

# Cultural Incongruity Predicts Adjustment to College for Student Veterans

Lisa M. McAndrew  
University at Albany and Veterans Affairs New Jersey  
Healthcare System, East Orange, New Jersey

Sarah Slotkin, Justin Kimber, and Kieran Maestro  
University at Albany

L. Alison Phillips  
Iowa State University

Jessica L. Martin  
University at Albany

Marcus Credé  
Iowa State University

Austin Eklund  
University at Albany

Little is known about what predicts student service members' and veterans' (SSM/V) adjustment to college. In qualitative research, SSM/V report feeling they do not belong and are misunderstood by college communities, a phenomenon that counseling psychologists call cultural incongruity. The goal of the current study was to quantitatively examine the relationship between cultural incongruity and adjustment to college. We surveyed 814 SSM/V about their adjustment to college using the Student Adaptation to College Questionnaire. Cultural incongruity was operationalized in two ways: feelings of not belonging were measured via direct report and the association with adjustment to college assessed with regression. Feelings of being misunderstood about academic barriers were assessed by comparing SSM/V's perceptions of academic barriers and SSM/V's perceptions of how others view the SSM/V's academic barriers and the association with adjustment was assessed using polynomial regression and response surface analysis. Cultural incongruity predicted adjustment to college. After controlling for other known predictors, feelings of not belonging accounted for 18% of the variance in adjustment to college. Polynomial regression showed that feeling understood about academic barriers protected against the negative impact of the barrier on adjustment to college. Cultural incongruity predicts adjustment to college for SSM/V. Helping SSM/V feel their unique barriers to college adjustment are understood may blunt the impact of these barriers.

### **Public Significance Statement**

This study found that feelings of not belonging or feeling misunderstood, what psychologists call cultural incongruity, predicts student veterans' adjustment to college.

*Keywords:* veterans, culture, cultural congruity, adjustment to college, military culture

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Lisa M. McAndrew, Department of Educational and Counseling Psychology, University at Albany, and War Related Illness and Injury Study Center, Veterans Affairs New Jersey Healthcare System, East Orange, New Jersey; Sarah Slotkin, Justin Kimber, and Kieran Maestro, Department of Educational and Counseling Psychology, University at Albany; L. Alison Phillips, Department of Psychology, Iowa State University; Jessica L. Martin, Department of Educational and Counseling Psychology, University at Albany; Marcus Credé, Department of Psychology, Iowa State University; Austin Eklund, Department of Educational and Counseling Psychology, University at Albany.

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Correspondence concerning this article should be addressed to Lisa M. McAndrew, Department of Educational and Counseling Psychology, University at Albany, 1400 Washington Avenue, Albany, NY 12222. E-mail: [lmcandrew@albany.edu](mailto:lmcandrew@albany.edu)

Veterans describe reintegration from military to civilian life as more difficult than combat (Demers, 2011) with high rates of interpersonal difficulties and low quality of life (McAndrew et al., 2013; Yan et al., 2013). For some veterans, these difficulties cascade into a downward spiral that results in unemployment, homelessness, and even suicide (Bossarte et al., 2012; Tran, Canfield, & Chan, 2016). Intervening at the start of these difficulties can improve outcomes. One particularly important early aspect of reintegration is adjustment to college, which refers to the student's ability to adapt to challenges faced in academic settings (Credé & Niehorster, 2012). Adjustment to college is highly predictive of academic performance, retention in college (Credé & Niehorster, 2012), and long-term employment. Thus, improving adjustment to college can improve academic outcomes for the approximately one million United States student service members/veterans (SSM/V) and, over time, may improve long-term reintegration outcomes.

Research has identified individual risk factors of poor reintegration, particularly posttraumatic stress disorder (PTSD) that reduce reintegration outcomes, particularly posttraumatic stress disorder (PTSD; Haller, Angkaw, Hendricks, & Norman, 2016; Sayer et al., 2010). Intervening to improve these targets, however, does not lead to better reintegration. e.g., treatment for PTSD reduces symptoms of PTSD, but does not resolve poor reintegration (Schnurr, Lunney, Bovin, & Marx, 2009). This is likely because focusing on remediating individual risk factors ignores the contextual factors influencing reintegration, including the individual's fit with their environment.

### In Student Veterans' Own Words

Our interest in understanding SSM/V's fit within the college environment began when we met with members of the SSM/V community who reported the college community didn't understand them. Interested in learning more, we reviewed the literature and found that their descriptions are consistent with qualitative research where SSM/V describe feeling they do not belong due to their military experience (Barry, Whiteman, & MacDermid Wadsworth, 2014). As one student commented, "It's tough to connect with people and that's why I do hang out with army buddies" (Bauman, 2013, p. 50). Another stated, "I actually don't really like to stand out too much. I'm growing my hair out more . . . I don't like to give the jarhead appearance, because I am in college here and I want to be a college student" (DiRamio, Ackerman, & Mitchell, 2008, p. 88).

SSM/V also describe feeling misunderstood. As one student veteran said, "The biggest thing that I want to come into this interview and say is . . . the faculty need to know who we are . . ." (DiRamio et al., 2008, p. 89). SSM/V want to have social interactions with "people who understand what [they've] been through" (Olsen, Badger, & McCuddy, 2014), p. 105). In particular, SSM/V indicate a lack of understanding of their unique academic barriers. For example, some describe an inadequate number of handicapped parking spaces for returning student veterans with disabilities (DiRamio et al., 2008), needing additional support to navigate using the GI Bill, and having PTSD and other postdeployment health concerns that can interfere with academic tasks (DiRamio et al., 2008).

The few quantitative studies on SSM/V's experiences have operationalized these difficulties as lack of social support, or lack

of an important other to rely on for emotional and instrumental assistance (Fredman et al., 2019; Whiteman, Barry, Mroczek, & MacDermid Wadsworth, 2013). These studies find that SSM/V report difficulties connecting with people in a meaningful way (Barry et al., 2014) and have lower levels of perceived social support than civilian students. Social support is predictive of SSM/V's academic outcomes including GPA, academic motivation, and persistence in college (Fredman et al., 2019; Whiteman et al., 2013). However, social support does not fully capture SSM/V's qualitative descriptions of not belonging and feeling misunderstood, which we propose is better encompassed by the concept of cultural incongruity.

