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The Effect of the Student Identity on Prosocial Values, Intentions, and Well-Being

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ABSTRACT

The Effect of the Student Identity on Prosocial Values, Intentions, and Well-Being

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This dissertation aims to address a gap in the literature regarding the effect of the achievement-focused student identity on prosocial values and behaviors, specifically among students who predominantly value prosociality. Largely, research on identity and motivation addresses academic outcomes and psychological well-being outcomes (Settles, Sellers, & Damas, 2002; Jaret & Reitzes, 2009) while more recent literature that has addressed prosocial motives (Yeager, et al., 2015) has solely assessed academic performance outcomes. Drawing upon values literature (Schwartz, 1992) it can be inferred that the achievement-focused student identity may inhibit or decrease prosocial values and behaviors. Further, this may be particularly deleterious for the psychological well-being of students who hold prosociality as a central guiding feature of their self-concept. First, I examine whether certain social identities tend to have a higher tendency towards prosociality (Study 1). Second, I assess how a salient achievement-focused identity affects student behaviors (with particular attention to more prosocially inclined students) during a stressful academic situation (Study 2a & 2b). Next, I devise a novel measure to assess the centrality of prosociality to the self and perceptions of conflict between prosocial values and achievement-focused settings (Study 3). Then, I assess how a salient achievement-focused identity impacts prosocial values and behaviors, and offer a new "integrated" approach to the student identity. Last, I assess how this expanded and "integrated" identity influences students' academic perceptions and psychological well-being, specifically for those students who are more prosocially inclined (e.g., women and lower income) as well as for those who perceive higher levels of prosocial-achievement conflict (Study 4).

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Chapter 1:

Introduction

Due to the positive outcomes associated with academic achievement and attainment, ranging from greater financial security to better physical health (Ross & Wu, 1995), social psychology has seen an upsurge in research investigating ways to spur and maintain academic achievement among college students. A significant proportion of the research in this area has focused on how various aspects of identity, including identity development (Perez, Cromley, & Kaplan, 2014; Chorba, Was, & Isaacson, 2012), social identities, (Oyserman, Johnons, & James, 2011; Alexander & Entwistle, 1988; Matthew, Banarjee, & Laurmann, 2014; Roeser, et al., 2008), and possible/future identities (Oyserman, Bybee, & Terry, 2006; Destin & Oyserman, 2009), contribute to academic failure or achievement and success.

Specifically this research has focused on identity as a catalyst for motivated action (Eccles, 2009; Kaplan & Flum, 2012) related to academic effort, performance, retention, and matriculation (Alexander, Entwistle, & Bedinger, 1994; Haladyna, Nolen, Haas, 1991; Duckworth, & Seligman, 2006). This research has made huge strides in understanding factors that lead to motivation and achievement especially among groups of students for which there are known to be achievement gaps (i.e., racial minorities, economically disadvantaged, first generation, and women as compared to men in STEM; Destin & Oyserman, 2010; Miyake, Kost-Smith, Finkelstein, & Pollock; 2008). This identity-based approach has not yet directly explored the effect that activation of achievement values (via a salient student identity) has on prosocial values such as empathy, caring, and helping outcomes, which are important for the health and happiness of the student and university community itself.

In these endeavors to consider how identity is harnessed to promote greater academic achievement, what has not yet been addressed is the process by which this college *student identity* goes on to affect prosocial outcomes. I argue that because this identity is culturally and institutionally defined by achievement values and goals, this can cause a deactivation and inhibition towards prosocial values and behaviors, as these two specific values can inherently conflict (Schwartz, 1992). The current dissertation also asks how might our culturally and institutionally derived definition of the student identity (as primarily favoring traits and values relating to self-enhancement and achievement) negatively impact students who hold prosociality as a guiding value and central aspect of their self-concept? More importantly how might this achievement-focused student identity impact students who inherently perceive a conflict between their personal prosocial values and the achievement-focused student identity?

The current dissertation aims first, to assess the variability in the propensity to experience affect indicative of prosocial values and motives such as empathic concern and caring for others (Study 1). This study will evaluate the relationship between prosocial tendencies and specific social identities, such as gender and socioeconomic status. Second, I assess how prosocially inclined students (as identified in study 1) react to activation of an achievement-focused identity. Specifically how does the achievement-focused student identity influence behavioral and physiological indicators of effort towards academic achievement (study 2A and 2B). Next, I devise a method to measure the centrality of prosocial traits and values to the self-concept (study 3). Within this study, I assess whether these prosocially guided students perceive conflict between their guiding values (benevolence/prosociality) and the student identity (defined by achievement values and motives). I also assess how these perceptions of conflict influence

outcomes related to psychological well-being such as satisfaction with life, depression, and self-esteem.. Last, I will test how modifying the student identity to include prosocial values, norms, and traits, influences the academic motivation, psychological well-being, and prosocial behavioral intentions of all students, but specifically for those students who perceive there to be interference in the ability to integrate their prosocial values with that of the achievement-focused student identity. I begin with a review of the relevant literature regarding student identity, its development, activation, and influence on motivation and achievement.

Student Identity, Motivation, and Outcomes

In this dissertation, I define the student identity as the extent to which a student commits to and endorses academic values and goals as important and central to his or her self-concept (Marcia, 1966; Schacter, 2005). The self-concept is a cognitive structure made up of multiple and potentially competing past, present, and future identities (King & Smith, 2004; Oyserman, 2001; Settles, 2004). Identities can be personal, including aspects of the self that make one unique, or they can be social, including aspects of the self that are rooted in various group memberships and roles (Oyserman & Destin, 2010). Among college students the extent to which they have committed to a student identity predicts less self-handicapping and greater time spent on homework, studying, and ultimately higher grades (Chorba, Was, Isaacson, 2012). Evidence suggests that the student identity begins to develop early in childhood. Especially within the United States a significant amount of time in a child's weekday is spent inside the classroom. Further, less of the time spent within school is spent on social activities like recess and getting to know one's peers as compared to other countries (Stevenson, 1992). Thus, early on it is signaled to children that the primary purpose of school is for academic tasks and working towards achievement and not for social activities. Further, student identity accompanies specific values,

which influence achievement motivation and subsequently educational and career-related outcomes (Barber, Eccles, & Stone, 2001)

A distinct and important dimension of an academic or student identity is the internal value the student places upon education, which can influence achievement motivation. Achievement motivation emphasizes persistent effort, high expectations, and continual self-improvement (Midgley et al., 1998). The extent to which a student values this identity and its focus on achievement can be established from a young age based on positive or negative feedback on performance tasks. Students who belong to particular social groups that are likely to be negatively stereotyped in academic areas and receive negative feedback can be likely to dis-identify from the academic domain and student identity as a result. For example, lower social class, racial minority, and female students can learn to disengage and dis-identify with the academic domain and the student identity after disproportionately negative feedback and experiences, even if this domain and identity was originally highly valued (Lawrence & Crocker, 2009; Steele, 1997; Walton & Cohen, 2007). This is theorized to partially account for the academic achievement gap for these social groups. Thus, prior and current feedback can create fluctuations and long term changes to the importance that a student places on academic achievement and the student identity.

There are other ways that the value of education and the corresponding student identity can experience increases or decreases in importance or salience, such as the momentary consideration of possible selves and future identities.

The current student identity can be made more or less salient not only by the present or current context but also through cognitions regarding goals, desired possible selves, and future identities. The future is an important component of self-concept (McGuire & Padawe-Singer,

1976) and doing well in school is a common element of youths' future-oriented selves (Oyserman, Johnson, & Bybee, 2006). Importantly, imagined future selves impel immediate corresponding action in school when this future self is necessarily predicated upon obtaining/achieving a college degree (Destin & Oyserman, 2010). Essentially, a student can think they intend to attend college (achieve academically) but unless they spontaneously imagine a future self that requires completing some sort of college degree, it is difficult for younger students to actually take the day-to-day steps and actions (studying, engaging in classroom activities) to achieve that future self (e.g., lawyer). Not only must the future identity be dependent on college achievement in order to influence academic effort and motivation, but importantly these future identities need to feel "true" to that individual/student and or their social identity (Oyserman, et al., 2006). I argue that it may be difficult for some students to feel that the student identity and its focus on achievement goals and values is in direct alignment to their "true" selves and with other guiding values and goals that the student may also find to be equally important and guiding principles in their life such as prioritizing caring, compassion, helpfulness, and honesty (i.e., prosociality and benevolence).

Prosocial Motives

I am defining prosociality as empathy and caring towards others as well as its corresponding behavioral expressions specifically, voluntary actions undertaken to benefit others such as sharing, donating, caring, comforting, and helping (Batson, 1998; Eisenberg, Fabes, & Spinrad, 2006; Penner, Dovidio, Piliavin, & Schroeder, 2005; Schwartz & Boehnke, 2004). Prosociality, beyond its obvious usefulness to the recipients of these acts, is also linked to positive outcomes for the individual enacting the behavior and for society at large. For example, prosocial children are less at risk for problem behaviors (Bandura, Pastorelli, Barbaranelli, &

Caprara, 1999; Eisenberg et al., 2006). Enacting prosocial behaviors leads to positive feelings about oneself, and those who more often behave prosocially are less prone to depression, are more satisfied with their life (Caprara & Steca, 2005), report higher and more consistent levels of happiness (Dunn, Aknin, & Norton, 2008) and have better physical health (Musick, Herzog, & House, 1999). Beyond the association between prosociality and positive well-being outcomes, there is work linking prosociality to better self-regulation and persistence with respect to academic outcomes. For example, students with more prosocial rather than self-oriented and extrinsic motives for learning and going to college self-reported better academic self regulation and persisted longer on boring academic tasks. Further, a one-time psychological intervention promoting a prosocial purpose for learning improved high school math and science GPA (Yeager, Hender, Paunesku, Walton, Mello, Spitzer, & Duckworth, 2015). However this work did not address or explore prosocial outcomes such as helping and caring for others. This work also did not explore or address how central prosociality is to an individual apart from the possible motives for attending college.

Prosociality and the expression of these behaviors occur both as a function of situational constraints and opportunities (e.g., the person in front of me is in need of assistance) and as a function of an individuals' guiding values, habits, and socialization practices (Batson, 1998; Fiske, 2004). In fact, value theory (Schwartz, 1992) does identify 10 basic human values recognized within and across cultures: one of which is benevolence. This value is located within the higher order motive: self-transcendence, defined as the motivation to transcend selfish concerns and thus promote the welfare of others. It includes traits like helpful, caring, concerns over equality, honest, forgiving, loyal, and responsible (Schwartz & Boehnke, 2004). Essentially prosociality, derives from and is tightly intertwined with motivational values of benevolence

thus, from here on we can think of prosociality and benevolence interchangeably, with prosociality as the intentional and behavioral manifestation of benevolent values. While these values have been found to exist within and across most all cultures, there are some individual differences with respect to who holds which of the 10 values as most central and thus guiding. For example, individuals who scored higher on self-transcendence values on the Portrait Values Questionniaire (PVQ: Schwartz, 2005b; Schwartz, Melech, Lemann, Burgess, & Harris, 2001) predicted individuals propensity towards empathic self-efficacy (Banudra et al., 2003) and measures of prosociality as indicated by 16 item questionnaire regarding the degree of engagement in actions aimed at helping, taking care of others' needs and empathizing with other's feelings (Caprara, Steca, Zelli, & Capanna, 2005). This strongly suggests there are individual differences to the extent that some individuals are more or less prosocially inclined compared to others (Caprara, Alessandri, & Eisenberg, 2012). Importantly, the Portrait Values Questionnaire provides only "inferred values believed to be held by the respondent". Further, research by Aquino & Reed has attempted to assess the importance of a moral identity to the self-concept and its influences on prosocial outcomes like sharing and cooperation. However, within this dissertation I will attempt to devise a measure that assesses the extent that individuals perceive prosocial values as not only central to their self-concept, but also devise a measure to assess perceptions that their prosociality interferes with their student identity. In some cases the patterns of differences in the endorsement and enactment of prosociality measured via caring, empathy, and charitable donations, are found to differ by social groups (e.g, men vs. women and low vs. high SES individuals).

The literature on gender and prosocial behavior has most strongly argued that men and women can be equally prosocial however the ways in which this prosociality is expressed

(relationally vs. collectively) differs and the extent to which interdependence (the connection between one self and others) is experienced by men and women differs (Gardner & Gabriel, 1999; Eagly, 2009). Despite these findings there is still evidence favoring prosociality among women. For example, a meta-analysis of prosocial behavior found girls were slightly more helpful than boys (r = .09). Further, empathy and sympathy have also strongly favored women as compared to men (Batson, 2010; Eisenberg, Fabes, & Spinrad, 2006; Lennon & Eisenberg, 1987). This dissertation will primarily focus on empathic concern which I argue is encompassed by the benevolence motives and values, as empathic concern for others and sympathy are established precursors of helping behavior (Davis, 1983). Importantly in measuring this helping behavior (prosociality) it is argued that the specific type of prosociality that differs for women and men are those emotions and concerns specifically relating to empathy and caring. Gender is not the only social group that differs on this construct, and emerging research finds that individuals from different socioeconomic backgrounds also differ with respect to prosociality, specifically caring, empathy, and helping.

Overall, a significant amount of research on prosociality and social class finds differences in the dispositional tendency towards compassion. For example lower SES individuals score higher on the compassion item of Dispositional Positive Emotion Scale (DPES) as compared to higher SES individuals (Shiota, Keltner, & John, 2006; Stellar, Manzo, Kraus, & Keltner, 2012). Low SES individuals also report greater levels of compassion on a 1-7 scale as compared to high SES individuals in response to watching emotional videos regarding children with cancer (Stellar et al., 2012). These results hold after accounting for gender, religiosity and ethnicity. Thus, there is evidence to suggest that these social groups may be most likely to value prosociality and benevolence as central features of who they are, but this growing body of

literature further suggests that prosociality and the extent to which it is felt (emotionally) and enacted upon (behaviorally) varies among individuals and social groups. Further it suggests that there may also be individual differences in the extent that prosociality is perceived as a central aspect of one's self concept. These findings may also suggest that these social groups may experience activation of the student identity as particularly effortful and not necessarily in line with their true selves.

If there are individuals for whom caring, empathy, and other prosocial traits are central to their self aspects, how will these individuals function within the academic context and in response to the college student identity which is highly achievement focused? I anticipate that these highly prosocial individuals may find the achievement-based student identity to conflict with their "true" selves. In order to test whether individuals who find prosocial traits and values as central perceive this to conflict with their student identity, we must first look towards the identity conflict and interference literature to best understand its methods of measurement and implications.

Multiple and Competing Identities

Each individual has multiple identities such as belonging to various social groups (e.g., Asian-American, Female, democrat) as well as role-based identities (e.g., mother, CEO executive, student etc.,). The effect of multiple identities on motivation, behavior, and well-being appears to be a function not of the quantity of identities but rather the extent to which these identities are perceived to harmonize, integrate, overlap, conflict, or interfere with each other (Brook, Garcia, & Fleming, 2008; Settles, 2004; Bodenhausen & Kang, 2015). A meta-analysis found a slightly negative relationship between having multiple complex identities and well-being (Rafaeli-Mor & Steinberg, 2002). The mechanism behind this finding is thought to be attributed

to issues of difficulty navigating role conflict as opposed to just the number of identities (Barnett & Hyde, 2001). Awareness of this conflict can be problematic for the target (Phinney & Devich-Navarro, 1997). It is both cognitively and emotionally taxing (Fried, et al., 1998) and as such, it is associated with negative psychological and physical outcomes (e.g., Kosek & Ozeki, 1998; O'Driscoll, Ilgen, & Hildreth, 1992). Thus, assessing when and why this perceived conflict/interference occurs is vital.

