and those for non-PFGCS are above the diagonal.

Table 2.

ANCOVA for College-Going Volition by PFGCS Status While Controlling for Grade

Source	df	SS	MS	F	η_p^2
Grade	1	9.99	9.99	12.70**	.030
PFGCS status	1	7.94	7.94	10.10**	.024
Error	413	324.72	.79		

**p < .01

Table 3.

Hierarchical Regression Results for the Prediction of College-Going Self-Efficacy

Variable	B	SE	β	ΔR^2	ΔF	dfs
Step 1						
Perception to Educational Barriers (PEB)	-.27	.048	-.23**	.30	196.15**	450
Step 2						
College-Going Volition (CGV)	.37	.025	.56**	.22	206.55**	449
Step 3						
PEB x CGV	.053	.043	.043	.002	1.54	448

Note. The betas presented are from the final step.
**p < .01

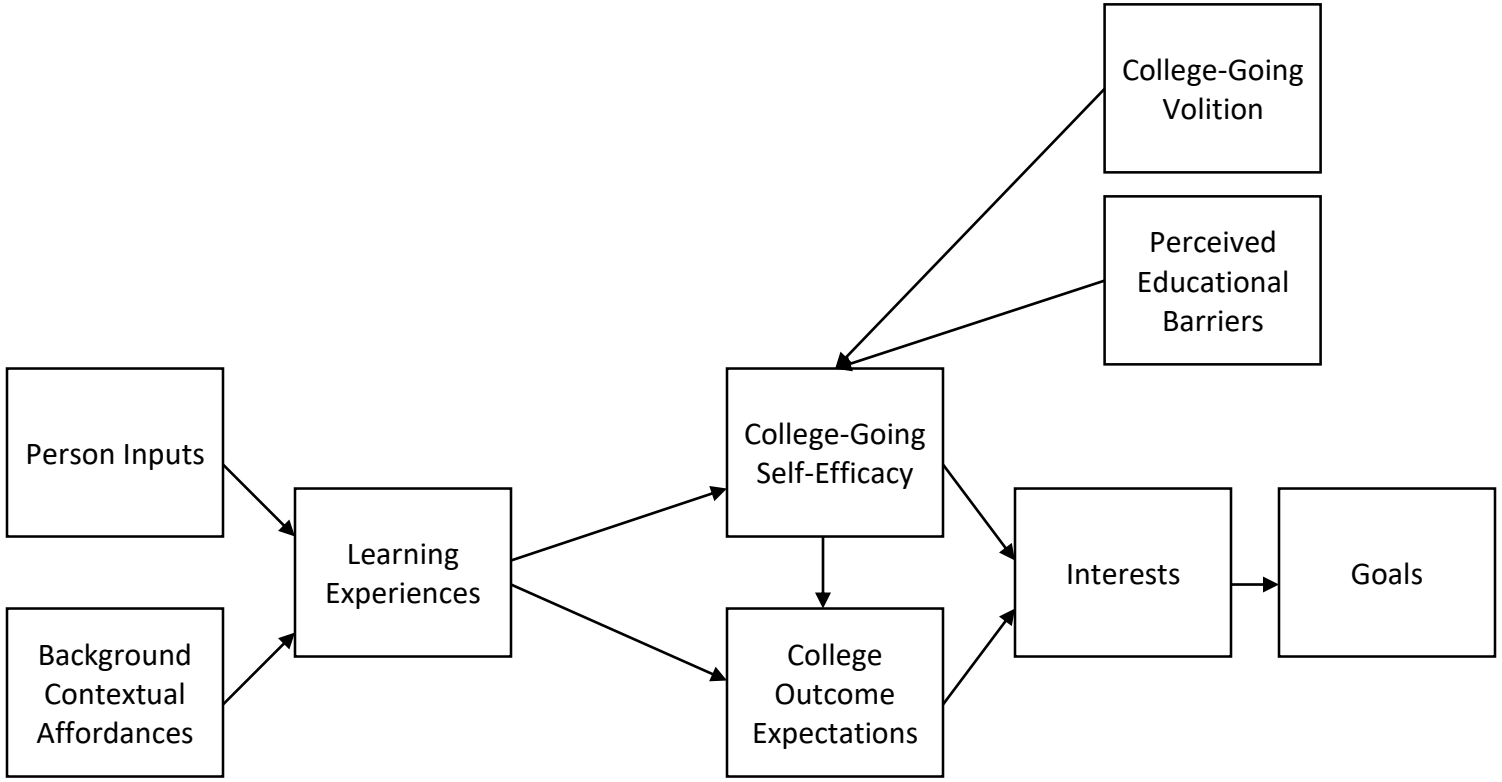


Figure 1. *Hypothesized Role of Volition Within SCCT*

Student Assent
PIPES

Thank you for completing these surveys! Your answers will help us know what parts of the program work best so that we can make PIPES as great as possible for as many students as possible.