### Cultural Incongruity

Cultural congruity describes the fit of an individual's cultural values, beliefs, and expectations with their environment (Cano, Castillo, Castro, de Dios, & Roncancio, 2014). Students who belong to more than one culture experience cultural incongruity if they are unable to reconcile each culture's values, beliefs, and expectations with one another (Cervantes, 1988). SSM/V may experience cultural incongruity due to difficulties reconciling their military identity with a campus environment that is not always sensitive to their experiences (Barry et al., 2014). The result of experiencing cultural incongruity is that the student may feel that they have to either "mute" their veteran identity in order to succeed or let their academics suffer (Gloria & Kurpius, 1996).

The impact of cultural incongruity on academic outcomes has primarily been examined among students of color (Cano et al., 2014; Choi-Pearson & Gloria, 1995; Gloria & Kurpius, 1996). For example, for Native American students, the simple act of pursuing higher education may introduce cultural incongruity due to values associated with higher education that are closely tied to White American norms (e.g., individualism, competition, autonomy) and that run counter to Native American cultural values (e.g., mutualism, listening preferred over speaking, present focus (Tierney, 1992). Some Native American students may therefore find it difficult to verbally participate in class, work independently on schoolwork, and compete with fellow students, as these behaviors conflict with Native American cultural values. Similarly, some Latinx students report having to "act White" to fit in at college (Gloria, Castellanos, & Orozco, 2005). The more cultural incongruity Latinx students feel in the university environment, the lower their perceived well-being and the more likely they are to withdraw from college (Gloria, Castellanos, Lopez, & Rosales, 2005).

Applying the aforementioned findings among students of color to SSM/V, we reason that SSM/V may experience cultural incongruity between military culture and the dominant college culture. Most scholars agree that military life is highly structured and proscribed; day-to-day life includes few opportunities to exercise individual choice (Redmond et al., 2015). In contrast, the life of a college student is often highly unstructured: students make decisions throughout their day as to how they will spend their time (e.g., to attend or skip class, to socialize or spend time alone). Military culture also places a high emphasis on group identity formation via common hair, dress, and daily living activities (Redmond et al., 2015), which differs from the dominant culture of higher education that emphasizes personal growth through individual identity formation. SSM/V also have intersecting identities

that may contribute to feelings of cultural incongruity as compared with traditional college students, such as psychological or physical disabilities and being a parent or partner (Campbell & Riggs, 2015). Research on whether cultural incongruity is an important predictor of adjustment to college for SSM/V is needed to advance knowledge about potential areas in which to intervene to improve SSM/V's adjustment to college. It will also improve our theoretical understanding of how individual and environmental factors interact to influence academic adjustment.

### Advances to Theory

Cultural incongruity has been assessed as the individual's feeling of not belonging. That is, their perceived fit with the environment. In general, person-environment fit is a strong predictor of better outcomes in occupational and educational settings (Edwards, 2008). Person-environment fit is a multidimensional construct with the most commonly researched dimensions being person-organization fit, person-vocation fit, and person-job fit (Edwards, 2008). Research on person-culture fit (i.e., cultural incongruity) is a nascent field that was developed in response to calls for a better understanding of culture as an aspect of person-environment fit (Chuang, Hsu, Wang, & Judge, 2015). While initial work on cultural incongruity supports it as a predictor of academic outcomes (Gloria & Castellanos, 2003) there is a need for research on for whom cultural congruity is important and if cultural incongruity is comprised of more than feelings of not belonging.

Assessing the relationship between cultural incongruity and academic outcomes among SSM/V will inform if person-culture fit is important for individuals from a culture that values the collective over the individual (i.e., military culture). Thus far, research on person-environment fit, (including person-culture fit) has been conducted primarily among individuals from individualistic cultures. There is initial evidence that while person-environment fit is important across cultures, there are qualitative and quantitative differences in which domains of fit are important (Oh et al., 2014). For example, a qualitative study on person-environment fit among Chinese employees found that relational fit is particularly important with the individual seeking to cultivate harmonious relationships and wanting to be understood by others (Chuang et al., 2015). That is, in collectivist cultures, cultural incongruity appears to be particularly important and may include more than feelings of not belonging, it may also include feeling misunderstood.

Qualitative research supports that for SSM/V, cultural incongruity also includes feeling misunderstood. Laing, Phillipson, and Lee (1973) proposed that feeling misunderstood develops when there is incongruence between Person A's perception of their situation and what they think Person B thinks about Person A's situation (Laing, Phillipson, & Lee, 1966). In other words, if I think you think about my situation differently than I do, I will feel misunderstood. For most people, feeling misunderstood within specific interpersonal relationships (e.g., with your spouse) is an important predictor of worse relationship quality, satisfaction, and behavior (Lun, Kesebir, & Oishi, 2008; Reis, Lemay, & Finke-nauer, 2017). What is not known is if feeling misunderstood by others, generally (as opposed to a specific person), is also predictive of poorer outcomes. If feeling misunderstood by others, generally, was found to be predictive of outcomes, it would suggest

opportunities to extend our knowledge of feeling misunderstood to the theory of person-environment fit.

### Current Study

We sought to test the application of cultural incongruity to adjustment to college for SSM/V to generate new knowledge about how to improve SSM/V's adjustment to college and advance theory. Cultural incongruity was measured in two ways. First, we assessed if SSM/V feel they do not belong due to their military culture using a validated scale, the Cultural Congruity Scale (CCS). Second, we assessed if SSM/V feel misunderstood about their unique academic barriers using polynomial regression and response surface analysis. Advances in statistical methods also provide opportunities to graph in three dimensions (Person A's perspective of their situation and what Person A thinks Person B thinks about person's A's situation) by using polynomial regression and response surface analysis (Figure 1; Phillips, 2013). To our knowledge, these advance techniques have not yet been applied to research on feeling misunderstood.

The current study tests the following hypotheses regarding cultural incongruity: (a) feeling they do not belong, assessed with a validated scale, will predict SSM/V's adjustment to college, even after controlling for known predictors of adjustment to college (i.e., social support, PTSD symptoms); and (b) feeling misunderstood, operationalized as incongruence between SSM/V's perceptions about their academic barriers (self-perceived barriers) and their estimate of others' perceptions about the SSM/V's academic barriers (other-perceived barriers) will be negatively related to college adjustment, with a greater degree of incongruence being associated with lower levels of adjustment. Further, we hypothesized that the direction of incongruity would matter, such that adjustment would be lower when self-perceived barriers were greater than other-perceived barriers.