Conflict can ensue when particular combinations of identities are difficult to successfully negotiate. For example in the case of identity interference, when the pressures of one identity (e.g., athlete) interferes with the performance of another identity (e.g., student; Settles, Sellers, & Damas, 2002; Van Sell, Brief, & Schuler, 1981). One reason that enacting both identities feels/is difficult is that each identity, whether personal, group, or role-based is associated with normative standards for values and thoughts. As such they can function as powerful and primary guides for the self-regulation of behavior (Abrams, 1994; Oyserman, 2007). Because each identity comes with its own descriptive and prescriptive cultural scripts for behavior (Thoits, 1983) when the guiding assumptions of each of a person's multiple identities differ or have discrepant normative expectations, it can become particularly difficult to enact both of these identities successfully. This inability to navigate both identities and the difficulty perceived in doing so is termed interference or conflict. Further, individuals who hold both identities as highly central to who they are may find this conflict and interference more troublesome because these particular individuals would be the most motivated to maintain and perform both identities well. The centrality and importance of each of the identities is a predictor of perceived conflict and subsequent well-being outcomes.

Identity centrality/importance, is a predictor of interference and a moderator of the relation between interference and well-being and perceived science performance among women-scientists (Settle, 2004). Research on student and athlete identity interference finds that increased interference between these identities and roles is related to lower self-esteem and higher perceived stress in college athletes (Settles, Seller, & Damas, 2002). Identities necessarily dictate specific attributes, characteristics, and traits that function to motivate individuals. This means when one identity comes to mind so do other identities that may share the same or similar traits, characteristics, and attributes. When an individual perceives harmony between identities this means that the values, traits, and attributes that make up each of those identities must be or feel compatible in some way. If an individual perceives that two (or more) identities conflict or are incompatible in some way this means that either (1) when one identity is brought to mind, these other (conflicting) identities are not activated due to irrelevance in that context or (2) functioning through the lens of one of the conflicting identities necessarily means that the others cannot also be true (French, Seidman, & Allen, 2000; Hughes, 2010; Oyserman & Destin, 2010).

This dissertation attempts to adopt the framework for conflict and interference that has been utilized for identity and apply it to conflict which may be similarly felt when a highly central identity (student) is guided by a value (achievement) which is in direct conflict for students who hold prosociality as a highly central guiding value and trait of their self-aspect. Thus, rather than testing identity-identity conflict I aim to assess (1) whether the student identity is perceived to be guided solely by achievement values, (2) whether the extent to which students hold prosociality as a primary guiding value varies across social groups, and (3) whether students who are highly prosocial (hold prosocial and benevolent values as central to their self-aspects) perceive a conflict between those values and motives and the student values and motives. The

value conflict literature provides additional insight regarding whether a central value (prosociality) might conflict with an identity (student) and its corresponding activated value (achievement).

Values and Value Conflict

Values are cognitive social representations of basic motivational goals, varying in importance, which serve as guiding principles in people's lives (Kluckhohn, 1951; Rokeach, 1973; Schwartz, 1992). Within this framework values are seen as self-imposed criteria that balance between individual needs, the coordination of social interaction, and group survival. Specifically, research by Schwartz and Boehnke (2004) finds that there are 10 basic motivational human values (Schwartz, 1992) recognized within and across cultures. They consist of stimulation, self-direction, universalism, benevolence, tradition, conformity, security, power, and achievement. It is important to note that within individuals some values (similar to traits in connection to identities) can be more peripheral or central to the self partly based on the prevalence of their use in everyday life (Schwartz & Boehnke, 2004).

Aside from considering that some values may be more or less central to an individual this theory and framework importantly provides specific predictions regarding which values inherently lead to conflict or tension with each other. Specifically, these values form a quasi-circumplex structure (See Figure 1) based on the inherent conflict or compatibility between each value and its motivational goals.

While virtually all individuals endorse these values to some extent, it is important to consider that an individual’s values can change over time and across situations. For example, values can change in order to fulfill needs like the reduction of self-dissatisfaction (Grube,

Mayton, & Ball-Rokeach, 1994; Rokeach, 1973). This dissertation argues that values can also change in response to meeting the needs of salient/activated identities. There is evidence that values and corresponding behaviors indicative of those values can change based on priming words relating to each of these values. For example, Maio and colleagues (2009) find that after completing a word sorting task utilizing achievement related words, participants will perform better on a subsequent word search task. Conversely, participants primed with benevolent related words were more helpful in a lab task. Further, not only can the values that are directly activated increase in importance but opposing values (located on opposite sides of the circumplex) can consequently decrease in service of a particular goal. For example, in the same Maio et al (2009) study, when participants were primed with achievement words in a word sorting task, they performed better on the subsequent word search task but importantly the extent to which they were helpful was far reduced compared to the group of participants primed with benevolent words in a word sorting task. The opposite results occurred for students primed with benevolent related words, such that their performance on a word search task suffered but their helpful behaviors were increased to meet the value of benevolence/prosociality which had been primed. The authors argue that when changing or priming values with the purpose of altering value-relevant attitudes or behavior, researchers should consider the indirect effects of prioritized values on the opposing/conflicting side of the circumplex.

The previous research illustrates that individuals can be highly motivated to change their values to meet the demands of underlying goals in a multitude of ways. This dissertation extends the research by arguing that consideration of the identities that prime specific values and subsequently inhibit other important but conflicting values has not been directly assessed but is

very important. Values are not primed within a vacuum via abstract methods (i.e., word sorting tasks) rather values can be made more or less important in the moment as they can be tied closely and directly to particular role-based identities. This connection to how specific role-based identities can increase the importance of congruent values while simultaneously decreasing or inhibiting "opposing" but positive and important values, is the aim of the current studies. How does the priming of the student identity and its corresponding achievement values, goals and motives then go on to influence opposing values and behaviors (i.e., prosociality/benevolence)? Thus, here I move towards evidence that the activation of a student identity implies achievement values and motives and could possibly result on deleterious effects for prosocial outcomes.

Activating the Student Identity, Corresponding Values, and Priming

The salience of an identity can be temporarily enhanced or diminished based on situational cues or motivational factors, thus identities are considered to be activated flexibly (Oakes, 1987; Stryker, 1968; Turner, Oakes, Haslam, & Mcgarty, 1994). When a current or possible identity is made salient its content and the behaviors, attributes, and values associated with it are likely to be shaped by what makes sense in that moment (i.e., what will allow for the successful embodiment of that identity; Oyserman & Destin, 2010). Thus, when situations cue an identity (e.g., student), what the cued identity carries with it is not simply a fixed list of traits (e.g., hardworking, persistent). Rather the cued identity carries with it a general readiness to act and make sense of the world, including corresponding activation as to the norms, values, strategies and goals associated with that identity and the cognitive procedures relevant to being a college student. Not only are identities activated by contexts but particular social and role-based

identities are constructed and defined via broader societal and institutional frameworks. Thus, cultural expectations guide how identities like "student" apply to values and goals.

In the United States the culture of higher education supports and promotes values such as hard work, opportunity for achievement, and overall meritocratic values where those who apply themselves can outshine others and rise to the top (Kennedy & Power, 2010; Alberts, 2009). If the student identity is activated within this domain and context then the student is likely to conform to (behaviorally) then adopt and endorse the university values as well. Consequently the student identity would necessarily involve the endorsement of the achievement values defined within Schwartz's circumplex; "Achievement is defined as a focus on self-enhancement regardless of other individuals, specifically the striving of the individual and personal success through demonstration of competence according to social standards. The corresponding value labels associated with achievement are successful, ambitious, capable, and influential" (Maio, et al, 2009; Schwartz, 1992). The student identity would activate and increase achievement values so that the individual could then behave in ways congruent with that identity.

Several of the identity based methods used to boost achievement and motivation do in fact tap into these guiding values. For example, possible selves often focus on positive images of the self already in a future state of success as someone who "passed that difficult algebra test", or who "got all A's on their report card" (Oyserman & Markus, 1990). As can be seen these possible selves activate values relating to success, ambition, and capability at reaching one's goals. Further, these possible selves are the most successful at impelling effort and achievement because they activate specific strategies and behaviors that match those goals and that will then assist in reaching that possible self/ideal student identity (Oyserman et al., 2006). While these interventions boost academic behavior leading to better achievement (Oyserman, Bybee, et al.,

2006; Oyserman, Terry, & Bybee, 2002; Destin & Oyserman, 2010) what has not been directly assessed is how activation of the student identity and thus corresponding achievement values can then go on to influence opposing values specifically those relating to benevolence and prosociality. I predict that when the student identity has been activated, due to its focus on achievement values, goals, and motives, we will see corresponding decreases in opposing or conflicting values (prosociality/benevolence) and their corresponding behaviors. It is important to consider how identities are activated (or made more salient in a give context) via priming. In this dissertation, I consider principles of priming and identity activation with particular predictions regarding the effect of priming a student identity for highly prosocial students.

Primes facilitate related constructs, but they also inhibit competing constructs (Forster & Lieberman, 2005). According to this principle we can conclude that activating an achievement based identity will cause increases in constructs and behavior relating to achievement and decreases in competing constructs such as prosocial values. We can expect that priming a student identity will elicit effort and behaviors in line with that activated identity. . However, what is yet to be explored is how this achievement based identity will then influence prosocial values, behaviors, and consequently self-esteem and feelings of authenticity among these prosocial students. Prosocial students, I argue and will test, will still rise to meet the demands of the student identity however, this will be particularly effortful as they are most apt to have chronic competing focal goals (prosociality). This program of research will narrow down the focus of this work to directly assess perceptions of conflict between personal prosocial values and the achievement-focused student identity and how this impacts academic as well as psychological outcomes. This dissertation attempts to address outcomes not yet focused upon by academic motivation literature; the student identity's influence on prosocial outcomes, as well as to

specifically investigate a group of students who are at highest risk of negative academic and psychological outcomes (those who perceive high levels of prosocial-achievement conflict).

Thus, I predict several novel hypotheses.

H1: The extent that individuals feel prosocial affect (e.g., empathic concern and caring) for others will vary as a function of social group membership, specifically low SES individuals and women, will experience greater prosocial affect than high SES individuals and men (Study 1).

H2A: Activation of an achievement-focused identity should lead to the behavioral activation of achievement values, such as greater effort on an academic task as compared to activation of a non-achievement-focused identity (Study 2a).

H2B: Activation of a purely achievement-focused future identity should also result in the cognitive and behavioral activation of values adjacent to achievement, such as power, and status (Study 2b).

H3A: Perceptions of conflict between prosocial values and achievement motives will be captured utilizing a novel prosocial-achievement interference measure and this measure will predict well-being and academic outcomes for students (Study 3).

H3B: There will be an interactive effect between prosocial centrality and achievement centrality in predicting interference such that those students who value both prosociality and achievement values will experience the most conflict (Study 3).

H4A: Activation of an achievement-focused student identity will result in a stronger association between achievement values and the self, a weaker association between prosocial values and the self, a weaker endorsement of prosocial values, and a weaker expression of prosocial values as compared to a control group of students whose student identity is not explicitly activated (Study 4).

H4B: If a student identity is not rigidly defined as solely achievement-focused but also allows for the incorporation of prosocial values, there will be stronger associations between the self and prosociality for students in this "integrated" student identity condition as compared to other experimental conditions (Study 4).

H5A: Students with higher levels of interference will report greater perceptions of integration, and better well-being outcomes after considering an expanded "integrated" student identity as compared to high interference students exposed to the "traditional" student identity, and as compared to high interference students exposed to no student identity control condition (Study 4).

H5B: Other students who may benefit from an expanded and more integrated framing of the student identity will be lower income students as compared to high income students, and females as compared to males, possibly due to their propensity to be more prosocially inclined (Study 4).

Chapter 2:

Correlational Study Identifying Strongly Prosocial Social Identities

Study 1

In study 1, my primary aim was to assess how prosociality may vary between social groups like gender and socioeconomic status. Not central to this dissertation but of theoretical importance I also aimed to investigate the relationship of gender and SES to prosociality and determine whether this variability was due solely to differences in cultural self-construal which differ by gender (Gabriel & Gardner, 1992) and social class (Stephens, Markus, Fryberg, Johnson, & Covarrubias, 2012). Specifically, I assessed participants' gender, income, cultural self-construal (Hardin, 2004) and empathic concern via the Interpersonal Reactivity Index (Davis, 1983). I then assessed the relationship between empathic concern, income, and gender, controlling for relative interdependence.

Method

Participants. 319 participants were recruited from both the Northwestern University campus as well as Amazon's Mechanical Turk (Mturk)[1]. Sample 1 (Northwestern Students) included 116 participants (82 women and 34 men; *M* age = 19.02, [18.43, 19.61]. Sample 2 (Mturk) included 204 participants (86 women and 118 men; *M* age = 32.2, [30.68, 33.57])[2].

Procedure. Participants completed online surveys assessing their gender, income, empathic concern for others subscale of the Interpersonal Reactivity Index (Davis, 1980) and cultural self-construal (Hardin, 2004).

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[1] Participants were from two experiments originally designed to assess how the expectation of repeated interactions goes on to influence the sharing of monetary resources. The empathic concern and self-construal measures were administered prior to any manipulations.

[2] Power analysis for a partial correlation was conducted to determine a sufficient sample size using an alpha of .05 and power of .80, a medium effect size (p = .03), and two tails (Faul et al., 2008).

Measures.

Income. Participants indicated their family household income (student sample) and their own household income (Mturk sample) by selecting one out of nine annual income groups: (1) below $25,000, (2) $25,001-$40,000, (3) 40,001-$70,000, (4) $70,001-$90,000, (5) $90,001-$120,000, (6) 120,001-$150,000, (7) $150,001-$200-000, (8) $200,001-$300,000, (9) $300,001 or more. $M_{Sample\ 1}$ = 5.19 ($90,000-$120,000), [4.74, 5.66], and $M_{Sample\ 2}$ = 3.37 ($40,000-$70,000), [3.12, 3.62].

Empathic concern. The empathic concern subscale of the Interpersonal Reactivity Index (IRI; Davis, 1980) was used to assess feelings of empathy, care, and concern. Participants rated 7 statements on how well it describes their thoughts and feelings in a variety of situations relating to caring about others and concerns over fairness (e.g., "I often have tender, concerned feelings for people less fortunate than me." "When I see someone being taken advantage of, I feel kind of protective towards them"). The scale utilizes a 5-point likert scale ranging from 1 (*Does not describe me well*) to 5 (*Describes me very well*). The subscale is calculated as the mean of each of its items after reverse-scoring some of the items. Higher scores represent greater tendency to experience empathic concern ($M_{sample\ 1}$ = 3.89, [3.78, 3.99]; $M_{sample\ 2}$ = 3.52, [3.41, 3.63]). See Appendix A for a full list of items.

Cultural self-construal. Participants completed a questionnaire reporting their sense of self in relation to others; self-construal (Hardin et al., 2004). Participants responded to 30 items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Questions included independent focused items (e.g., "I do my own thing, regardless of what others think") and interdependent focused items (e.g., "I will sacrifice my self-interest for the benefit of the group I am in"). A relative score of interdependence (mean of interdependent responses minus the mean of independent

responses) was calculated ($M_{sample1}$ = -.04, [-.19, .11]; $M_{sample2}$ = -.45, [-.60, -.30]). Higher and more positive scores represent an individual with a stronger interdependent as compared to independent self-construal. See Appendix A for a full list of items.