In addition to using your answers to understand and improve PIPES, we would also like to use your answers in research that will help us better understand how students' interests, attitudes, and goals change over time. The results of this research will inform us about the best ways to help other students like you with college and career planning. We have already asked your parent or guardian for permission to use your answers in our research, but we will only use your answers if you say yes, you want to be part of this research.

If I say yes, will my answers be confidential?
Yes. Only summaries of answers from lots of students will ever be shared publicly – no one will ever be able to identify your personal answers in any research results that are shared. You entered a code number, not your name, when you started these surveys, so your answers today are not directly linked with your name. The card that has your name and code number will be stored separately from your answers.

Do I have to say yes?
Your participation in this research is voluntary; you may decline to participate without penalty. You can also change your mind any time you want. No one in your class will know if you said yes or no unless you tell them.

What if I have questions?
If you have questions at any time about the project or the procedures, you may contact Melinda Gibbons at 865-974-4477. If you have questions about your rights as a participant, contact the Office of Research Compliance at 865-974-7697.

STUDENT ASSENT:
Please select one of the choices below:

- **YES**, I have read this information and I would like for my survey answers to be used in research.
- **NO**, I do not want my survey answers used in research.

Measures of Study Variables

College-going Volition Scale

Modified from Work Volition Scale-Student Version (Duffy, Diemer, & Jadidian, 2012)
Responses are given on a 7-point Likert Scale ranging from *Strongly Disagree* to *Strongly Agree*

Please indicate the extent to which you agree or disagree with each of the following statements regarding the option of going to college. Even if you are not currently planning on going to college, please respond as if you were to go. When responding, please note that college refers to any formal education after high school (technical school, community college, 4-year university).

1. I will be able to change my course of study in college if I want to.
2. Discrimination will not affect my ability to choose what college I go to.
3. I will easily find a college to go to if I want to.
4. I will be able to choose the college that I want.
5. I will learn to find my own way in college.
6. I feel total control over my choices regarding college.
7. I will be able to go to the college I want, despite external barriers.
8. What I want has little impact on my college choices.
9. In order to provide for my family, I will have to pursue college options I do not enjoy.
10. Due to discrimination, I do not feel I have complete control over going to a college.
11. Due to my financial situation, once I start college, I couldn't change programs even if I wanted to.
12. I feel that my family situation limits the types of college options I might follow.
13. I worry that my life circumstances will prevent me from achieving my long-term educational goals.
14. Due to my financial situation, I will need to pursue any college option I can find.
15. The only thing that matters when choosing a college is to make ends meet.
16. I know I won't like my future college, but it will be impossible for me to find a new one.
17. The college I would like to attend doesn't exist in the area where I live.

Parent/Guardian Education Level for PFGCS-status

1. What is the highest level of education for your mother (or adult female who raised you)?
    a. Less than high school
    b. High school graduate (and did not go to any college or training after high school)
    c. Some college but no degree (took some courses but did not finish)
    d. Postsecondary certificate (specialized training such as cosmetology, HVAC, or police academy)
    e. Two year college graduate (from a school such as Walters State or Pellissippi State Community College)
    f. Four-year college graduate (from a school such as UT or ETSU)
    g. Graduate school (college beyond the four-year college degree such as law school or medical school)
    h. I have no idea my mother's level of education

2. What is the highest level of education for your father (or adult male who raised you)?
    a. Less than high school
    b. High school graduate (and did not go to any college or training after high school)
    c. Some college but no degree (took some courses but did not finish)
    d. Postsecondary certificate (specialized training such as cosmetology, HVAC, or police academy)
    e. Two year college graduate (from a school such as Walters State or Pellissippi State Community College)
    f. Four-year college graduate (from a school such as UT or ETSU)
    g. Graduate school (college beyond the four-year college degree such as law school or medical school)
    h. I have no idea my father's level of education

VITA

Danielle Graham was raised in Grafton, Ohio, by her parents, Tammy and Craig Graham. She has one older sister, Brittany Graham. Danielle attended Midview Elementary, Middle, and High Schools. She obtained a B.A. in Psychology from Kent State University in 2008 and later received her M.A. in Industrial and Organizational Psychology at the University of Akron in 2013. Danielle is currently completing the requirements for her Ph.D. in Counseling Psychology at the University of Tennessee, Knoxville. She will begin her 2000-hour internship at the University of North Carolina at Charlotte in August 2018.