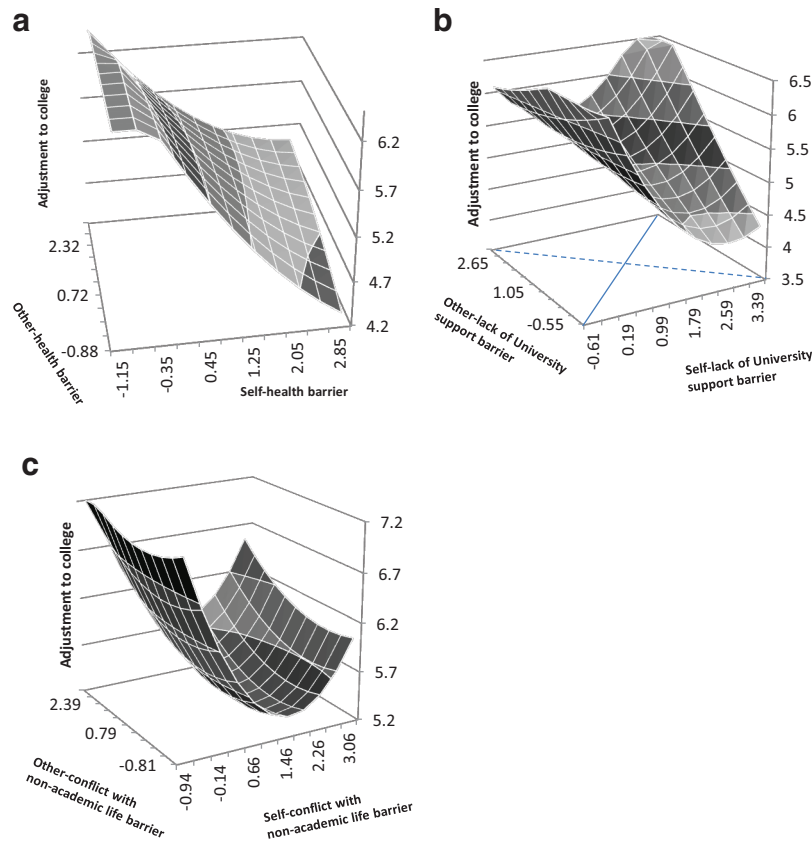
### Method

#### Participants

To be eligible for the study, participants had to (a) self-identify as SSM/V, (b) been enrolled in classes at the start of participation, and (c) been 18 years of age or older. There were 1,151 who consented and 851 unique participants who participated (answered at least 1 question). The final sample included 814 SSM/V after excluding those not currently enrolled in classes ( $n = 36$ ). Data were not imputed as less than 0.8% was missing. The final sample was, on average, 34.66 years old ( $SD = 10.44$ ; range = 18–84). SSM/V reported an average GPA of 3.37 with 92% reporting a GPA of 3.0 or higher. SSM/V described missing, on average, 1–10% of their classes per semester and generally thought it was unlikely they would withdraw from school. Further demographic information is listed in Table 1.

#### Procedure

Recruitment emails were sent to local chapter representatives of the Student Veterans of America (SVA), a national organization supporting SSM/V in higher education, with the request that they distribute the link to the online survey to their members. The



*Figure 1.* Relationship of self-perceived barriers and other-perceived barriers on adjustment to college. (a) Relationship of congruence of self-nonacademic life as a barrier and other-nonacademic life as a barrier on adjustment to college, (b) relationship of congruence of self-health as a barrier and other-health as a barrier on adjustment to college, and (c) relationship of congruence of self-lack of university support as a barrier on adjustment to college. The dashed line in (b) represents the line of incongruence and the solid line in (b) represents the line of congruence. Self-barrier = veteran's perception of their barriers; other-barrier = what the veteran thinks others think about the veteran's barrier. See the online article for the color version of this figure.

survey link was also sent to colleagues in academic settings for distribution to SSM/V who may attend a school without a chapter of the SVA. Emails were sent from September 2015 through March 2017. Relevant institutional review boards provided approval and informed consent was administered to all participants. Snowball sampling was used such that upon completion of the survey, participants were asked to distribute the survey link to fellow SSM/V. Compensation for participation consisted of entry into a raffle for approximately 30 iPad Mini devices.

## Measures

**Adjustment to college.** Adjustment to college was measured by the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984), the most widely used measure of student adjustment to college (Crede & Niehorster, 2012). The SACQ is a 67-item self-report questionnaire that reports overall adjustment to college as well as four subdomains of adjustment: academic, social, personal-emotional, and institutional (Baker & Siryk, 1999). Participants are instructed to rate "how well each item applies to them at the

present time" on a 9-point Likert-type scale ranging from 0 (*doesn't apply to me at all*) to 9 (*applies very closely to me*). Example items include "I am enjoying my academic work at college." Raw scores are converted to *T* scores, with higher scores reflecting better academic adjustment.

Internal consistency reliability has been demonstrated to be sufficient across a variety of college student populations (Baker & Siryk, 1999). The Cronbach's alpha for the full scale in the current sample was .95. The SACQ has demonstrated convergent and discriminant validity with other measures of academic functioning and psychological well-being as well as associations with academic success (Crede & Niehorster, 2012). In the current sample, the correlation between the subscales and the full scale were all above  $r = .80$  and the pattern of results were the same for all of the subscales as compared with the full scale. Therefore, we only report results from analyses using the full scale.