Results and Discussion

To determine the relationship between empathic concern and gender, one-way analyses of variance were conducted on each of the samples. Gender was entered as the independent variable while empathic concern was the dependent variable. First, in sample 1 there was a significant difference in levels of empathic concern by gender, $F(1, 114) = 5.66$, $p = .019$, with higher levels of empathic concern reported by women (M = 3.97, [3.86, 4.09]) as compared to men (M = 3.69, [3.44, 3.93]). In sample 2 the same results emerged. Women reported significantly higher levels of empathic concern, $F(1, 203) = 19.99$, $p < .001$. Women reported more empathic concern (M = 3.79, [3.63, 3.96]) than men (M = 3.31, [3.18, 3.45]). These results remained significant when controlling for relative interdependence.

Next, bivariate correlation analyses between income, gender, empathic concern, and relative interdependence were conducted. A significant negative relationship between SES and empathic concern was found in sample 2, $r(202) = -.144$, $p = .04$, but not in sample 1, $r(114)$ -.08, $p = .37$. Relative interdependence was also associated with empathic concern in both samples (sample 1 $r(113)$ .22, $p = .02$; sample 2 $r(202)$ .22, $p = .002$; see table 1). The negative relationship between SES and empathic concern from sample 1 increased in significance when controlling for relative interdependence, $r(202) = -.158$, $p = .024$. The relationship between gender and empathic concern remained significant for both samples, when controlling for relative interdependence as well, $p_{sample\ 1} = .03$ and $p_{sample\ 2} = .002$. In sample 1, SES was not significantly related to relative interdependence, $r(114) = .17$, $p = .18$ nor was gender, $r(125)$, $p =$

.21. In sample 2, SES was also not related to relative interdependence, $r(202)$ .044, $p = .54$, nor was gender, $r(202)$ .004, $p = .95$. All results are presented in Table 1.

The results illustrate support for hypothesis 1 such that members of particular social groups (i.e, women compared to men and lower SES compared to higher SES) reported a larger propensity for feeling prosocial emotions. This is a first step towards identifying prosocial traits that may or may not be more important and central to some individuals and identities compared to others. These results do not yet however, address how these prosocial individuals (women and low SES) respond in situations that demand a focus on achievement and personal success. Will these individuals find this request incompatible with their prosocial motives or will they rise to the occasion? Specifically, when an achievement-focused identity is primed will this activate achievement related behaviors and values, especially among more prosocially guided students (i.e., women and lower SES)?

Chapter 3:

Testing the Achievement-Focused Identity Influencing Academic and Effort Outcomes

Study 2a

Thus far, I have focused on specific social groups/identities that seem to employ and perceive prosocial affect more strongly than others, suggesting they may value prosociality to a greater extent. What has not yet been tested in this program of research is whether an identity increases behaviors representative of specific values. Specifically, building off of research linking future imagined and possible identities and their influence on academic behaviors the current study aims to find evidence of increased effort and other behavioral displays that signal specific values have been activated. Undergraduate students were prompted to consider an identity that is either entirely college achievement-based (future identity) or non-achievement-based (younger self prior to considering college). I then examined whether prompting students to consider an achievement-based identity (future identity) resulted in greater achievement-related behavior (e.g., academic effort). I also assessed whether micro expressions and non-verbal displays of values that are adjacently located to achievement in the values circumplex (power and status) were enacted by students who were primed with an achievement-based identity as compared to students primed with a non-achievement-based identity. Such findings would align with the values conflict framework regarding adjacently located values (Schwartz, 1992).

Further, this study assessed how a salient achievement-focused identity influences students from specific social groups (women and low SES backgrounds) who were shown in study 1 to score higher on measures relating to prosociality and may thus hold prosociality as more central to their self-concepts.

Method

Participants. One hundred and eighty-seven undergraduates (102 women; 59.0% European American), from a medium-sized private Midwestern university participated in the study in partial fulfillment of course credit. Participants were a mean of 18.81 years old, [18.59, 19.04]. No participants were excluded from the dataset, rather analyses were conducted on all participants who provided data relevant to each analysis, and thus *N* varies slightly where participants provided incomplete data. Collection of data spanned four academic quarters. I initiated data collection at the beginning of each quarter and aimed to collect roughly equal amounts of low and high SES participants per condition. Based on power analysis, I planned to terminate data collection after recruiting between 180-190 participants, in order to investigate a possible medium-sized three-way interaction effect of condition, SES, and gender.

Procedure. At the beginning of each academic quarter, during a mass-testing session, all students in an introductory psychology course completed a demographic questionnaire indicating their gender, race, family income, and Scholastic Achievement Test (SAT) scores. Students were recruited to participate if they met the SES requirements for the study (described below). After agreeing to participate, participants arrived at the laboratory where they completed a trait measure of anxiety, the Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), to be included as a covariate in subsequent analyses, embedded within several filler survey measures. Next, they were randomly assigned, between-subjects, to consider either their past or future identity. The manipulations were specifically designed to cue achievement and success related concepts within the "future" identity. In the past identity condition, participants read the instructions below:

> "First we would like for you to imagine yourself before you began seriously planning for and applying for college (during your freshmen and sophomore years of high school) when you lived with your family and hometown friends. What was your family's living

> situation like at that time in terms of money and finances? How do you think your family's money, finances, and/or status shaped or influenced how you were perceived by others? Be as descriptive as possible include any thoughts, feelings etc., that come to mind."

In the future identity condition, participants read:

> "First we would like for you to imagine yourself a few years after college graduation as a middle to upper class professional. How will your living situation change from what it is now in terms of money and finances? How do you think your money, finances, and/or status will shape or influence how you will be perceived by others? Be as descriptive as possible include any thoughts, feelings etc., that come to mind."

All participants then participated in a mock faculty interaction according to the following instructions:

> "First, imagine that you are having trouble in one of your university courses and that you must approach the professor of this course during his/her office hours to seek help. Think about a specific issue in a particular class and what you would say to the professor in a one-on-one meeting. After taking three minutes to prepare, we will be asking you to speak aloud to the experimenter and video camera as if you were speaking to the professor at this office visit for about three minutes. What you say will be recorded and evaluated for the quality of your argument and articulation."

Participants then completed the speech task in front of the experimenter who recorded them with a small, handheld video camera. Experimenters were trained to be silent observers and video recorders and to only speak to participants during the speech to prompt them to continue speaking if they stopped before the three minutes had passed.

Subsequently, participants completed a short academic task, which included math and verbal questions from the Graduate Record Examination (GRE). Participants were then debriefed, thanked for their participation, and dismissed from the lab. I evaluated additional outcomes with two subsamples of participants in order to assess other processes of interest. In order to assess expended effort in response to the achievement based identity prime (future

identity) participants in subsample study 2b (N = 80) provided salivary samples throughout the duration of their study session allowing us to measure cortisol reactivity.

Measures.

Income. In a mass-testing session, prior to coming into the lab, participants indicated their family household income by selecting one out of nine annual income groups: (1) below $25,000, (2) $25,001-$40,000, (3) 40,001-$70,000, (4) $70,001-$90,000, (5) $90,001-$120,000, (6) 120,001-$150,000, (7) $150,001-$200-000, (8) $200,001-$300,000, (9) $300,001 or more. Participants indicating a family income of the third category or lower were eligible to participate and categorized as low SES (N = 92, M = 2.01, [1.93, 2.09], approximately $32,500). Participants indicating a family income of the top category were also eligible to participate and categorized as high SES (N = 95, M = 9.00, [9.00, 9.00], over $300,001).

High school SAT score. Participants also provided their composite SAT scores (M = 2168.93, [2146.87, 2191.00]) to be included as a covariate in analyses of academic performance. Thirteen participants did not provide this information.

Non-verbal behavioral coding. I also examined participants' non-verbal display of power and status during the mock faculty interaction task. I measured displays of power posing that students exhibited during the speech task by assessing expansive body posture (Riskind, & Gotay, 1982; Carney, Cuddy, & Yapp, 2010). Two undergraduate research assistants who were unaware of participant condition and the study hypothesis watched the recorded speech tasks on mute and coded participants' power posturing (1 = *Not at all*, 7 = *Very strongly*; power posturing M = 4.09, [3.90, 4.29]). One research assistant coded all videos, and a second research assistant coded 96.3% of videos. The two coders reached strong agreement on ratings of power posturing

($\alpha = .86$) so I used ratings made by the research assistant who coded the complete set of videos in our analyses.

Academic effort. I indexed academic effort and performance using 16 questions from the GRE test that had been rated by the Princeton Review and Educational Testing Services as having a high difficulty level. Participants were told to "complete as many of the following GRE questions, correctly, until the experimenter comes in to stop you." The experimenters allowed each participant to work on the GRE items for only 7 minutes. The test included 8 math and 8 verbal questions presented in alternating order by subject. I calculated participants' effort scores as the sum of answered items out of the 16 GRE items ($M = 8.91$, [8.40, 9.43]).

Results

In my analyses, I sought to examine the hypothesized effect of condition (achievement based identity vs. non-achievement based identity) on non-verbal displays of status and power and on academic effort. I also sought to examine whether social groups found to be higher in prosocial affect (i.e., low SES and women) would be influenced by these conditions differently. Therefore I also assessed the interaction effect between condition, SES, and gender on non-verbal displays of status and power and academic effort. Specifically, I conducted a MANCOVA with condition (past vs. future identity), SES (relatively low vs. high), and gender (men vs. women) and all interaction terms as predictive variables on the following dependent variables: non-verbal behavior and academic effort. When I observed significant three-way interactions, I then decomposed them by examining the effects of condition, SES, and their two-way interaction, among female participants and male participants separately. For clarity, I report only simple effects of experimental condition for significant condition × SES interaction results.

Given that SAT scores and race[3] are potentially related to the dependent variables (Kao, 2003; Steele, 1997; Spielberger, 1972), I included them as covariates.

MANCOVA. In MANCOVA tests, I found a significant effect of SES, $F(2, 156) = 2.08$, $p = .02$, $\eta_p^2 = .09$, no main effect of condition, $F(2, 156) = .04$, $p = .97$, $\eta_p^2 = .02$, and a significant three-way interaction of condition, SES, and gender, $F(2, 156) = 4.717$, $p = .01$, $\eta_p^2 = .11$. There was a marginal effect of gender, $F(7, 156) = 2.32$, $p = .07$, $\eta_p^2 = .06$. There were no two-way interaction effects of condition and SES, $F(7,156) = 1.67$, $p = .19$, $\eta_p^2 = .05$, condition and gender, $F(7,156) = 1.73$, $p = .18$, $\eta_p^2 = .05$, or SES and gender, $F(7,156) = 1.12$, $p = .33$, $\eta_p^2 = .05$. There were no significant effects for any of the covariates, all ps > .76.

Thus, I did not find support for an overall main effect of condition whereby all students experienced a boost in academic effort and non-verbal displays of greater status and power when primed with an achievement based identity (future identity). However, in an attempt to test who will be most affected by an achievement based identity prime; high prosocials (low SES and women) or low prosocials (high SES and men), I further investigated the three-way interaction between condition, SES, and gender.

Non-verbal behavioral coding. MANCOVA tests revealed a significant three-way interaction effect between condition, SES, and gender for power posturing, $F(1,157) = 4.28$, $p = .04$, $\eta_p^2 = .02$. Thus, I decomposed this effect separately for women and men. For women, there was, as predicted, a significant condition×SES interaction for expansive body posture, $F(1,157) = 4.87$, $p = .03$, $\eta_p^2 = .05$.

[3] For race, white or Asian (not underrepresented in higher education) were coded as 1, while members of other racial groups (underrepresented in higher education) were coded as 0 (see Stephens, Hamedani, & Destin, 2014).

Simple effects tests for expansive body posture showed a marginal effect of condition for low SES women, $t(1, 40) = 2.18$, $p = .07$, $M_{diff} = .84$ [-1.75, .08], $\eta_p^2 = .04$, $d = .69$. For low SES women, cueing an achievement-focused identity led to greater displays of expansive body posture while engaging in the mock faculty interaction ($M = 4.37$ [3.69, 5.03]) than cueing a non-achievement identity, $M = 3.57$ [2.91, 4.14]. However, among high SES female students, cueing a future identity did not lead to significantly different levels of expansive or confident body posture ($M = 3.98$, [3.42,4.55]) than cueing a past identity ($M = 4.48$, [3.89, 5.07]), $t(1,48) = 1.23$, $p = .22$, $M_{diff} = -.49$, [-1.30, .31]. For men, I did not find a significant SES × condition interaction for body posture, $F(1,157) = .27$, $p = .60$, $\eta_p^2 = .01$.

Academic effort. I also found a significant three-way interaction effect for academic effort, $F(1, 157) = 4.76$, $p = .03$, $\eta_p^2 = .03$. For women, there was, as predicted, a significant condition × SES interaction for total academic effort, $F(1, 157) = 7.48$, $p = .01$, $\eta_p^2 = .08$. Simple effects tests for total academic effort showed an effect of condition for low SES women, $t(1, 40) = 2.53$, $p = .02$, $M_{diff} = -2.75$ [-4.88, -.62] (see Figure 1). As predicted, for low SES women cueing a future identity led to a significantly greater number of attempted GRE items ($M = 11.05$, [9.49, 12.61]) than cueing a past identity ($M = 8.31$, [6.83, 9.79]). A Cohen's effect size value ($d = .81$) suggests strong practical significance. However, among high SES female students, cueing a future identity did not lead to a significantly different number of attempted GRE items ($M = 9.08$, [7.75, 10.40]) than cueing a past identity ($M = 10.30$, [8.92, 11.69]); $t(1,48) = 1.23$, $p = .20$, $M_{diff} = 1.22$, [-.68, 3.13]. For men there was no significant condition × SES interaction for total academic effort, $F(1, 157) = .13$, $p = .72$. See Figure 2.

Discussion

I did not find an overall effect of condition whereby cueing an achievement-focused identity (future identity) increased the achievement related behaviors compared to a non-achievement-focused identity for all students. Rather, students who are members of groups that are likely to have higher levels of prosocial emotions like empathic concern (i.e., women and low SES) were most motivated by this achievement-focused identity. Thus, cueing a student's achievement-focused identity (future identity) interacted with SES and gender to influence academic effort towards achievement. Specifically, low SES women who wrote about a high achieving and achievement-focused future identities expended more effort on GRE items. Another novel contribution of this work to the literature is in the investigation into non-verbal displays of values known to lie adjacent to achievement (power and status) in Schwartz' values circumplex (see appendix). Utilizing micro-expressions and non-verbal body posturing, I tested the assumption laid forth by the values circumplex literature (Schwartz, 1992, Schwartz & Boehnke, 2001; and Maio et al., 2004) that increases in adjacent values like power and status should result if achievement is in fact being primed. If achievement and power were being activated, there could have been corresponding deactivation of prosocial values and behaviors like caring and helping, though direct measures were not included. I also have not yet fully investigated the hypothesis that the priming of achievement is more effortful to enact or "live up to" for the more prosocially inclined, such as women and low SES students. Thus, in Study 2b I assess a hormone known to be a physiological indicator of challenge and effort (i.e., cortisol reactivity).

Study 2b

Cortisol is a hormone that supports rapid physiological mobilization of energy stores within the body so as to allow the organism to effectively approach challenging, effortful, or stressful situations (Saplosky, Romero, & Munck, 2000). While often used as an indicator of chronic and accumulative negative stress (Schulz, Kirschbaum, Pruszner, & Hellhammer, 1998), research also suggests that acute short-term increases in cortisol are indicative of challenging situations that require energy and engagement (Mattarella-Micke, Mateo, Kozak, Foster, Beilock, 2011; Akinola & Mendes, 2012). Thus, in the current study, I evaluated cortisol reactivity as an indicator of perceived effort and expended effort towards attaining a high achieving identity (future identity). I predicted that the priming of an achievement focus (via the future identity) among students with normally a prosocial focus (low SES and women) is more effortful for them to navigate as this doesn't match their normal focus. As such this greater effort on the part of low SES and female students to realize this high achieving identity should result in greater cortisol reactivity for these students.