**Perceived barriers to academic success.** Participants were asked to indicate "how much the following have negatively im-

Table 1  
Demographic Description of Sample

Variable	n (%)
Gender	
Male	563 (69.2)
Female	245 (30.1)
Other gender	3 (.4)
Ethnicity	
Latinx	84 (10.3)
Race	
White/Caucasian	620 (76.2)
Black/African American	75 (9.2)
American Indian/Alaskan Native	35 (4.3)
East Asian/Asian American	23 (2.8)
South Asian/Indian American	3 (.4)
Middle Eastern/Arab American	5 (.6)
Native Hawaiian/Other Pacific Islander	13 (1.6)
Other race	23 (2.8)
Employment	
Full-time	679 (83.4)
Part-time	132 (16.2)
Academic status	
Nonmatriculated	3 (.4)
In person	406 (49.9)
Online	65 (8.0)
Combination of in person/online	342 (42)
Combat	
Combat deployed	458 (56.3)

pacted YOUR academic success in the past 6 months” and “how much OTHERS think that the following have negatively impacted YOUR academic success in the past 6 months.” Items were anchored by a 5-point Likert-type scale (1 = *No Negative Impact* to 5 = *Extremely Negative Impact*). That is, we asked participants to report the degree of negative impact they perceived each barrier had on their academic success (self-barrier; what Person A thinks about their barriers). Then, we asked them to report their perceptions of the degree of negative impact that others believe each of the same barriers had on their academic success (other-barrier; what Person A thinks Person B thinks about Person A’s barriers).

Exploratory factor analyses of both versions of the scales, using principal axis factoring and an oblique rotation, in combination with the results of a parallel analysis (O’Connor, 2000) indicated the presence of three identical factors in both versions of the scale. Confirmatory factor analysis using robust maximum likelihood estimation in the LISREL 8.80 statistical package (Jöreskog & Sorbom, 2004) was used to more formally assess the degree to which a three-factor solution was preferable relative to two more parsimonious structures: (a) a single-factor model, and (b) the most likely two-factor model. For self-perceived barriers the three-factor model exhibited good fit in an absolute sense ( $\chi^2 = 745.17$ , degrees of freedom [*df*] = 149,  $p < .001$ , root-mean-square error of approximation [RMSEA] = .070, comparative fit index [CFI] = .97, TLI = .97, standardized root-mean-square residual [SRMR] = .060), and fit that was significantly better than the fit of either the single-factor model ( $\Delta\chi^2 = 676.31$ ,  $\Delta df = 3$ ,  $p < .001$ ) or the most plausible two-factor model ( $\Delta\chi^2 = 245.78$ ,  $\Delta df = 2$ ,  $p < .001$ ). Similarly, for the ratings of how respondents believed others to view their barriers the three-factor model exhibited good fit in an absolute sense ( $\chi^2 = 621.43$ ,  $df = 149$ ,  $p < .001$ , RMSEA = .062, CFI = .98, TLI = .98, SRMR = .057) and

fit that was significantly better than the fit of either the single-factor model ( $\Delta\chi^2 = 599.71$ ,  $\Delta df = 3$ ,  $p < .001$ ) or the most plausible two-factor model ( $\Delta\chi^2 = 196.37$ ,  $\Delta df = 2$ ,  $p < .001$ ).

The first factor, physical and mental health concerns, was represented by four items that reflect physical and emotional health concerns: anxiety or depression, memory or attention problems, pain or poor physical health, and a general lack of confidence ( $\alpha$  for self-physical and mental health barriers = .85;  $\alpha$  for other-physical and mental health barriers = .87). The second factor, lack of university support, was represented by eight items that reflect a lack of support and meaning: being treated differently, an inability to find meaning in courses, a lack of support from the university, a lack of support from teachers, poor attitudes about the student’s ethnicity, an absence of a mentor, and others’ perception of the SSM/V’s mental health ( $\alpha$  for self-lack of university support barriers = .87;  $\alpha$  for other-lack of university support barriers = .89). The third factor, conflict with nonacademic life, was represented by seven items that reflect concerns about the conflict between academic demands and nonacademic demands: an excessive workload, having to work while going to school, a lack of financial resources and support, a lack of family support, having children, not being adequately prepared, and concerns about their primary relationship ( $\alpha$  for self-conflict with nonacademic life barriers = .78; other-conflict with nonacademic life barriers = .84). Items within each factor were summed, we then transformed the variables using the square root method to normalize the data as the barriers were positively skewed (i.e., most SSM/V reported few barriers).

**Cultural incongruity.** Cultural incongruity was measured via the CCS (Gloria & Kurpius, 1996). The CCS is a 13-item measure developed to assess students’ cultural fit within a college environment. Items were measured on a 7-point Likert-type scale from 1 (*Not at all*) to 7 (*A Great Deal*). The CCS has been used to measure Chicanos/as (Gloria & Kurpius, 1996), African American, and Asian American undergraduate students’ experiences in college (Gloria & Castellanos, 2003; Gloria & Ho, 2003; Gloria, Kurpius, Hamilton, & Willson, 1999). The resulting Cronbach’s alpha for total scores was .90. We reverse scored final scores (average of item scores) so that the variable would represent cultural incongruity rather than cultural congruity.

**Social support.** The Patient-Reported Outcomes Measurement Information System (PROMIS) Short Form v2.0–Emotional Support 4a scale was used to measure participant’s perception of their level of social support and was controlled for in analyses because it is a known predictor of college adjustment (Hahn et al., 2010). This National Institutes of Health-generated four-item scale asks participants to rank their perceived feelings of being cared for and valued by others and having confidant relationships on a 5-point Likert-type scale (1 = *Never*, 5 = *Always*). Sample items include: “I have someone who will listen to me when I need to talk,” “I have someone to confide in or talk to about myself or my problems.” Responses are summed with higher scores representing more perceived social support. The measure produces scores that have exhibited good content, cross-sectional, and clinical validity (Cella, Beaumont, et al., 2010; Cella, Riley, et al., 2010; Rothrock et al., 2010). Cronbach’s alpha for total scores on this measure was .96 in our sample.

**PTSD.** The four-item Primary Care Post-Traumatic Stress Disorder is a screen for PTSD. We included it as a control variable

since PTSD is known to impact community reintegration for veterans. Items include: "Have had nightmares about [the trauma] or thought about it when you did not want to?"; "Tried hard not to think about [the trauma] or went out of your way to avoid situations that reminded you of it"; "Were constantly on guard, watchful, or easily startled"; "Felt numb or detached from others, activities, or your surroundings?" The range of scores is 0–4; validity of scores on this screener has been shown in military and civilian populations (Cameron & Gusman, 2003; van Dam, Ehring, Vedel, & Emmelkamp, 2010). Cronbach's alpha for total scores on this measure was .87 in our sample.

## Analysis

We explored the relationships between adjustment to college and age (Laanan, 1996), gender (Holmbeck & Wandrei, 1993), and race and ethnicity (Fischer, 2007), social support and PTSD symptoms as previous studies suggested these variables may be related to adjustment to college. Age,  $r = .14$ ,  $p < .01$ , social support,  $r = .48$ ,  $p < .01$  and PTSD,  $r = -.44$ ,  $p < .01$  were statistically related to adjustment to college and were statistically controlled for in analyses. We ran bivariate correlations between the other variables of interest. Then, hierarchical regression analyses were conducted to determine if cultural incongruity (feeling they do not belong) was significantly associated with adjustment to college after accounting for the variance explained by age, social support, and PTSD. Cultural incongruity was added in a separate step from the other variables to determine the amount of unique variance it accounted for by observing the change in  $R^2$  on the step where it was included.

Polynomial regression and response surface analysis were used to explore if feeling misunderstood about academic barriers was significantly associated with adjustment to college. This approach allowed us to graph in three-dimensional space SSM/V's self-perception of their academic barriers [self-perceived barriers] and SSM/V's perceptions of how others perceive the SSM/V's academic barriers [other-perceived barriers] as well as determine the level of adjustment to college for all combinations of self-perceived barriers and other-perceived barriers (McAndrew et al., 2017). Questionnaires that simply ask if the participant feels misunderstood are limited in that this approach does not tell what direction and level of misunderstanding is associated with outcomes. Polynomial regression and response surface methodology allow us to explore the degree to which the relationship between SSM/V's perceived academic barriers and adjustment to college is dependent on SSM/V's perception of other's view of SSM/V's academic barriers (i.e., the degree and direction of feeling misunderstood).

Exploratory polynomial regression is conducted as follows: In the first step, called the linear model, the centered independent variables ( $X =$  SSM/V's self-perception of their academic barriers [self-perceived barriers] and  $Y =$  SSM/V's perceptions of how others perceive the SSM/V's academic barriers [other-perceived barriers]) are entered to predict the outcome ( $Z =$  adjustment to college). The second step of the regression model is the quadratic model and includes  $X^2$ ,  $XY$ , and  $Y^2$ . The third step is the cubic model and includes  $X^3$ ,  $XY^2$ ,  $X^2Y$ , and  $Y^3$ . When the cubic model is significant, a fourth step, the quartic model, is tested. The statistical significance for each step is examined and the last step

where the change in  $R^2$  is statistically significant is the step that is interpreted. For the current study, the quadratic model was always the last significant model (the best-fitting model; Edwards, 2002) and therefore the regression coefficients from the second step (the quadratic model) were used to create the response surface analysis graph (Edwards, 2002; Phillips, 2013; Shanock, Baran, Gentry, Pattison, & Heggstad, 2010). We explored the analyses for outliers and the heterogeneity of the residuals. In this analysis approach, polynomial regression is used to create the response surface, but response surface analysis is used to statistically test hypothesized relationships between variables.

In the response surface for the current study (see Figure 1), the  $x$ -axis is self-perceived barriers, the  $y$ -axis is other-perceived barriers and the  $z$ -axis is adjustment to college. To interpret the graphs, one looks along the line of incongruence and the line of congruence. The line of incongruence is the diagonal line when  $X = -Y$  or self-perceived barriers are different than other-perceived barriers (dashed line in Figure 1b). The line of congruence is the diagonal line when  $X = Y$  (solid line in Figure 1b) or self-perceived barriers are the same as other-perceived barriers. When the model is quadratic (as is the case in the current study), one can examine the slope and curvature along the line of congruence and line of incongruence (Edwards, 2002; Phillips, 2013; Shanock et al., 2010) to evaluate the theoretical hypotheses. The calculation and testing of the slopes and curvatures of the surface along these lines of interest, at the point of origin (when  $X$  and  $Y$  both equal zero), is done using readily available resources online (see supplemental material for Phillips, 2013 and Shanock et al., 2010, as well as J. Edwards' website: <http://public.kenan-flagler.unc.edu/faculty/edwardsj/>).

We hypothesized that greater incongruity between self-perceived and other-perceived barriers (greater degree of incongruence between  $X$  and  $Y$ ) would be associated with poorer adjustment to college. This is equivalent to hypothesizing that the curvature of the surface along the line of incongruence will be negative (i.e., the outcome decreases whenever  $X$  and  $Y$  become discrepant from each other, regardless of whether  $X > Y$  or vice versa). Further, we hypothesized that the direction of incongruity would matter, such that college adjustment would be lower when self-perceived barriers were greater than other-perceived barriers. This is equivalent to hypothesizing a negative slope along the line of incongruence (the slope is measured at the point of origin, when both  $X$  and  $Y$  are at their midpoint, or zero, since they are centered). Lastly, we expected that adjustment would be lower whenever SSM/V perceive barriers, even when they feel understood by others regarding these barriers; therefore, we expect adjustment to decrease as  $X$  and  $Y$  (self- and other-perceived barriers) both increase. This is equivalent to hypothesizing that the slope of the surface will be negative along the line of congruence (when  $X = Y$ ).

## Results

### Descriptive and Regression Analyses

SSM/V reported a mean PROMIS social support score that is similar to a population with high levels of chronic illness (Rothrock et al., 2010). SSM/V's score on the validated measure of cultural incongruity (defined as feeling they do not belong) indi-

cated that, on average, they slightly agreed that they experience cultural congruity. SSM/V generally perceived experiencing greater academic barriers than they thought others perceived them experiencing. That is, on average, SSM/Vs reported that they perceived others to underestimate their actual barriers. SSM/V perceived most academic barriers as having a small negative impact on their academic adjustment. The means, standard deviations, and ranges are reported in Table 2.

The bivariate correlations showed a strong correlation between greater cultural incongruity, defined as feelings of not belonging and worse adjustment to college (all correlations are in Table 2). Regression analyses were consistent with the bivariate correlations. After controlling for age, social support, and PTSD, greater cultural incongruity, defined as feelings of not belonging, was associated with poorer adjustment to college,  $F_{(4,759)} = 210.14$ ,  $p < .01$ ,  $R^2 = .52$  (Table 3).