Method

Participants. This subsample of participants consisted of 80 undergraduates (44 female, 60.3% European American) who were a mean of 18.73 years old, [18.12, 19.06].

Procedure. The participants in this subsample followed the same instructions described above, however these participants also provided salivary samples for cortisol analyses. In preparation for collection of salivary cortisol samples, eligible participants received e-mail instructions to refrain from a variety of cortisol-influencing behaviors (e.g., exercising for at least 24 hours before their experimental session and eating food or drinking caffeine for at least 4 hours before their experimental session; Adam & Gunnar, 2001; Kirschbaum & Hellhammer,

1989). Each participant was also reminded of this list of unapproved activities 48 and 24 hours before their scheduled experimental session.

Study sessions were conducted between 1:00 p.m. and 6:00 p.m., when cortisol levels are at their waking nadir. Upon arrival, participants provided their consent and then completed a compliance measure regarding their adherence to the approved and unapproved activities in the 24-48 hours prior to the experiment. Sixteen participants did not meet full compliance. I calculated participants' level of compliance by summing the number of restricted behaviors in which participants engaged. Those who met full compliance and engaged in zero restricted behaviors were coded as 0, those who engaged in 1 restricted behavior were coded as 1, and those who engaged in 2 restricted behaviors were coded as 2 (no participants exceeded 2 restricted behaviors). Given that engaging in these behaviors can influence cortisol levels, (Lovallo, Farag, Vincent, Thomas, & Wilson, 2006; Petrides et al., 1994) I entered this compliance variable as a covariate in the hormone analyses.[4]

Following the compliance measure, and once 20 minutes had passed since they arrived at the lab, participants provided a baseline saliva sample (Time 1). They subsequently provided two reactivity samples that were 15 and 30 minutes after the introduction of the speech task (Times 2 and 3, respectively). The timing of the sample collection was designed to match the amount of time required for cortisol to be detected in saliva after the onset of a stressor (Kirschbaum & Hellhammer, 1994). The onset of the stressor was specified as when participants received instructions about the mock faculty interaction and speech that they would perform. The Time 2 salivary sample corresponded to 2 minutes after the GRE and immediately after participants

[4] Results remain consistent whether compliance is included or excluded as covariate.

completed the state measure of self-reported anxiety. To pass time before the third salivary sample collection, participants answered filler questions about their academic and social activities. The Time 3 salivary sample corresponded to the very end of the study. This was the last task that participants completed before they were debriefed.

For each sample, participants expectorated 1 ml of saliva into IBL SaliCap sampling devices, which were stored in a -4C freezer until shipped overnight on dry ice to the Kirschbaum Biopsychologie at the Technische Universitat in Dresden, Germany. They were assayed for salivary-free cortisol (Kirschbaum & Hellhammer, 1994). Intra and inter-assay coefficients of variation were less than 10%.

Cortisol reactivity. As recommended by Miller and Maner (2010), I focus on the changes in levels of cortisol from baseline (i.e., reactivity). I created two cortisol reactivity variables by subtracting baseline values from the values at each of the two post-stressor samples. To reduce the influence of outliers, cortisol values at each of the three time points that were found to be outliers were winsorized to |2.6| SD from the mean (Tukey, 1977).

Results

I utilized cortisol reactivity as a physiological indicator of expended effort in response to an achievement-based identity (future identity as compared to past identity). I conducted a 2 (condition: past vs. future) × 2 (SES: low vs. high) × 2 (time: 15 and 30 min post-stressor reactivity) mixed analysis of covariance (ANCOVA), with cortisol reactivity as the outcome. As with the complete sample, I included race and SAT score as covariates. In addition, I measured and included several covariates often used in hormonal analyses, including time of day (Adam et al., 2010), phase of menstrual cycle for women (1= luteal, 0 = follicular and all men; Kirschbaum, Kudielka, Gaab, Schommer, & Hellhammer, 1999), baseline level of cortisol,

degree of compliance with instructions (Townsend, Major, Gangi, & Mendes, 2011), use of oral contraceptives (1 = yes, 0 = no), and body mass index (BMI; Kirschbaum and Hellhammer 1989, 1994). The subsample did not have adequate power to test for a three-way interaction with gender, so gender was also included as a covariate.

There was no main effect of SES, $F(1,72) = 1.37$, $p = .25$, $\eta_p^2 = .025$. However, as predicted there was a significant main effect of condition, $F(1,72) = 6.51$, $p = .015$ $\eta_p^2 = .11$. Overall, participants imagining a highly achievement-focused identity (future identity) experienced greater cortisol reactivity, (i.e., effortful engagement) as compared to those participants primed with a non-achievement focused past identity (M_{diff}= 2.28, [.51, 4.04]. This was however, primarily driven by the high levels of cortisol reactivity experienced by low SES students in the achievement-focused future identity condition.

There was a significant condition × SES interaction, $F(1, 54) = 5.97$, $p = .02$, $\eta_p^2 = .10$. Among low SES students, those who wrote about an achievement-focused identity (future identity) exhibited a greater increase in cortisol reactivity (M = 3.20, [1.13, 5.25]) than those who wrote about a non achievement-focused past identity, (M = -.93, [-2.45, .55]), $t(1, 27) = 3.27$, p = .01, $\eta_p^2 = .16$; M_{diff} = - 4.13 [-6.75,-1.57], d = 1.24. In contrast, among high SES students there was no significant effect of condition on cortisol reactivity, $t(1, 37) = 0.39$, $p = .71$, $\eta_p^2 = .01$, M_{diff} = -.39 [-2.42, 1.65]. For high SES students, writing about an achievement-focused future future identity did not produce significantly different levels of cortisol reactivity, (M = .45 [-1.05, 1.95]) from writing about a non-achievement-focused past identity, (M = .06 [-1.27, 1.39]) nor changes in reactivity from baseline. See Figure 3.

Thus, activating an achievement-focused identity (future identity) does elicit physiological indicators of effort, especially for low SES students. This result taken together

with findings that the achievement-focused identity also influences academic effort and non-verbal displays of power and status suggesting that changes in achievement and power related values is occurring, and that among lower SES and female students this takes effort as indicated by cortisol reactivity.

Discussion

Thus far, the last two studies have illustrated that; (1) lower SES students and women tend to have more prosocial affect than high SES students and men, suggesting they may find prosociality more central to their self-concepts. (2) Lower SES and female students (those who are more prosocial) are more reactive to achievement-focused identities, expending greater physiological effort to meet the demands of that achievement-focused identity. The last two studies have not yet however, directly assessed prosocial and achievement centrality, and perceptions of conflict in regards to these two motives and the subsequent negative outcomes based on this conflict. Further, I have not yet assessed whether perceptions of prosocial-achievement conflict are also moderated by gender and SES. In Study 3, I aim to directly assess prosocial and achievement centrality as well as their conflict or "prosocial-achievement interference". I further assess the subsequent influence of this interference on well-being and academic outcomes. Next, I test whether students who find both prosociality and achievement as central to the selves experience this interference the most. Last, I assess whether level of interference is moderated by gender and SES.

Chapter 4:

Developing a Measure of Prosocial-Achievement Interference

Study 3

In Study 3, I sought to develop a measure to assess perceptions of conflict between student achievement motives and prosocial motives. In studies 1 and 2 women and lower income students were more prosocially inclined than men and higher income students, respectively. They did, however, illustrate that an achievement-focused identity was physiologically more effortful Thus, it is important to assess underlying perceptions of conflict between prosocial and achievement motives that seem to coexist.

To devise this scale I adapted a measure used by Settles and colleagues to test feelings of identity interference among female scientist/academics (Settles, Sellers, & Damas, 2002; Settles, 2004) in order to assess the level of perceived conflict between student achievement based traits and prosocial traits. I conducted a factor analysis on the novel prosocial-achievement interference measure and assessed the hypothesis that it would have a negative relationship with outcomes relating to academic performance, psychological well-being, and prosocial behavioral intentions above and beyond potentially related constructs (i.e., cultural construal and cultural motives), gender, and income background.

Subsequently, I explored the possible predictors of prosocial-achievement interference, including whether measures of student achievement centrality and prosocial centrality predicted prosocial-achievement interference. I also explored whether prosocial-achievement interference varied according to gender and income background, as suggested by prior studies, in addition to possible interaction effects between all potential predictors of prosocial-achievement interference.

Method

Participants. 241 undergraduate students (137 (56.8%) men and 104 (43.2%) women; 63.1% European American/white) were recruited from Amazon's Mechanical Turk to participate in this study[5].

Procedure. Participants were selected based on age (requirement: 18-25 years of age) and their enrollment at a university or college. Participants were compensated $1.60, which is the current fair rate payment for fifteen minutes or less of their time. They answered questions from the following survey measures. In the analyses *N*s vary depending on whether participants skipped or refused to answer a question.

Measures.

Prosocial-achievement interference. I assessed conscious perceptions of interference between the achievement-focused student identity and prosocial focused traits and values. This scale was adapted from the (Settles, Sellers, & Damas, 2002) scale assessing interference between being a woman and being a successful scientist. The degree to which being a high achieving successful student and a prosocial individual (achievement-prosocial) are perceived to interfere was measured on a 7-point scale ranging from 1 (*not at all true of me)* to 7 *(extremely true of me)*. Examples of the adapted items include, "I feel that I am not taken seriously in my high achieving academic pursuits because I am a caring and compassionate individual." and "Being a caring and compassionate individual makes me less successful as a high achieving student." An interference score was calculated by averaging all items such that higher numbers

[5] Sample size and selection criteria were followed in accordance to the sample size and criteria set forth by the protocol in Settles' 2004 work on identity centrality and interference.

indicated higher interference, *M* = 2.91, [2.76, 3.07], α = .88. See Appendix B for full list of items.

Prosocial centrality. This measure is also modified from Settles (2004). The importance of being prosocial was measured with an 8-item scale. Participants rated their agreement with each item (e.g., "Overall being a caring and helpful individual has little to do with how I feel about myself"; “My destiny is tied to the destiny of other caring and helpful individuals") using a 7-point response scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean score after reverse scoring some items was computed where higher numbers indicate prosociality is more central to the individual, *M* = 4.91, [4.76, 5.05], α = .86. See Appendix B for full list of items.

Achievement centrality. To assess the importance of being a college student, participants completed an 8-item scale modified from Settles (2004). Participants rated their agreement with each item (e.g., "In general, being a college/university student is an important part of my self-image"; "I have a strong connection to other college/university students") using a 7-point response scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An average score was computed with higher scores indicating a stronger student identity, *M* = 4.39, [4.24, 4.54], α = .86. See Appendix B for full list of items.

Perceived academic performance. Four questions were used to assess participants' beliefs about their performance as college students. These items were adapted from the scientist perceived performance scale (Settles, 2004). The questions asked participants how productive, capable, and knowledgeable they feel as a college student as well as feelings about their academic performance compared to others at their university and program. Participants responded to the questions using a 7-point response scale ranging from 1 (*not at all*) to 7

(*extremely*). A mean of the items was computed to create a composite perceived performance score where higher scores indicated better perceived performance, $M = 5.31$, [5.19, 5.44], $\alpha = .86$. See Appendix B for full list of items.

Self-reported grade point average (GPA). Participants self-reported their current ($M = 3.45$, [3.39, 3.50]) and anticipated GPAs ($M = 3.57$,[3.51, 3.63] on a 4.0 scale.

Intentions toward post-baccalaureate degree. One question was used to assess participants' intentions toward pursuing a professional degree beyond a B.A. ("How strong are your intentions to pursue a degree beyond your bachelor's degree?"). Participants responded to the question using a 7-point response scale ranging from 1 (*no intentions*) to 7 (*absolutely intend*); $M = 4.98$, [4.73, 5.23].

Depression. The Center for Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977) was used to assess participants' depressive symptomology as a measure of psychological well-being. Participants rated 20 statements on the frequency with which they had felt or behaved that way in the past week (e.g., "I had trouble keeping my mind on what I was doing."; I felt sad"). The scale utilizes a 4-point response scale that ranges from 1 (*rarely none of the time*) to 4 (*most or all of the time*). A mean score of all items was computed after reverse coding appropriate items so that higher scores represent more frequently experiencing depressive symptoms, $M = 1.80$, [1.72, 1.87], $\alpha = .88$. See Appendix B for full list of items.

Life satisfaction. The Satisfaction With Life Scale (Diener, Emmons, Larsen & Griffin, 1985) was used to measure participants' feelings about life. Five items about general life satisfaction were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean of the items was calculated to produce the life satisfaction score, where higher

numbers indicated more satisfaction with life, M = 4.63, [4.44, 4.82], α = .93. See Appendix B for full list of items.

Self-esteem. The Rosenberg (1979) Self-Esteem Scale was used to measure participants' level of self-esteem. Participants rated 10 statements about themselves on the degree to which they *strongly disagreed* (1) to *strongly agreed* (4). A mean score of the items was computed so that higher numbers indicated higher levels of self-esteem, M = 2.99, [2.90, 3.07], α = .94. See Appendix B for full list of items.

Prosociality vs. achievement behavior. At the end of the study participants encountered a forced-choice decision between selecting a link to receive more information regarding college success and planning after graduation or a link to receive more information about charity with multiple ways to volunteer or donate. Participants were forced to choose only one of the informational links and the selection of the academic or prosocial link provided a behavioral indicator of achievement or prosociality. The coding format for this variable was therefore dichotomous (0 = achievement choice selected, 1 = prosocial choice selected), M = .29, [.23, .34]

Cultural self-construal. Participants completed a questionnaire reporting their sense of self in relation to others; self-construal (Hardin et al., 2004). Participants responded to 30 items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Questions included independent focused items (e.g., "I do my own thing, regardless of what others think") and interdependent focused items (e.g., "I will sacrifice my self-interest for the benefit of the group I am in"). A relative score of interdependence (mean of interdependent responses minus the mean of independent responses) was calculated. Higher and more positive scores represent an individual with a stronger interdependent as compared to independent self-construal, M = -.41, [-.53, -.29] α = .81. See Appendix A for full list of items.

Cultural motives for attending college. Participants completed a questionnaire reporting their motives for attending college (Stephens, et al., 2012). Half of the 12 items reflect the motives of independence that are commonly distributed in American university ideas and practices (e.g., Expand my knowledge of the world."; "Explore my potential in many domains"). The other half reflect the motives of interdependence (e.g., Help my family out after I'm done with college"; "Give back to my community"). Participants rated their agreement on a scale of 1 (not at all a motive) to 7 (definitely a motive) for each of the items in their choice to attend college/university. A relative interdependence score was created by subtracting each participant's independent mean from their interdependent mean. Higher scores represent stronger interdependent motives for attending college, M = -1.29, [-1.47, -1.12] α = .84. See Appendix B for full list of items.

Income. Participants indicated their family household income by selecting one of nine annual income groups: (1) below $25,000, (2) $25,001-$40,000, (3) 40,001-$70,000, (4) $70,001-$90,000, (5) $90,001-$120,000, (6) 120,001-$150,000, (7) $150,001-$200-000, (8) $200,001-$300,000, (9) $300,001 or more. M = 3.25 ($40,001-$70,000).

Level in school. Participants were asked to report their current year in college. 1 = first year, 2 = 2nd year, 3 = 3rd year, 4 = 4th or last year. 15.4% of participants were first years. 70.1% of participants were second years. 12% of participants were in their 3rd year of college. 5% of participants were in their 4th or final year of college.