**Polynomial Regression and Response Surface Analyses**

To understand if cultural incongruity defined as feeling misunderstood about academic barriers was related to adjustment to college, we ran three sets of polynomial regression analyses and response surface analyses, corresponding to the three types of barriers (Figure 1a–1c). Results of each set of analyses for each of the three barriers follows (Table 4; Figure 1a–c).

**Physical and mental health barriers.** The quadratic model of the polynomial regression analysis was the final, best-fitting model ( $F_{(3,793)} = 8.90$ ,  $p < .001$ ,  $R^2$  change = .02; see Figure 1a, Table 3). The response surface analysis created from the polynomial regression can be interpreted as follows. The curvature of the surface along the line of incongruence was not significant ( $t = -0.25$ ,  $p = .80$ , curvature =  $-0.02$ ), indicating that adjustment did not decrease simply due to incongruity. The direction of incongruity is what mattered: namely, there was lower adjustment to college when self-perceived physical and mental health barriers were greater than SSM/V’s perceptions of other-perceived physical and mental health barriers. This is supported by the significant negative slope of the surface along the line of incongruence ( $t = -6.79$ ,  $p < .001$ , slope =  $-0.70$ ). There was also lower adjustment to college when self-perceived physical and mental

Table 3  
Regression Analysis Predicting Adjustment to College

Variable	Adjustment to college				$\Delta R^2$
	$\beta$	SE	$\beta$	p	
Step 1					
Age	.02	.00	.14	.00	.35*
Social support	.11	.01	.38	.00	
PTSD	-.24	.02	-.32	.00	
Step 2					
Age	.00	.00	.03	.31	.18*
Social support	.06	.01	.21	.00	
PTSD	-.12	.02	-.16	.00	
Cultural incongruity-feeling they don’t belong	-.37	.00	-.52	.00	

Note. PTSD = posttraumatic stress disorder symptoms.  
\*  $p < .01$ .

health barriers and other-perceived physical and mental health barriers were both high as compared with when they were both low; the slope of the surface along the line of congruence was negative and significantly greater than zero ( $t = -15.79$ ,  $p < .001$ , slope =  $-0.79$ ). Adjustment to college was higher when both self-perceived physical and mental health barriers and other-perceived physical and mental health barriers were either high or low as compared with when they were both in the middle range; there was a significant curvature to the line of congruence ( $t = 3.54$ ,  $p < .001$ , curvature = 0.15).

Taken together, the results find that greater self-perceived physical and mental health barriers are associated with poorer adjustment to college. Congruence between self-perceived and other-perceived physical and mental health barriers somewhat protects against the negative impact of high self-perceived physical and mental health barriers on poorer adjustment to college.

**Lack of university support barriers.** The quadratic model of the polynomial regression analysis was the last significant step,  $F_{(3,792)} = 37.34$ ,  $p < .001$ ,  $R^2$  change = .09 (see Figure 1b and Table 3). The response surface analyses created from the polynomial regression can be interpreted as follows. The curvature of the surface along the line of incongruence was not significant ( $t =$

Table 2  
Descriptive and Bivariate Correlations\*

Variable	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10
1. SACQ	1.96	8.74	6.18	1.20	.95									
2. Cultural incongruity	1	6.77	3.30	1.30	-.68	-.90								
3. Social support	25.70	62.00	52.06	10.11	.48	-.45	.96							
4. PTSD	.00	4.00	1.39	1.61	-.44	.43	-.32	.87						
5. Self-health barriers	1	5	2.15	1.06	-.60	.42	-.32	.52	.85					
6. Self-university barriers	1	5	1.61	.73	-.54	.59	-.35	.41	.67	.87				
7. Self-nonacademic barriers	1	5	1.94	.76	-.42	.25	-.26	.26	.62	.58	.78			
8. Other-health barriers	1	5	1.88	1.07	-.41	.27	-.21	.40	.69	.50	.51	.87		
9. Other-university barriers	1	5	1.55	.73	-.37	.35	-.19	.33	.55	.68	.54	.75	.89	
10. Other-nonacademic barriers	1	5	1.81	.83	-.30	.17	-.15	.23	.47	.43	.71	.67	.74	.84

Note.  $\alpha$ s are reported along the diagonal; SACQ = Student Adaption to College Questionnaire; PTSD = posttraumatic stress disorder symptoms; self-health barrier = self-physical and mental health concerns barriers; self-university barriers = self-lack of university support barriers; self-nonacademic barrier = self-conflict with nonacademic life barriers; other-health barriers = other physical and mental health barriers; other-university barriers = other-lack of university support barriers; other-nonacademic barriers = other-conflict with nonacademic barriers.

\*  $r > .09$ ,  $p < .01$ .

Table 4  
*Polynomial Regression Analyses of Difference of Self-Perception of Barriers and Other-Perception of Barriers Predicting Adjustment to College<sup>a</sup>*

Variable	Dependent variable = Adjustment to college											
	X (self-physical and mental health barriers); Y (other-physical and mental health barriers)				X (self-lack of university support barriers); Y (other-lack of university support barriers)				X (self-conflict with nonacademic life barriers); Y (other-conflict with nonacademic life barriers)			
	B (SE)	β	T	ΔR <sup>2</sup>	B (SE)	β	T	ΔR <sup>2</sup>	B (SE)	β	T	ΔR <sup>2</sup>
Step 1												
X	-2.05 (.13)	-.60	-15.42*	.36*	-2.51 (.19)	-.54	-13.24*	.29*	-1.92 (.21)	-.42	-9.17*	.17*
Y	.00 (.13)	.00	.03		.01 (.19)	.00	.07		0 (.19)	0	0	
Step 2												
X	-2.03 (.15)	-.59	-13.83*	.01*	-3.15 (.24)	-.68	-12.96	.06*	-2.25 (.23)	-.49	-9.83*	.03*
Y	-.17 (.16)	-.05	-1.06		-.59 (.24)	-.13	-.25*		-.15 (.22)	-.04	-.71	
X <sup>2</sup>	-.01 (.41)	-.00	-.02		1.35 (.66)	.13	2.05*		1.91 (.73)	.15	2.61*	
XY	.93 (.44)	.12	2.13*		2.12 (.76)	.19	2.78*		.38 (.87)	.03	.44	
Y <sup>2</sup>	-.13 (.41)	-.02	-.31		.61 (.58)	.06	.30		.45 (.58)	.04	.78	

Note. The slopes and curvatures of these calculated lines are in the Results section. B = unstandardized regression weight; SE = standard error; ΔR<sup>2</sup> = change in R<sup>2</sup> for each step—the change is incremental and the total R<sup>2</sup> increases with each step; X = self-perceived barriers; Y = other-perceived barriers. <sup>a</sup>The regression coefficients are not directly interpretable but are used to calculate the lines of congruence (when self-perceived barriers are the same as other-perceived barriers) and incongruence (when self-perceived barriers are different than other-perceived barriers). \* p < .05.

0.45, p = .65, curvature = 0.06), indicating that adjustment did not decrease simply due to incongruity. Again, the direction of incongruity is what mattered: namely, there was lower adjustment to college when self-perceived lack of university support barriers were greater than SSM/V's perceptions of other-perceived lack of university support barriers; the slope of the surface along the line of incongruence was significant and negative (t = -6.55, p < .001, slope = -1.08). There was also lower adjustment to college when self-perceived lack of university support barriers and other-perceived lack of university support barriers were both high as compared with when they were both low; the slope of the surface along the line of congruence was negative and significantly greater than zero (t = -17.08, p < .001, slope = -1.44). Adjustment to college was higher when both self-perceived lack of university support barriers and other-perceived lack of university support barriers were either high or low as compared with when they were both in the middle range; there was a significant positive curvature to the line of congruence (t = 8.80, p < .001, curvature = 0.53).

Taken together, the results find that greater self-perceived lack of university support is associated with poorer adjustment to college. Congruence between self-perceived and other-perceived lack of university support barriers strongly protects against the negative impact of high self-perceived lack of university support barriers on poorer adjustment to college. Congruence is less protective when self-perceived and other-perceived lack of university support barriers are in the midrange (not high or low).

**Conflict with nonacademic life barriers.** The quadratic model of the polynomial regression analysis was the last significant step, F<sub>(3,790)</sub> = 14.92, p < .001, R<sup>2</sup> change = .05, (see Figure 1c and Table 3). The response surface analysis created from the polynomial regression can be interpreted as follows. Counter to expectations, adjustment to college increased slightly as self- and other-perceived barriers became more discrepant from each other (as incongruity increased, in either direction); the curvature of the surface along the line of incongruence was significant and positive

(t = 2.14, p = .03, curvature = 0.32). However, as expected and as fits with the prior two types of barriers, there was lower adjustment to college when self-perceived conflict with nonacademic life barriers were greater than SSM/V's perceptions of other-perceived conflict with nonacademic life barriers; the slope of the surface along the line of incongruence was significant and negative (t = -5.13, p < .001, slope = -0.80). There was also lower adjustment to college when self-perceived conflict with nonacademic life barriers and other-perceived conflict with nonacademic life barriers were both high as compared with when they were both low; the slope of the surface along the line of congruence was negative and significantly greater than zero (t = -14.22, p < .001, slope = -0.91). Adjustment to college was higher when both self-perceived conflict with nonacademic life barriers and other-perceived conflict with nonacademic life barriers were either high or low as compared with when they were both in the middle range; there was a significant curvature to the line of congruence (t = 6.92, p < .001, curvature = 0.36).

Taken together, the results find that high levels of self-perceived conflict with nonacademic life barriers are associated with poorer adjustment to college. Congruence between self-perceived and other-perceived conflict with nonacademic life barriers somewhat protects against the negative impact of high self-perceived conflict with nonacademic life barriers on poorer adjustment to college. Unexpectedly, the lowest level of adjustment to college occurred when self-perceived and other-perceived conflict with nonacademic life barriers were both in the midrange (neither high nor low).

### Discussion

Veterans report difficulty reintegrating into civilian life including adjusting to college. In qualitative research, SSM/V report that these difficulties are due to cultural incongruity defined as feelings of not belonging and feeling misunderstood. We examined the



relationship between cultural incongruity and adjustment to college for SSM/V. We found that feelings of not belonging, using the CCS, was strongly related to adjustment to college after controlling for social support and PTSD. We found feeling misunderstood about barriers to college were associated with worse adjustment to college. Feeling misunderstood was defined as feeling others perceive the SSM/V's barriers to college the same way that the SSM/V perceives their barriers to college.

Our strongest finding was that cultural incongruity, defined as feelings of not belonging, have a large effect, accounting for 46% of the variance in adjustment to college and 18% of the variance in adjustment to college after controlling for social support and PTSD, suggesting this may be an important target to improve outcomes for SSM/V. The effect size is particularly notable as SSM/V in this sample were not experiencing high levels of cultural incongruity; in fact, on average, SSM/V slightly agreed that they experienced cultural congruity (felt they belonged) on campus. Typically, the relationship between a risk factor (e.g., depression) and outcomes (e.g., disability) are larger among those with high levels of the risk factor (e.g., major depressive disorder) as compared with those with lower levels of the risk factor (e.g., subclinical depressive symptoms; Goldney, Fisher, Dal Grande, & Taylor, 2004). Future studies should examine these relationships among SSM/V who are experiencing high levels of cultural incongruity, as it is possible the effect of feelings of not belonging on poorer adjustment to college may be even stronger in this population.

Cultural incongruity, defined as feeling misunderstood, had a small effect on adjustment to college. To assess feeling misunderstood, we used an innovative statistical analysis to examine the relationship between one's own perception of their barriers to college adjustment and their view of how others perceive their barriers to college. The clearest example of this can be found in Figure 1b: barriers about lack of university support. There is no difference in the level of adjustment to college between SSM/V perceiving no barriers and SSM/V perceiving high levels of barriers and feeling understood (i.e., the SSM/V perceives that others perceive the SSM/V as also having high levels of the barrier). In contrast, when the SSM/V perceives having high levels of the barrier and feels misunderstood, the level of adjustment to college is almost two standard deviations lower than it is for those who feel understood. It is important to note that feeling misunderstood had a small effect size with adjustment to college while SSM/V's perception of the barrier (regardless of feeling understood) had a large relationship with adjustment to college, suggesting that interventions will likely need to address SSM/V's barriers in addition to helping SSM/V feel understood about these barriers.