Analysis Plan and Results

In the analysis I sought to establish the validity of the novel measure of prosocial-achievement interference measure by conducting a factor analysis on the scale. Next, I assessed

the correlations between emergent factors, the original complete scale, and all other measures included in the study.

After assessing basic correlations, I conducted a series of regression analyses to evaluate the relationship between interference (testing each factor in turn) and the dependent variables, after taking into account cultural factors (self-construal and motives), gender, and income.

Factor analysis. A factor analysis of the prosocial-achievement interference scale items was performed using principal-axis factors and a varimax rotation. Two distinct factors emerged (See table 2) accounting for 64.95% of the variance. Factor 1, which I term *conflict* (items 1, 2, 5, 6, 7, and 8) evaluated students' agreement with declarative statements regarding difficulty in balancing being a high achieving student and a prosocial individual; α .90. Factor 2, which I term *ease* (items 3, 4, and 9) focused on participant's agreement with declarative statements discussing the ease and benefits individuals experience from being both a high achieving student and a prosocial individual; α = .83. These two factors; c*onflict* and *ease*, and the total composite of these items, *interference* are assessed in the following analyses.[6] See Table 2.

Bivariate correlations. First I assessed the relationship between conflict, ease, and the collapsed interference measure to find significant correlations between all three variables. Specifically, conflict and interference were positively correlated, but both are negatively correlated with ease. See Table 3. Next, conflict, and the interference scale were each significantly negatively correlated with satisfaction with life, self-esteem, perceived academic performance, anticipated GPA, and degree intentions. Conversely, ease was positively correlated with satisfaction with life, self-esteem, perceived academic performance, anticipated GPA, and

[6] Interference was calculated as the mean of items 1 through 9 with the ease items (3,4,and 9) reverse coded to reflect overall interference/conflict/difficulty.

degree intentions. Conflict and the interference scale were also each significantly positively related to depression, while ease was negatively correlated with depression. Neither of the two factors nor the interference scale were correlated with race or prosocial behavior.

Next, there were several divergences between conflict, ease, and the composite scale. Conflict and the interference scale were both positively related to self-construal and cultural motives however, ease was not significantly related to these cultural variables. Further, ease was significantly positively related to achievement centrality, while conflict and the composite interference scale were not significantly related to centrality.

Next, in a series of hierarchical regressions, I separately assessed each interference measure's predictive power on the following outcomes; depression, satisfaction with life, self-esteem, perceived academic performance, anticipated GPA, degree intentions, and prosocial behavior when controlling for factors relating to identity interference (i.e., race, level in school, and current GPA), demographic aspects of the student's identity (i.e., gender and income) and cultural differences (i.e., cultural construal and cultural motives).

In the first step of all analyses, I entered the same control variables (i.e., race, level in school, & current GPA) utilized in previous identity interference research (e.g., Settles, 2004). In the second step, I entered two demographic variables/aspects of identity (i.e., gender and income) that have also been associated with well-being and academic outcomes (e.g., Nolen-Hoeksema, 2001; Zimmerman & Katon, 2005; Sirin, 2005; Reardon, 2011). In the third step, I entered two variables capturing cultural differences (e.g., relative interdependent self-construal and cultural motives for attending college). Last, in the fourth and final step, I entered the measure of interference (conflict, ease, or interference scale). All independent variables were mean centered for the analyses.

I hypothesize that conflict and the composite interference scale should positively predict depression and negatively predict, satisfaction with life, self-esteem, perceived academic performance and anticipated GPA above and beyond the influence of covariates and cultural variables. I further, hypothesize that ease, should negatively predict depression and positively predict, satisfaction with life, self-esteem, perceived academic performance and anticipated GPA above and beyond the influence of covariates and cultural variables. I had no clear prediction regarding the potential relationship between interference and the behavioral indicator of achievement or prosociality.

Perceived academic performance. For each of the distinct factors (conflict and ease), and interference, the initial regression step examining the effects of race, level in school, and GPA accounted for 17.8% of the variance in perceived academic performance. In all cases entering the demographic variables in the second step non-significantly increased the R^2 of the equation. In all cases entering the cultural variables in the third step also non-significantly increased the overall R^2 of the equation. Entering conflict, ease and interference each separately in the fourth and final step significantly increased the overall R^2 adding a statistically significant amount of variance in all cases. Specifically, conflict and interference were each statistically significant in negatively predicting perceived performance beyond the effects of race, level in school, GPA, gender, income, self-construal and cultural motives for attending college ($\beta_{Conflict}$ = -.19, p = .01; $\beta_{Collapsed}$ = -.27, p = .01). Ease was statistically significant in positively predicting perceived performance (β_{Ease} = .33, p = .01) beyond the effects of race, level in school, GPA, self-construal, and cultural motives for attending college. Results are presented in Tables, 4, 5, and 6.

Anticipated GPA. For each of the distinct factors (conflict and ease), and interference, the initial regression step examining the effects of race, level in school, and GPA accounted for 52% of the variance in perceived academic performance. Entering the demographic variables into the second step added significant variance in all cases. Entering the cultural variables into the third step did not add statistically significant variance in all cases. Entering each of the factors conflict, ease, and interference in turn into the fourth and final step illustrated that only ease significantly increased the overall R^2 equation accounting for additional variance. Specifically, only ease was statistically significant ($\beta = .14$, $p = .01$) in predicting perceived academic performance over and above the effects of race, level in school, GPA, gender, income, self-construal, and cultural motives for attending college. Conflict and interference were not significant predictors. Results are presented in Tables 4, 5, and 6.

Post-baccalaureate degree intentions. For each of the distinct factors (conflict and ease), and interference, the initial regression step examining the effects of race, level in school, and GPA accounted for 7.5% of the variance in perceived academic performance. Entering the demographic variables in the second step significantly increased the overall R^2 of the equation to .12 in all cases. Entering the cultural variables in the third step non-significantly increased the overall R^2 of the equation in all cases. Entering each of the factors (conflict and ease) and interference in turn into the fourth and final step illustrated that all factors; ease, conflict, and interference, significantly predicted degree intentions, ($\beta_{Ease} = .18$, $p = .01$; $\beta_{Interference} = -.17$, $p = .01$; $\beta_{Conflict} = -.13$, $p = .05$) beyond the effects of race, level in school, GPA, gender, income, self-construal, and cultural motives for attending college. Results are presented in Tables 7,8, and 9.

Depression. For each of the distinct factors (conflict and ease), and interference, the initial regression step examining the effects of race, level in school, and GPA accounted for 1.8% of the variance in depression. Entering the demographic variables in the second step non-significantly increased the overall R^2 of the equation. Entering the cultural variables in the third step significantly increased the overall R^2 of the equation accounting for an additional 2.5% of the variance, specifically cultural motives for attending college. More important for our present hypotheses, entering conflict, ease, and collapsed interference each in turn into the third and final step increased the overall R^2 adding a statistically significant amount of variance in all cases. Specifically, conflict and interference were both statistically significant in positively predicting depression ($\beta_{Conflict}$ = .22, p = .01; $\beta_{Interference}$ = .31, p = .01) beyond the influences of race, level in school, GPA, gender, income, self-construal, and cultural motives for attending college. Ease was statistically significant in negatively predicting depression; β_{Ease} = -.23, p = .01. Results are presented in Tables 10, 11, and 12.

Satisfaction with life. For this dependent variable ease and interference both followed the same patterns of results such that the initial regression step examining the effects of race, level in school, and GPA accounted for 6.2% of the variance in satisfaction with life. Entering the demographic variables in the second step non-significantly increased the overall R^2 of the equation. Entering the cultural variables in the third step, non-significantly increased the overall R^2 of the equation. More important for our present hypotheses, entering either ease or the composite interference measure into the fourth and final step significantly increased the overall R^2. Specifically, ease and the composite measure were each statistically significant in predicting satisfaction with life over and above the effects of race, level in school, GPA, income, gender, self-construal, and cultural motives for attending college. However, ease positively predicted

satisfaction with life (β =.24, p = .01), and interference negatively predicted satisfaction with life, (β = -.17, p = .01) respectively, beyond the factors entered into steps 1, 2, and 3.[7] All results are presented in Tables 10, 11, and 12.

Self-esteem. For this dependent variable ease and interference both followed the same patterns of results such that the initial regression step examining the effects of race, level in school, and GPA accounted for 4.8% of the variance in self-esteem. Entering the demographic variables in the second step non-significantly increased the overall R^2 of the equation. Entering the cultural variables in the third step significantly increased the overall R^2 equation to .113. Entering conflict and ease each into the fourth and final step significantly increased the overall R^2 of the equation. Specifically, ease and the composite measure of interference were each statistically significant in predicting self-esteem beyond the influence of race, level in school, GPA, income, gender, self-construal, and cultural motives for attending college. However, ease positively predicted self-esteem (β =.25, p = .01), and collapsed interference negatively predicted self-esteem, (β = -.16, p = .02) respectively.[8] Results are presented in Tables 13, 14, and 15.

Prosocial vs. achievement behavior. In this analysis there were no significant predictors for whether participants chose the prosocial or the achievement related URL link at any of the four steps for either of the factors (conflict, ease) nor the interference scale. Results are presented in Tables 16, 17, and 18.

Predictors of interference. I next conducted hierarchical regression analyses to explore whether student centrality, prosocial centrality, or their interaction significantly predicted levels

[7] Conflict alone was not statistically significant (β = -.098, p = .13) in predicting satisfaction with life beyond factors entered into steps 1, 2, and 3. The direction of this pattern of results follows that of the interference measure.
[8] Conflict alone was not statistically significant (β = -.08, p = .20) in predicting Self-Esteem beyond the factors entered into steps 1, 2, and 3. The direction of this pattern of results follows that of the interference measure.

of interference. Due to prior results illustrating a strong alpha value ($\alpha = .88$) for the full interference scale, as well as our series of regression analyses illustrating that the constituent factors (*ease* and *conflict*) function similarly to the full *interference* scale in their ability to predict outcomes, from here forward I only present results for interference within the text.[9] One of the predictors (prosocial centrality) was marginally positively related to self-construal and gender thus, I again utilized a hierarchical regression model to uniquely predict interference above and beyond any cultural and demographic confounds (i.e., self-construal, motives, gender, and income). All predictors were mean centered.

In predicting interference, the initial regression step examining the effects of race, level in school, and GPA accounted significantly for 7.1% of the variance. There was a significant main effect of GPA in negatively predicting interference, $\beta = -.16$, $t(238) = -2.44$ $p = .02$. Entering demographic variables into the second step non-significantly increased the R^2 of the equation. Entering the cultural variables into the third step non- significantly increased the overall R^2 of the equation. Entering prosocial centrality and achievement centrality in the fourth step significantly increased the overall R^2. Results from this hierarchical regression is presented in Table 21.

Simple slopes analyses of this significant two-way interaction between prosocial and achievement centrality (prosocial centrality × achievement centrality) revealed specifically that for those students 1 standard deviation below the mean in achievement centrality there was no effect of prosocial centrality in predicting interference, $p = .26$. However, for students 1 standard

[9] Results for predictors of our separate factors; ease and conflict, are presented in Tables 19 and 20 and Figures 4 and 5.

deviation above the mean in achievement centrality higher prosocial centrality predicted significantly lower interference scores, β = -.46, $t(238) = -4.03$, $p = .01$. See Figure 6.

The Role of Gender & Income

Thus, far I have assessed achievement-prosocial interference, its influence on several outcomes, and its predictors. Next, because prior results illustrated that women and lower income students were more empathic and prosocially concerned (Study 1) and that women and lower income students were more reactive to achievement based identities as motivational factors (Studies 2a and 2b), I assessed whether gender and income were predictive of prosocial centrality, achievement centrality, and of most importance for our aims, interference.

First, I assessed whether prosocial centrality, achievement centrality, and interference differed as a function of gender. I ran three separate one-way ANOVAs with gender entered as the predictive factor on each of the three outcome variables. Similar to findings from Study 1, I found a significant difference between men and women in prosocial centrality, $F(1, 239) = 6.70$, $p = .01$. Women had higher levels of prosocial centrality ($M = 5.13$, [4.91, 5.34]) than men ($M = 4.74$, [4.54, 4.93]). Next, I found a marginal effect of gender on achievement centrality, $F(1, 239) = 4.22$, $p = .09$. Specifically, women showed higher achievement centrality ($M = 4.54$, [4.34, 4.75]) than men ($M = 4.28$, [4.06,4.49]). Last, I found that there was no significant effect of gender on level of interference, $F(1,239) = .09$, $p = .76$.

Next, I assessed whether prosocial centrality, achievement centrality, and interference differed by income background. I ran three separate regression analyses with income (centered at the mean) as the predictive factor on each of the three outcome variables. Income was not a significant predictor of prosocial centrality; $\beta = .08$, $t(240) = .73$, $p = .47$, achievement centrality; $\beta = .12$, $t(240) = 1.20$, $p = .23$, or interference; $\beta = .05$, $t(240) = .51$, $p = .61$.

Next, I assessed whether gender and income moderated the interactive effects of prosocial centrality and achievement centrality on interference. Again, because conflict and ease functioned similarly in the previous results, I only assessed the full interference scale as the dependent variable and not its constituent factors separately.

First, I assessed whether the interaction between prosocial centrality and achievement centrality was moderated by gender. I utilized the same regression model as the analyses above. The initial regression step examining the effects of race, level in school, and GPA accounted significantly for 7.0% of the variance. There was a significant main effect of GPA, β = -.15, $t(238) = -2.34$, $p = .02$. Entering the cultural variables into the second step non-significantly increased the overall R^2 of the equation. Entering prosocial centrality and achievement centrality in the third step significantly increased the overall R^2. There was a significant interaction between prosocial centrality and achievement centrality, β= -.21, $t(238) = -2.48$, $p = .01$. Entering the interactive effects of gender with prosocial centrality and achievement centrality significantly increased the overall R^2. There was a significant three-way interaction between gender × prosocial centrality × achievement centrality in predicting interference, β = -.22, $t(234) = -2.15$, $p = .03$. Results from this hierarchical regression are presented in Table 22.

I then conducted the test of the two-way interactions between student centrality and prosocial centrality predicting interference separately for women and men. For women, there was a significant two-way interaction effect of student centrality and prosocial centrality on interference, β = -.258, $t(102) = -2.78$, $p = .01$ and the two-way interaction was not significant for men, β = -.07, $t(135) = -1.47$, $p = .14$. These results are presented in Figures 7 and 8.

I followed up the significant two-way interaction effects among women by testing the simple slopes. Simple slopes tests reveal a pattern similar to the overall sample. Among those

students who were high in achievement centrality, having prosociality as also more central to their self-concepts then predicted significantly lower interference, β = -.61, $t(103) = -6.69$, $p < .001$. Among those students who were low in achievement centrality, prosociality did not have a significant relationship with interference, β = -.05, $t(103) = -.58$, $p = .57$. The slope for those students 1 SD below on prosocial centrality (low prosociality) was significant, β = .25, $t(103) = 2.97$, $p = .01$. Further, the slope for those students 1 SD above the mean on prosocial centrality was significant, β = -.33, $t(103) = -3.58$, $p = .01$. Although the two-way interaction was not significant for men there was a significant relationship between prosocial centrality and interference for those students who were high in achievement centrality, β = -.26, $t(135) = -2.44$, $p = .02$.

Last, I assessed whether the same interaction between prosocial centrality and student-achievement centrality was moderated by income. The initial regression step examining the effects of race, level in school, and GPA accounted significantly for 7.1% of the variance. There was a significant main effect of GPA, β = -.24, $t(238) = -3.75$, $p = .01$. Entering the cultural variables into the second step non-significantly increased the overall R^2 of the equation. Entering prosocial centrality and achievement centrality in the third step significantly increased the overall R^2. There was an interaction between prosocial centrality and achievement centrality, β = -.23, $t(238) = -3.67$, $p = .01$. Entering the interactive effects of income with prosocial centrality and achievement centrality significantly increased the overall R^2. There was a significant three-way interaction between income × prosocial centrality × achievement centrality in predicting interference, β = -.13, $t(234) = -1.99$, $p = .05$. Results from this hierarchical regression are presented in Table 23.

I then conducted the test of the two-way interactions between student centrality and prosocial centrality predicting interference separately for low income (-1 standard deviation from the mean) and high income (+1 standard deviation from the mean) separately. The two-way interaction between prosocial and achievement centrality was not significant among low income students (-1SD of mean income), $\beta = -.05$, $t(238) = -.77$, $p = .44$. Rather among low income students, whether participants are 1 standard deviation below ($\beta = -.30$, $t(238) = -2.59$, $p = .01$) or above ($\beta = -.42$, $t(238) = -3.21$, $p = .01$) in achievement centrality, there was a buffering effect of prosocial centrality in predicting significantly lower interference. The two way interaction was significant among high income students (+1 SD of mean income), $\beta = -.27$, $t(238) = -3.77$, $p < .006$. Simple slopes analyses revealed that among high income students there was an effect of prosociality on interference, again, for students who were high in achievement centrality, $\beta = -.48$, $t(238) = -3.78$, $p < .001$. Again, as with women, prosociality did not have an effect on predicting interference among those students who were low in student-achievement centrality, $\beta = .17$, $t(238) = 1.28$, $p = .20$. These patterns are presented in Figure 9. Results for high income students are presented in Figure 10.[10]

Discussion

First, I found that this novel measure "prosocial-achievement interference" had strong reliability ($\alpha = .88$). A factor analysis revealed 2 separate factors within this scale. After dissecting this scale into its component factors (i.e., conflict and ease) I found that they were each highly correlated to each other. Importantly, in direct support of my hypotheses, ease and the composite interference scale were in fact able to predict all of the psychological well-being

[10] I tested the four way interaction between student centrality, prosocial centrality, income, and gender on interference, however, this was non-significant, $\beta = -.025$, $t(217) = -.292$, $p = .770$.

and academic outcome dependent variables beyond the predictive power of demographic characteristics and cultural differences. Specifically, greater interference predicted greater reported depression. Lower levels of interference predicted better self-esteem, greater satisfaction with life, better perceived academic performance, and higher post-baccalaureate degree intentions. Conflict was the only factor for which findings diverged somewhat, such that the conflict sub-factor alone was unable to predict positive psychological outcomes (i.e., satisfaction with life and self-esteem) beyond the demographic covariates or cultural self-construal and cultural motives. This suggests that it is indeed possible to capture perceptions of difficulty at integrating prosocial and achievement motives. Even though 2 factors emerged, the total alpha score for the full scale ($\alpha = .88$) was strong and the factors were generally similar in their predictive power, suggesting that this novel measure can be utilized to effectively capture prosocial-achievement interference.

Next, in exploring how feelings of prosocial centrality and achievement centrality work together to contribute to perceptions of interference, there was a main effect where prosocial centrality negatively predicted interference. However, students who felt that being both prosocial and achievement oriented was highly central to their selves experienced *lower* interference. This suggests perhaps that students who feel that both prosocial traits and student achievement are central to their self-concepts have managed to effectively and successfully integrate these motives. However, students whose primary focus is student achievement and who do not deem prosociality as central to their self concepts have not reconciled these motives and thus have the greatest levels of interference. Being highly achievement-focused should lead to positive academic outcomes in general, however if an individual is aware of the strong societal pressure

towards prosociality and yet knows that they do not feel this motive and value as central to their self-concept, they may find that this elicits internal perceptions of conflict and interference.

Although level of interference did not differ by gender or income, gender and income did play roles in moderating the relationship between prosocial and achievement centrality and interference. Specifically, there was a significant three way interaction (gender × prosocial centrality × achievement centrality) in predicting interference. This was such that female students high in achievement centrality were particularly buffered from interference when they also felt being prosocial was highly central to their self-concepts. The two-way interaction (prosocial × achievement centrality) was not significant among male students. This finding is particularly telling, such that across both men and women, greater prosociality has a buffering effect against interference (and possible subsequent negative outcomes) however, it is particularly among women where the ability to simultaneously hold these two motives central yields less interference. Women who are only primarily focused on achievement motives as central to their selves, but who are low in prosociality (perhaps due to pressures from the environment to disregard or suppress these motives, or perhaps these women have not yet learned how to integrate the two and thus choose to follow the achievement motives in this high stakes university environment) are the students who suffer from greatest levels of interference and subsequently poorer outcomes.

Last, income also moderated the effects of prosocial and achievement centrality in predicting interference. Specifically, among lower income students there was an overall main effect of high prosociality predicting lower interference regardless of level of achievement centrality. Thus, it seems that for lower income students it is particularly detrimental to not have prosociality as a central part of their self-concept, regardless of level of achievement focus.

Among higher income students there was a significant two-way interaction (prosocial × achievement centrality) in predicting interference that reflected the interaction observed in overall sample and among female students. This suggests that if we want to reduce feelings of interference particularly among women or lower income students we may need to focus on emphasizing the importance and value of prosocial motives within the achievement contexts and student identity, in a way that will assist students in integrating the two together.

Thus, Study 4 attempts to address two questions. First, how does a student identity, when framed in the traditional way (primary focus on achievement goals and motives) influence prosocial values, academic outcomes, psychological well-being, and prosocial behavior, as compared to an integrated student identity (that encourages the students to consider prosocial motives and behaviors and ways they can integrate that into their study identity)? Second, will the framing of the student identity in an integrated way, be specifically helpful to those students who are high in perceived interference, as well as to women and lower income students with respect to the same outcomes outlined above?

Chapter 5:

The Effect of an Integrated Student Identity at Reducing Prosocial-Achievement Interference

Study 4

This study aims to test two phenomenon. First, as presented earlier in the literature review, most identity focused student interventions tend to focus on achievement values, motives, and behaviors. The outcomes that are assessed within these studies are also largely focused on achievement/performance outcomes and only sometimes assess well-being outcomes such as stress or social belonging (Stephens et al., 2012; Walton & Cohen, 2011). However, what has not been directly assessed is how achievement-focused student identities then go on to influence prosocial values and behaviors. Further, implications of identity based interventions for students with high levels of prosocial-achievement interference have not specifically been investigated.

As concept priming facilitates the activation of related constructs, it also inhibits the activation of competing constructs (Forster & Liberman, 2005). If the traditional conception of the student identity as solely predicated upon achievement values and prosocial values is in conflict according to the values circumplex framework (Schwartz, 1992), I predict that the activation of the achievement-focused student identity should cause a corresponding increase in the association between achievement values/traits and the self, a simultaneous decrease in the association between prosocial traits/values with the self, and lower levels of prosocial behaviors.

Second, this study will also test whether providing a student identity that is expanded to more broadly include both prosocial and achievement motives, whilst also providing an opportunity for students to integrate the two, will be helpful, with respect to well-being,

academic motivation, and prosocial behavior, specifically for students who are initially high in interference, female as compared to male, and/or lower income.

Method

Participants. 362 undergraduate students were recruited from Northwestern University. Participants included students participating in the study for Psychology 110 course credit as well as paid volunteer participants who were compensated $10 for their participation[11].

Procedure. At a mass-testing session at the beginning of the fall 2015 and winter 2016 quarters, the undergraduate students participating for course credit completed measures regarding achievement centrality, prosocial centrality, achievement-prosocial interference, and values. Paid participants completed these same measures online prior to each of their lab sessions. I selected a wide range of students representing the full spectrum of perceived interference (so that regression analyses at 1 standard deviation above and below the mean could be assessed). These students were randomly assigned to one of three conditions; the "traditional" student identity condition, the "integrated" student identity condition or the control (no identity) condition. After the initial prime participants completed a Me Not-Me task assessing the strength of association of prosocial values and achievement values to the self. Participants then answered questions about their current mood, satisfaction with life, and student role authenticity. Then all participants were re-primed. After the re-prime participants completed a post measure of values (change in values) from pre-screen to after the manipulation, perceptions of perceived academic performance, as well as 2 items assessing the extent to which the participant felt they had

[11] Following the guidelines delineated by Simmons, Nelson, and Simonsohn (2001), I enrolled approximately 40 participants per cell (3 conditions). Following these recommendations I doubled the necessary sample size per cell, to 80, to have strong power to test for moderation. Another 40 participants per cell (120) were added in order to test for three-way interactions with medium effect size ($f^2 = .15$).

integrated their prosocial and achievement motives. Other dependent variables included questions regarding anticipated GPA at graduation, career intentions, post-baccalaureate degree intentions, and a behavioral measure of prosociality.

Measures.

Prosocial-achievement interference. Participants completed the same scale of conscious perceptions of interference between the achievement-focused student identity and prosocial focused traits and values as utilized in Study 3 prior to the experimental lab sessions (.e.g., at a mass-testing sessions or online), *M* = 2.62,[2.53, 2.71].

Achievement centrality. To measure the importance of being a high achieving college student to the self concept, participants completed the same scale described in Study 3. This was also completed at the mass-testing/pre-measured prior to appearing in the laboratory, *M* = 4.83,[4.73, 4.93].

Prosocial centrality. To measure the importance of being prosocial, participants utilized the same scale described in Study 3, which was also modified from Settles (2004). This was completed at mass-testing/pre-measured prior to appearing in the laboratory, *M* = 5.029,[4.92, 5.14].

Pre-measure value importance. At the pre-testing participants also completed a list of 16 values from the Schwartz (1992) Value Survey, with four values serving each of the four higher order motivations: self-transcendence, self-enhancement, openness, and conservation. Participants were asked to rank the values on the basis of their importance as guiding principles in their lives, such that the most important value was ranked as 1 and the least important value ranked as 16. See Appendix C for full list of items.

Experimental manipulations. The *traditional* student identity condition consisted of an adaptation of the academic possible selves questionnaire (Oyserman & Markus, 1990; Oyserman, Bybee, Terry, & Hart-Johnson, 2004). Whereas Oyserman and colleagues have used this questionnaire to assess academic possible selves and future identities, we modified this into a writing task that primed the ***traditional*** student identity. It read:

> "You can think of your student experience in terms of your grades, test scores, and academic achievements. Northwestern University offers a host of options for students to succeed and achieve in their academic goals. For example, Northwestern offers a wide range of courses, test preparation programs, and internship opportunities. Please write for 4 minutes on the following topic: How do you plan to become a successful and high achieving student in the coming year? Please include goals and plans related to studying habits, test scores, course grades, and demonstrating your overall competence as a college student. Please be as descriptive and thorough as possible."

The ***integrated*** student identity condition also included a reflective writing task about the student identity yet this prompt allowed for the inclusion of prosocial emotions, traits, motives and behaviors. The approach integrates and builds upon similar approaches by Yeager and colleagues (2015), Diekman and colleagues (2011), and Stephens and colleagues (2012) in order to resonate with students with a propensity towards prosociality who feel that their personal prosocial values and motives do not match or fit into the highly achievement-focused elite university. The manipulation aimed to lead these students to feel that the college student identity is one that values their prosocial inclinations and that their prosocial and achievement values will not be perceived at such odds with each other. In sum, it attempts to suggest that prosocial behaviors, values, and goals are just another part of being a good student. It read:

> "You can think of your student experience in terms of your grades, test scores, and academic achievements, however, Northwestern also offers a host of options for individuals to be caring and helpful students. For example, Northwestern offers a wide range of clubs and volunteer organizations where students can assist other NU students as

> well as broader communities outside the university. Please write for 4 minutes on following topic: How do you plan to be a helpful and caring student in the coming year? Please include goals with respect to helping others, volunteering, and demonstrating both your care about the enhancement and welfare of others both at NU and/or beyond the university. Please be as descriptive and thorough as possible."

The ***control*** (no identity) condition was meant to act as a writing task that would not prompt or cue any type of identity so that we could assess this as a control. This prompt asked the following:

> "Please write for 4 minutes on the following topic: How do you plan your trip to the grocery store and while at the grocery store. For example please explain in detail the transportation and route you take to the grocery story you frequent most often. Please describe the layout of the grocery store itself. What does it look like, how is it organized, how do you normally travel through the store to purchase your groceries? Do you normally have a list or plan? Please be as descriptive and thorough as possible."

Me/not me self-association measure. Participants were given a Me/Not Me response task measure of self-association (Markus, 1977; Bargh et al., 2002) to evaluate the relationship of achievement and prosocial values/traits with the self-concept. During this task, participants were asked to respond to a computer presentation of a series of achievement, prosocial, and neutral concept words by pressing either a key labeled *Me* (i.e., if they believe the trait displayed related to them) or a key labeled *Not Me* (i.e., if they believed the trait displayed was unrelated to them).The computer software (DirectRT) recorded the speed of student reactions (milliseconds) , which provides a measure of the strength of students' associations with different values and traits $M_{\text{Prosocial}}$ = 789.19, [774.47, 803.91]; $M_{\text{Achievement}}$ = 817.083, [802.38, 831.78]. See Appendix C.

State mood and satisfaction. State mood and satisfaction with life were assessed with two items utilized by Schwarz and Clore (1983). Participants responded to the following two statements "All things considered how happy do you feel at this moment; All things considered

how satisfied do you feel with your life at this moment." Participants used 10-point scales: 1(*The unhappiest/most dis-satisfied*) to 10 (*The happiest/most satisfied*). *M* = 6.25 [6.09, 6.41].

Student-role authenticity. Perceptions of participant's authenticity in the role of a university student was assessed with a modification of the Five Item Measure of Authenticity in Various Social Roles (Sheldon et al., 1997. The items included, "I experience this aspect of myself as an authentic part of who I am"; "This aspect of myself is meaningful and valuable to me"; "I have freely chosen this way of being"; I am only this way because I have to be" (R); and "I feel tense and pressured in this part of my life" (R). Each participant answered the above items in response to being a university student, *M* = 5.03 [4.94, 5.12].

Re-prime. The entire study was framed to participants as investigating how students plan their student experiences. Thus, the re-prime asked all participants to revisit the original prompt that they had read and to consider the following:

> "Sometimes, after given more time to think, individuals decide there are more things they would like to add to their planning. Here is some of the original prompt and what you wrote before. Please read it over and provide one thing you would/could add to that planning."

Participants in the "traditional" condition read:

> “How do you plan to become a successful and high achieving student in the coming year? Please include goals and plans related to studying habits, test scores, course grades, and demonstrating your overall competence as a college student. Please be as descriptive and thorough as possible."

Participants in the "integrated" condition read:

> "How do you plan to be a helpful and caring student in the coming year? Please include goals with respect to helping others, volunteering, and demonstrating both your care about the enhancement and welfare of others both at NU and/or beyond the university."

The computer was programmed such that below all of these prompts, participants were presented with their original written responses to review and consider as well.

Post-test value importance. Participants were then given another set of 16 values from Schwartz's (1992) Value Survey. These values were different from the values used in the pre-test measure. Participants were asked to rank the importance of these values as guiding principles in their own lives (as in the mass testing pre-measure). Difference scores from post-test minus pre-test on each of the 4 motives as guiding principles assessed which values and motives increased or decreased in importance from pre-test. $MDiff_{SelfTranscendent}$ = .501 [.27, .74]; $MDiff_{SelfEnhancement}$ = -.444 [-.68, -.21]. See Appendix C for full list of items.