We predicted, but did not find, that feeling misunderstood would be important regardless of the direction of the misunderstanding. Results showed that when SSM/V perceived not having a barrier, there was no difference in adjustment to college based on whether they felt understood or misunderstood about the potential barrier (i.e., others perceived them as having or not having the barrier). The impetus for this hypothesis came from anecdotal conversations with SSM/V where they expressed frustration that the college community assumed they all had PTSD and were unstable. In other words, the SSM/V did not self-perceive their mental health as a barrier, but thought others perceived the SSM/V's mental health as a barrier. There is evidence that students do assume that veterans are more mentally unstable as compared with

civilians (Schreger & Kimble, 2017). However, the current study suggests that within our sample, peers assuming SSM/V have more barriers than the SSM/V perceives themselves to have does not significantly impact their adjustment to college.

Our finding that cultural incongruity is a strong predictor of adjustment to college is consistent with findings from studies of students from other minority cultures (e.g., Latinx, Black; Constantine & Watt, 2002; Gloria & Kurpius, 1996). The current study is unique in that it shows that cultural incongruity also applies to people whose experience of marginalization is based on factors other than race/ethnicity. This finding is also relevant to our theoretical understanding of person-environment fit. Cultural incongruity has been defined as feelings of not belonging in one's environment, an aspect of person-environment fit. Most research on person-environment fit has been done among individualistic cultures. Some have proposed that there may be quantitative and qualitative differences in person-environment fit among individuals from collectivist cultures, such as military culture (Chuang et al., 2015). Our data suggest that person-culture fit may be particularly important for people from a military culture and that feeling understood may be a component of person-environment fit. Future research should explore if feeling misunderstood is a component of person-environment fit within other cultures.

### Implications for Reintegration

The results suggest opportunities to intervene to enhance students' sense that they belong and address their feeling misunderstood. University counselors and faculty are generally taught to listen and validate students' concerns. Future research should explore how to leverage these skills to best express validation and understanding of SSM/V's unique barriers and evaluate whether these approaches help improve SSM/V's adjustment to college. Integrating SSM/V's identity within multicultural classes and discussions of individuals from minority cultures may also help fellow students better understand and validate SSM/V's concerns. If found to be effective, these efforts have the potential to be low-resource interventions that may significantly improve SSM/V's adjustment to college.

Another potential intervention strategy to improve SSM/V's adjustment to college is to create communities for SSM/V within the college. Among students of color, it has been found that orientation programs and specialized clubs improve adjustment to college and retention (Swail, 2003). Targeting students in their first year of college to orient them and create communities where they may be likely to experience cultural congruity can improve academic outcomes (Noble, Flynn, Lee, & Hilton, 2007). There is a need for rigorous research to understand the most important components of these programs for SSM/V and for all students at risk of poor adjustment to college due to cultural incongruity (Valentine et al., 2011).

The results of this study may generalize to veterans' reintegration into civilian communities more generally. Congruence between military and community culture is theorized to be a critical component of successful reintegration in many scholarly fields including: social work (Redmond et al., 2015), mental health (Christian, Stivers, & Sammons, 2009), medicine (Kuehner, 2013), school counseling (Cole, 2014), and higher education (Osborne, 2014). Despite this, the current study is one of the first empirical

studies to examine the impact of cultural incongruity between military and civilian culture on reintegration (e.g., adjustment to college). Research is now needed to understand if cultural incongruity is a predictor of adjustment to other civilian communities, such as the work place, family, and community organizations.

It is particularly important to understand the relationship of cultural incongruity with veterans' engagement in mental health treatment. The SSM/V in our study reported that health concerns, including mental health-related concerns, were their most significant academic barrier. Previous work has shown that few veterans receive adequate mental health care (Elbogen et al., 2013; Hoge et al., 2014; Seal et al., 2010) and that stigma and logistical barriers predict engagement in mental health care (Iversen et al., 2011; Sharp et al., 2015). We are not aware of any quantitative study that has examined cultural incongruity between the veteran and mental health provider as a barrier to seeking care; although in qualitative studies, veterans state the perception that a provider will understand them influences their decision to pursue mental health care (Sayer et al., 2009). Hence, this is an area ripe for future investigation.

While not the purpose of our investigation, it is notable that SSM/V in our study generally felt that they belong and had a high GPA. This is consistent with research that finds that while reintegration difficulties are prevalent and significant, overall, veterans are resilient (McAndrew et al., 2013). Our study suggests that even among veterans who are resilient, cultural incongruity lowers academic adjustment, suggesting that intervening on cultural incongruity may improve outcomes for all SSM/V.

### Future Considerations

As a self-report cross-sectional study, we did not have objective measures of academic achievement (e.g., dropout rates) and were not able to follow SSM/V over time to determine if cultural incongruity predicts adjustment over multiple semesters. We also do not know if cultural incongruity changes over time. While this study recruited SSM/V from all over the country, a significant limitation is that most of the participants were White males. While this does represent the majority of SSM/V, SSM/V of color and female SSM/V may have unique needs and barriers that impact their adjustment to college. We also did not collect data on sexual orientation. The military has historically discriminated against SSM/V who identify as a sexual or gender minority. SSM/V who do not identify as cisgender or heterosexual may have different experiences not captured in the current study. Future research is needed to improve our understanding of cultural congruity for SSM/V from multiple minority cultures.

Another limitation was our recruitment strategy. We reached out to campus leaders from the Student Association of America and other contacts at the campuses who were involved in veteran-centric activities. Thus, SSM/V who were not connected to SSM/V organizations may not have had the opportunity to participate in our study. Additionally, 300 SSM/V who consented to complete the study, did not answer any questions. It will be important to understand what may be unique about those SSM/V in future studies. Finally, our response surface analysis for conflict with nonacademic life barriers found that adjustment to college was lowest when self- and other-perceived nonacademic life barriers were in the middle (not high or low). These findings were unex-

pected and there is currently no existing literature to help provide an explanation, making this an area to be explored in future studies.

### Summary

This study is the first to show that cultural incongruity is an important predictor of adjustment to college for SSM/V. After controlling for other known predictors, cultural incongruity accounted for 18% of the variance in adjustment to college. Importantly, we found that when SSM/V feel understood about their academic barriers the impact of these barriers on adjustment to college is blunted. Research is now needed to develop interventions to improve cultural congruity for SSM/V and to explore the impact of cultural incongruity among individuals from other minority cultures.

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