Perceived academic performance. Four questions will be used to assess participants' beliefs about their performance as college students. These items will be adapted from the scientist perceived performance scale (Settles, 2004). The questions will ask participants how productive, capable, and knowledgeable they feel as a college student as well as feelings about their academic performance compared to others at their university and program. Participants will respond to the questions using a 7-point response scale ranging from 1 (*not at all*) to 7 (*extremely*). A mean of the items was computed to create a composite perceived performance score where higher scores indicate better perceived performance, M = 4.763, [4.65, 4.88]. See Appendix B for full list of items.

Prosocial-achievement integration. To assess how integrated participants view their prosocial motives and achievement motives and student identity I utilized a novel item modified from the Inclusion of Other in the Self scale (Aron et al., 1992). This item provides a picture (See Appendix C) and specifically asked "Please select the pair of circles in the picture above that best describes how you feel about being helpful/caring and ambitious/successful." They

selected the picture that best described their feelings on a scale of 1 (*no overlapping circles*) to 5 (*almost completely overlapping circles*), *M* = 3.33[3.22, 3.42].

Change in prosocial-achievement integration. To explore possible changes in prosocial-achievement integration we asked participants to indicate their agreement/disagreement to one of the items (#9) from the original prosocial-achievement interference pre-measure scale, specifically; "I feel that I can be both a successful student and caring and helpful ALL at the same time." Participants indicated their responses on a 1-7 scale; 1 (*Not at all true of me*) to 7 (*Extremely true of me*). This was assessed as a difference score between item #9 at post-test minus item #9 at pre-testing, *M* = -.457, [-.61, .31], with higher scores indicating a shift towards less interference and more integration.

Intentions toward post-baccalaureate degree. One question was used to assess participants' intentions toward pursuing a professional degree beyond a B.A. "How strong are your intentions to pursue a degree beyond your bachelor's degree?" Participants responded to the question using a 7-point response scale ranging from 1 (*no intentions*) to 7 (*absolutely intend*); *M* = 5.283, [5.08, 5.49]. See Appendix B.

Self-reported GPA. During pre-measures, participants reported their current GPA. Their anticipated GPAs were reported after most of the other dependent variables and before the last prosocial behavioral assessment. These were reported on a 4.0 scale. $M_{\text{currentGPA}}$ = 3.620, [3.58, 3.66]; $M_{\text{anticipatedGPA}}$ = 3.61, [3.59, 3.63].

Prosocial behavior. For the last dependent measure, the researcher asked participants if they would be willing to take part voluntarily (without payment/or further course credit) in assisting the lab with some much needed surveys. The experimenter was trained specifically to memorize and say the following script:

> "Okay great, so you are done with our study. You will be credited for your participation in this study within 24 hours [paid $10]. But before you leave we need to ask if you would be willing to help the lab by completing some extra surveys. There are 3 options **[research assistants referenced three packets on the table in front of them with the cover pages titled;"Packet A, Packet B, Packet C". Below the titles were estimated indicators of how long each of the packets took to complete; 3 minutes, 7 minutes and 10 minutes]**. We do want to remind you that you won't get any extra credit [extra payment] for this, and if you choose not to help us it will not in any way affect you receiving credit [receiving payment] for the study you have already completed. So do you think you would you be able to help us?"

Participants then verbally said yes or no, and took the packet they would be willing to assist with. The research assistants made a note of the participants' choices. The research assistants then debriefed the participants, who did not actually need to complete the surveys as this was an indicator of prosocial behavior intention. This procedure was a modification of a task that has been utilized as a measure of prosocial behavior (Maio et al, 2001; Maio et al., 2009). This provided a dichotomous measure of prosocial intentions (1 = yes will help with surveys, 0 = no will not help with surveys), M = .851, [.81, .89] . This also provided a measure of degree of helpful behavior in terms of which packet participants chose (coded as 0 minutes, 3 minutes, 7 minutes or 10 minutes), M = 4.43, [4.11, 4.75].

Results

First, I tested a series of manipulation checks. I expected main effects of condition on the following outcomes; changes in self-enhancement values, changes in self-transcendent values, reaction time speed for prosocial and achievement traits, and increases in feelings of integration. Specifically, my hypotheses were such that the "traditional" framing of the student identity would reduce students' self-transcendent values from Time 1 (pre-test) to Time 2 (post-test). Further the traditional condition should increase self-enhancement values from Time 1 (pre-test) to Time 2 (post-test). I predicted an increase in self-transcendent values from Time 1 to Time 2

among the "expanded" condition. I further predicted that if integration has truly occurred then participants in the expanded condition should not show decreases in self-enhancement values. However, there is a competing hypothesis, as Schwartz and colleagues would predict that true integration is nearly impossible. Schwartz and colleagues would predict that within the expanded condition, participants will show increases in self transcendence and decreases in self-enhancement. Last, for these manipulation checks I planned to test both the main effects of condition and specifically assess post-hoc comparisons between all three conditions (traditional, expanded, and control) as well as specifically test the expanded condition against the traditional and control conditions (collapsed across/combined). It is important to assess how each of the three conditions function apart from each other, however, I predicted that in most cases the traditional condition will most likely function similarly to the control condition, since the traditional identity condition is presumed as the default amongst most all students. Thus, to test the hypotheses, two separate one-way between subjects ANOVAs were conducted to compare the effect of condition (traditional identity condition vs., expanded identity condition vs., control no-identity condition) and (expanded identity conditions vs. the other two collapsed together) on self-enhancement and self-transcendent value endorsement from pre to post-test prosocial and achievement reactions times, perceived integration, and integration change score.

Self-enhancement values. There was a trend for the effect of condition on changes in self-enhancement values $F(2, 353) = 2.20$, $p = .11$. All participants' levels of self-enhancement decreased from pre to post-test. When looking at post hoc comparisons, endorsement of self-enhancement values decreased significantly more for participants in the expanded condition (M = -.76, [-1.16, -.36]; $p = .04$) than for participants in the traditional identity condition, M = -.16,-[-

.55, .24]. Self-enhancement values did not differ significantly between the traditional condition and the control condition, $F(2, 353) = .26$, $p = .37$.

Further, because I expected that the traditional student identity is the default (achievement-focused) way that most students view their student identity, I decided to collapse across the traditional and control conditions. When testing the effects of the expanded condition against the collapsed conditions, there was a marginal effect of condition on changes in self-enhancement values $F(1,354) = 3.60$, $p = .06$. See Figure 11.

Self-transcendent values. A second between subjects one-way ANOVA testing the effect of condition (traditional vs., expanded vs., control) on self- transcendent values (e.g., benevolence and universalism) was conducted. I found that there was no significant main effect of condition on changes in self-transcendent values, $F(2,353) = .97$, $p = .38$. There was also no main effect of condition when collapsing across the traditional and control conditions, $F(1,354) = 1.68$, $p = .19$. See Figure 12.

I decided to dissect self-transcendent values into its component parts (e.g., benevolence and universalism) and test the effects of the condition on each of these sub- components. There was a marginal effect of condition on changes in benevolent values from pre to post test, $F(2, 353) = 2.54$, $p = .08$. Post hoc comparisons illustrate that participants in the expanded condition increased their benevolent values ($M = .904$, [.30, 1.51]) significantly more ($p = .06$) than participants in the traditional identity condition ($M = .124$, [-.45, .70]) and the control condition ($p = .04$; $M = .04$, [-.53, .62]). See Figure 13. When collapsing the traditional and control conditions, this effect becomes more pronounced, $F(1,354) = 5.05$, $p = .03$. Participants in the expanded condition increased their benevolent values ($M = .904$, [.30, 1.51]) significantly more than participants in the other two conditions ($M = .085$, [-.32, .49]). See Figure 14. There was no

significant effect of condition on universalism values, whether all three conditions were assessed, $F(2,353) = .420$, $p = .657$ or the two conditions were combined (expanded vs. traditional and control),$F(1,354) = .169$, $p = .681$.

Me/not me self association. I tested the effect of condition on the strength of associations between the self with prosocial and achievement traits/values. Two separate between subjects one-way ANOVAs with condition (traditional vs., expanded vs., control) on prosocial trait reaction time (ms) and on achievement trait reaction time (ms) were conducted. There overall effect of conditions on prosocial reaction time was not significant, $F(2,359) = 1.91$, $p = .15$. However, students in the expanded condition were marginally faster at associating the prosocial traits with their self concepts than students in the control condition ($p = .08$) and compared to those students in the traditional condition ($p = .11$). See Figure 15. When the traditional and control conditions were collapsed and compared to the expanded condition, there was a significant effect of condition, $F(1,360) = 3.79$, $p = .05$. The expanded condition yielded faster reaction times for prosocial traits ($M = 768.65$, [744.89, 792.41]) compared to the other conditions ($M = 789.191$,[763.63, 814.75]). See Figure 16.

Next, I tested the effect of condition on achievement reaction times (ms). There was no effect of condition across all conditions, $F(2, 359) = .94$, $p = .39$, nor when collapsing across the traditional and control conditions , $F(1,360) = 1.16$, $p = .28$.

Change in prosocial-achievement integration. Then, I tested whether there were effects of condition on changes in feelings of integration (between prosocial and achievement motives) from pre to post-test. There was no effect of condition when testing each of the three conditions against each other, $F(2,359) = .907$, $p = .405$, nor when collapsing across the traditional and control conditions, $F(1,359) = .062$, $p = .804$.

Perceived integration. There was no main effect of condition on our adapted Aron et al., scale capturing the perceived overlap between prosocial and achievement motives, $F(2,360) = .063$, $p = .939$. Although I did not have specific predictions for main effects of condition on other outcomes, I also explored the effects of condition on all other outcomes.[12]

High Interference Students.

After having investigated the manipulation checks above as well as finding no main effects of condition on our other (non-manipulation check) dependent variables, I next investigated the possible moderating role of interference. My hypotheses were such that I expected high interference students to benefit the most from the expanded/integrated condition. I hypothesized that high interference students would see benefits within the expanded condition on academic outcomes (e.g., anticipated GPA, perceived academic performance, post-baccalaureate degree intentions) as well as psychological outcomes (e.g., student-role authenticity, mood, and increases in prosocial achievement integration) and prosocial behaviors. Again, none of the main effects of condition on these outcomes will be reported as there were no main effects of condition on our outcomes in the above tests (see Footnote 9). Also, while there were no effects of condition on one of our manipulation check variables (change in integration; Time 2 minus Time 1) this continued to be assessed with the outcome variables. I hypothesized that a possible cause for no main effects on changes in integration could be because the expanded condition is particularly effective for certain (vulnerable) students such as those high in interference, or lower

[12] Tests for main effects of condition were intended as manipulation checks with specific hypotheses for changes in the above mentioned outcomes (specifically). Main effects tests of condition were still conducted for all other outcomes, however, main effects were not predicted for the other outcomes. All other outcomes whether investigated between three conditions or collapsed across traditional and control revealed non-significant main effects with the exception of mood. Results are presented in Figure 17.

income, or for women as compared to men. Thus, this variable is assessed as an outcome within all two-way and subsequent three-way interactions.

To test these hypotheses I regressed participants' scores on each of the outcomes on student identity condition, centered pre-measure interference, and the interaction between interference and student identity condition. Since the experimental condition had three levels, in all analyses it was effects coded such that there was a contrast between the no-identity control and the expanded condition (control= -1, traditional = 0, and expanded = 1) and a contrast between the no-identity control and the traditional condition (no-identity control= -1, expanded = 0, and traditional = 1). Within this text, I present only results for significant moderations.

Anticipated GPA. There was a marginal interaction between interference and the contrast between no-identity control compared to the traditional student identity condition, *b*= .06, *t*(345) = 1.89, *p* =.06, 95% CI [-.01, .13]. There was a trend for the interaction between interference and the contrast between no identity control compared to the expanded student identity condition, *b* = .05, *t*(345) = 1.54, *p*=.13, 95% CI [-.01, .11].

There was a main effect of interference for participants within the control condition, *b*= -.05, *t*(345) = -2.03, *p*=.04, 95% CI [-.10, -.01]. Specifically, for those participants in the control condition, those who are higher in interference (+1 SD; Aiken & West, 1991) had significantly lower anticipated GPA, even after controlling for current GPA, as compared to low interference students (- 1 SD). However, there was no main effect of interference for participants within either the expanded condition, *b*= -.001, *t*(345) = -.03, *p*=.97, 95% CI [-.04, .04], or within the traditional condition, *b*= .01, *t*(345) = .56, *p*=.57, 95% CI [-.03, .06]. These results suggest that the gap in academic motivation (anticipated GPA) between low and high interference students

exists within the control condition however, the two experimental groups caused this gap to disappear. Results are depicted in Figure 18.

.***Perceived academic performance.*** Analyses revealed a marginal interaction between interference and the contrast between the no-identity control condition and the traditional student identity condition, *b*= .42, *t*(345) = 2.59, *p*=.09, 95% CI [.10, .74]. There was a significant interaction between interference and the contrast between the no-identity control condition and the expanded student identity condition, *b*= .47, *t*(345) = 3.03, *p* =.01, 95% CI [.17, .778.

There was a main effect of interference on perceived academic performance within the control condition, *b* = - .75, *t*(345) = - 6.27, *p* =.001, 95% CI [-.98, -.51]. This was such that, the higher the level of interference the lower the level of perceived academic performance. The main effect for interference remained significant but weaker within the expanded (*b* = - .28, *t*(345) = - 2.77, *p* =.01, 95% CI [-.47, -.08]) and traditional conditions, *b* = - .33, *t*(345) = - 3.01, *p* =.01, 95% CI [-.54, -.11]. While these main effects illustrate that the gap between low and high interference students remains across all conditions, simple slopes analyses revealed that high interference students in the expanded student identity condition had significantly greater perceived academic performance as compared to high interference students in the control condition, *b* = .433, *t*(345) = 2.205, *p* =.028, 95% CI [.047, .819]. Results are presented in Figure 19.

Prosocial behavior. Analyses revealed a marginal interaction between interference and the contrast between the no-identity control condition and the expanded student identity condition, *b*= .79, *t*(345) = 1.70, *p*=.09, 95% CI [-.12, 1.70]. There was no interaction between interference and the contrast between no-identity control condition and the traditional student identity condition, *b* = .56, *t*(345) = 1.17, *p*=.24, 95% CI [-.38, 1.51]. There was a main effect of

interference on minutes of helping offered to the research assistant within the expanded condition, *b*= .54, *t*(345) = 1.82, *p*=.07, 95% CI [-.04, 1.12]. This was such that the higher a student scored on interference, the more minutes of help they offered compared to lower interference students. Results did not show this same difference between lower and higher interference students and helping behavior within the control condition, *b*= -.24, *t*(345) = -.68, *p*=.49, 95% CI [-.94, .45], or within the traditional condition, *b*= .32, *t*(345) = .99, *p*=.32, 95% CI [-.31, .96]. [13] This suggests that the expanded condition may have resonated particularly with high interference students and boosted their prosocial behavior. Results are presented in Figure 20.

Student Socioeconomic Status.

Next, the same analyses were conducted investigating income, rather than interference as a moderator. My hypotheses were that lower income students would similarly benefit the most from the expanded integrated condition with respect to academic outcomes (e.g., anticipated GPA, perceived academic performance, post-baccalaureate degree intentions) as well as psychological outcomes (e.g., student-role authenticity, mood), prosocial behaviors, and changes in prosocial-achievement integration.

Anticipated GPA. Analyses revealed a significant interaction between income and the contrast between the no-identity control condition and expanded student identity condition, *b* = -.021, *t*(345) = -1.895, *p* = .059, 95% CI [-.044, .001]. There was a marginal interaction between income and the contrast between the no-identity control condition and traditional student identity condition, *b* = -.019, *t*(345) = -1.735, *p* = .084, 95% CI [-.041, .003]. There was a main effect of

[13] I had no specific predictions for two-way interactions for the manipulation check dependent variables. Indeed all of the manipulation check dependent variables (with the exception of change in self-enhancement values) had non-significant results. Results for change in self-enhancement values are presented in Figure 21.

income within the control condition such that those students higher in income also anticipated a higher GPA compared to lower income students, b = .022, t(345) = 2.777, p = .006, 95% CI [.006, .038]. However, this gap in academic achievement aspirations between low and high income students, no longer exists within the expanded condition, b = .001, t(345) = .066, p = .947, 95% CI [-.015, .016], nor within the traditional condition, b = .003, t(345) = .336, p = .737, 95% CI [-.013, .018]. See Figure 22.

Prosocial behavior. Next, there was a significant interaction between income and the contrast between the no-identity control condition and the expanded student identity condition, b = -.314, t(345) = -1.930, p = .054, 95% CI [-.635, .006]. There was no significant interaction between income and the contrast between the no-identity control condition and traditional student identity condition, b = -.084, t(345) = -.524, p = .600, 95% CI [-.398, .231]. There was a trend of an effect for income within the expanded condition such that lower income students helped for a longer amount of time compared to higher income students, b = -.176, t(345) = -1.489, p = .137, 95% CI [-.409, .057]. There was no effect of income within either the control condition, b = .138, t(345) = 1.235, p = .218, 95% CI [-.082, .359], or traditional condition, b = .-.203, t(345) = -.509, p = .611, 95% CI [-.985, .580]. See Figure 23.

Student Gender.

Next I completed the same analyses as above, however, I investigated gender as a moderator, instead of income. Because all predictors were categorical, 2 (gender: males = 0, females = 1) × 3(condition: traditional, expanded, & control) ANOVAs were conducted.

Prosocial behavior. There was a marginal main effect of gender, F(1, 362) = 1.01, p = .07, η_p^2 = .003. There was no main effect of condition, F(2, 362) = .443, p = .643, η_p^2 = .002.

There was a marginal interaction between gender and condition, $F(2,362) = 2.632$, $p = .07$, $\eta_p^2 = .015$.

Specifically, females in the expanded condition were significantly (M_{diff} =.13 [.013, .249]; $p = .02$) more likely to provide assistance at the end of the study ($M = .91$ [.87, .95]) as compared to female students in the traditional student identity condition, $M = .781$ [.72, .84]. Females in the expanded condition were also marginally ($M_{diff} = .10$ [-.02, .21]; $p = .11$) more likely to provide assistance as compared to female participants in the control condition, $M = .82$ [.73, .90]. There were no other significant simple effects. Results are presented in Figure 24.

Change in prosocial-achievement integration. There was no main effect of gender, $F(1, 359) = 2.06$, $p = .15$, $\eta_p^2 = .01$. There was no main effect of condition, $F(1, 359) = 1.03$, $p = .36$, $\eta_p^2 = .006$. There was a marginal interaction between gender and condition, $F(2, 359) = 2.43$, $p = .09$, $\eta_p^2 = .01$. Specifically, simple effects tests revealed two significant results. First, levels of integration decreased significantly more (M_{diff} = -.57[-.71, -.43]; $p = .04$) for men in the expanded condition (M = -.88 [-1.03, -.73]) than men in the traditional condition (M = -.306 [-.54, -.18]). Also, there was a significant difference within the expanded condition (M_{diff} = -.70 [-1.21, -.18];$p = .01$) between men (M = -.88 [-1.03, -.73]) and women (M = - .18 [-.53, .19]) Results are presented in Figure 25.

High Interference Women.

Next I aimed to assess whether women and men with trait levels of higher or lower interference benefited from a particular framing of the student identity. My hypothesis was that there shouldn't be much of an effect for men or women of low interference however, women

with higher levels of prosocial-achievement interference may benefit the most from the expanded condition. I had no specific hypotheses for the men in the sample.[14]

To test this I conducted a regression test with gender (males = -.50, females = .50), interference (+/- 1 SD from the mean) and condition (traditional, expanded, and control) and their interactions as predictors on all our outcomes of interest. Because our experimental condition had three levels and because we were testing three-way interactions, in order to be able to interpret these results all analyses were effects coded such that there was a contrast the expanded condition versus the two others combined (expanded = 1, traditional and control = -.5) as evidence from our manipulation checks revealed that the traditional and control conditions often function similarly. Within this text for all three-way interactions I present only results for significant three way interactions with these contrasts on an outcome.

Change in prosocial-achievement integration. There was a three-way interaction for gender × interference × condition. Specifically, the contrast between the expanded condition versus the other two conditions (traditional and control) was significant, $b = .56$, $t(358) = 2.25$, $p = .03$, 95% CI [.07, 1.04]. Thus, I followed up this significant three-way interaction by looking at the two-way interaction between interference and condition for females and males separately.

Among women there was a significant interference by condition interaction. Specifically, for the contrast between the expanded condition and the control condition, $b = .497$, $t(210) = 1.99$, $p = .04$, 95% CI [.04, .96]. There was no significant interactions among males, all ps > .240. I then followed up the significant two-way interaction by investigating the simple slopes among the females.

[14] Up to this stage men were not a specific part of my investigation, nor had they yielded significant results. Mood did illustrate a significant three-way interaction driven by men. These results are presented in Figure 26.

Simple slopes analyses reveal that there is a significant effect of interference within the expanded condition, b = .504, t(210) = 3.363, p = .001, 95% CI[.208, .799], this is such that high interference female students have greater increases in feelings of integration as compared to low interference female students within the expanded student identity condition. There were no significant effects of interference within the traditional or control conditions, all ps >.150. Further simple slopes analyses reveal that among high interference females, those in the expanded condition increase in their feelings of integration significantly more so than high interference females in the control condition, b = .814, t(210) = 2.753, p = .006, 95% CI[.231, 1.396]. Of importance is that the only condition in which either the high or low interference females had an increase in feelings of integration, was within the expanded condition. There were no significant contrasts or simple slopes among the low interference females. Results are presented in Figure 27.

Low Income High Interference Students.

Next, I aimed to assess whether lower or higher income students with lower or higher trait levels of interference benefited more from the expanded or traditional framing of the student identity. I hypothesized that low income students may benefit the most from the expanded condition, but specifically low income students with high levels of prosocial-achievement interference. I had no hypotheses for the high income students. To test this I conducted an income (+/- 1 SD from the mean) x interference (+/- 1 SD from the mean) x 3(condition; traditional, expanded, and control) regression analysis on all our outcomes of interest. Again, because our experimental condition had three levels, in all analyses it was effects coded such that there was a contrast between the expanded condition versus the two others combined (expanded

= 1, traditional and control = -.5) and a contrast between the traditional condition and control condition (no-identity control= 1, expanded = 0, and traditional = - 1).[15]

Perceived academic performance. There was a significant three way interaction between income, interference and condition. Specifically, there was a significant three-way interaction between income, interference, and the contrast between the expanded condition versus the others, b = -.075, $t(347)$ = -2.186, p = .029, 95% CI[-.143, -.008]. I further investigated this three-way interaction by assessing the interactive effect of interference and condition separately among low and high income students . To simplify data analyses, I created a dichotomous variable for income from the original 1-9 income scale. Thus, students who designated on the 9 point scale for parental income, a value of 4 or less were coded as "lower income" (M = $30,001) and those who designated a parental income value of 5 or higher, were coded as "higher income" (M = $180,001).

There was a significant interference by condition interaction among lower income students. Specifically, there was an interference by condition interaction for the contrast between the no-identity control condition and the expanded condition, b = .812, $t(106)$ = 3.159, p = .002, 95% CI[.302, 1.321]. There was also a significant contrast between interference and the no-identity control and traditional condition, b = .644, $t(104)$ = 2.266, p = .026, 95% CI[.080, 1.207]. There was no significant interference by condition interaction among higher income students.

[15] Up to this point in the data we largely had hypotheses and significant results surrounding lower income students. Results presented within the text are for significant three-way interactions driven by low income students. Mood was the only outcome with a significant three way interaction driven by high income students. These results are presented in Figure 28.

Among the lower income students, there was a main effect of interference within the control condition, b = -1.029, t(104) =-5.262, p = .001, 95% CI[-1.417, -.641]. Among the lower income students in the control condition, those of higher interference have significantly poorer perceived academic performance. There was a similar main effect of interference within the traditional condition, b = -.385, t(106) = -1.869, p = .064, 95% CI[-.794, .023]. This gap in perceived academic performance between lower and higher income students does not exist within the expanded condition, b = -.217, t(106) = -1.304, p = .195, 95% CI[-.548, .113]. Further, these results are qualified by simple slopes illustrating that high interference low income students perceived better academic performance within the expanded condition as compared to the control condition, (p = .02). Results are presented in Figure 29.

Change in prosocial-achievement integration. There was a significant three way interaction between income, interference, and condition on changes in integration from pre to post-test. Specifically, for the contrast between the expanded condition and the other two conditions, b = -.18, t(346) = -3.80, p = .001, 95% CI[-.27, -.08]. There was no significant two-way interaction (interference × condition) among higher income students. There was an interference by condition interaction among the lower income students. Specifically there was a significant interaction between interference and the contrast between the no identity control and the traditional condition, b = .72, t(105) = 2.09, p = .04, 95% CI[.04, 1.41]. There was also a significant interaction between interference and the contrast between the no identity control and the expanded condition, b = .96, t(105) = 3.05, p = .003, 95% CI[.34, 1.58].

Among the lower income students there was a significant effect of interference within the expanded condition, b = .664, t(105) = 3.247, p = .002, 95% CI[.259, 1.070]. Higher interference students felt higher levels of integration as compared to lower interference students. There was a

similar marginal effect of interference within the traditional condition, b = .428, t(105) = 1.700, p = .092, 95% CI[-.071, .927]. Importantly, simple slopes analyses among the high interference students illustrated a significant increase in feelings of integration within the expanded condition as compared to the control condition, b = 1.353, t(105) = 3.284, p = .001, 95% CI[.536, 2.169]. There was no significant effect of interference within the control condition. Results are presented in Figure 30.

Low Income Women.

Next, I aimed to assess whether there was an interactive effect between gender and income. Specifically I was interested in assessing whether lower income women benefited most from the expanded or traditional framing of the student identity. I hypothesized that lower income women would benefit the most from the expanded condition. I had no specific hypotheses for men or higher income students.[16] To test this I conducted an income (+/- 1 SD from the mean) × gender (males = -.5, females = .5) × 3(condition; traditional, expanded, and control) regression analysis on all our outcomes of interest. Again, because the experimental condition had three levels, in all analyses it was effects coded such that there was a contrast between the expanded condition versus the two others combined (expanded = 1, traditional and control = -.5) and a contrast between the traditional condition and control condition (no-identity control= 1, expanded = 0, and traditional = - 1).

Prosocial behavior. There was a significant three-way interaction between gender, income, and condition, b = .039, t(349) = 2.105, p = .036, 95% CI[.033, .076]. I then assessed the two-way interactions (income × condition) separately for men and women. There was a marginal

[16] There was a significant three way interaction for student role authenticity. This was driven by high income men, who felt the most authentic within the traditional condition compared to control. Results are presented in Figure 31.

two way interaction for women between income and the no-identity control condition and traditional condition, b = -.042, t(205) = -1.708, p = .089, 95% CI[-.091, .007]. There was no significant two-way interaction for men.

Simple slopes analyses revealed that for low income women, those in the expanded condition displayed marginally more prosocial behavior than low income women in the control condition, b = .16, t(205) = 1.80 p = .07, 95% CI[-.01, .32]. These results are present in Figure 32.

In summary, manipulation check analyses did in fact reveal there was a strong effect of condition on changes in prosocial (i.e., benevolent) values and achievement (self-enhancement) values. The expanded/integrated identity caused a stronger connection between prosocial traits to the students' self-concept (me-not me task). Importantly, the expanded condition yielded both increases in self-transcendent values as well as corresponding decreases in self enhancement values, offering initial support for Schwartz and colleagues theory that it is difficult (near impossible) for individuals to equally hold these values and motives at a given time. Results did not however, illustrate a main effect for the expanded condition in increasing perceptions of integration, thus I proceeded to text my next series of hypotheses; that the expanded condition would be most beneficial among high interference, low income and women students.

After a series of tests on two-way interactions (interference × condition, income × condition, and gender × condition) results illustrated that the expanded condition motivated prosocial behavior specifically for lower income students, high interference students, and women as compared to men. Importantly, results further illustrated that while the expanded condition has the power to increase prosocial behavior, especially among students with a propensity towards greater prosociality (lower income) as well as for students with more academic vulnerabilities

(low income and high interference) the expanded condition was also able to preserve and increase achievement motives among these specific students. This suggests it can be utilized as a powerful tool in the education domain. Further, this suggests that perhaps this exercise can assist students in integrating these normally conflicting values and motives especially among women as compared to men.

Last, analyses aimed at narrowing down the effect of the expanded condition for even more vulnerable students (e.g., high interference low income, and high interference women) illustrated that allowing these students to think about and write about the student identity in this way, increased feelings of prosocial-achievement integration. In summary, study 4 illustrates that the expanded condition can increase prosocial values and behaviors while preserving and boosting achievement motives among academically vulnerable college students. Further, this expanded condition seems to allow an opportunity for high interference students to (1) think about ways that they can integrate prosocial and achievement values and (2) perceive that the broader university environment calls for and values inclinations (prosocial) that up to this point they may have thought would be a detriment in the academic domain.

Chapter 6:

General Discussion

This program of research provides evidence suggesting that women and lower income students tend to have a greater propensity towards prosociality as measured by the empathic concern scale (Study 1) and as assessed with a novel measure of prosocial centrality (Study 3). These same students (women and lower income) rise to the occasion when contending with an achievement-focused identity, such that this motivates them to try hard at academic tasks and during academic social interactions, however, physiological measures indicate this may be more effortful for them (Studies 2a & 2b). Thus, I attempt to measure what I argue may be accounting for this effect, which is perceptions of conflict and mis-match between a student's personal prosocial values and the achievement-focused student identity/role. Results indicated that students who perceive more conflict or "prosocial-achievement interference" between these motives go on to have poorer academic and psychological well-being outcomes (Study 3). Further, results from an experiment (Study 4) manipulating the framing of the student identity as either purely achievement-focused or as consisting of both achievement and prosocial values, traits, and acts, illustrated that the expanded framing of the student identity motivated prosocial behavior specifically, for lower income students, high interference students, and women as compared to men. Importantly, results further illustrated that while the expanded condition has the power to increase prosocial behavior, especially among students with a propensity towards greater prosociality (lower income) as well as for students with more academic vulnerabilities (low income and high interference) the expanded condition was also able to preserve and increase achievement motives among these specific students.

Contributions

Building beyond the current literature on prosociality. The current work extends beyond the known benefits of prosociality and assesses when and where prosociality provides benefits and possible costs. Previous research has solidly established positive outcomes for individuals who enact prosocial behaviors, such as less problem behavior in children (Eisenberg et al., 2006) and better psychological health, specifically lower levels of depression and better self-esteem (Dunn, Aknin, & Norton, 2008) as well as better physical health (Musick, Herzog, & House, 1999). Thus, far work on prosociality has illustrated the seemingly universal list of positive benefits that come from prosocial affect, motives, and behaviors. However, the work in this dissertation importantly highlights when (highly achievement motivated students), where (an achievement-focused domain like an elite university), and for whom (lower income and women) prosocial motives can come at a cost.

This work did provide several pieces of evidence adding to the growing literature on social class and prosociality. Thus far, literature on social class and prosociality has illustrated that lower social status individuals tend to be more emotionally prosocial in regards to compassion and emotion (Stellar et al., 2012). Results from Study 1 did in fact build upon this work by illustrating a negative relationship between income and a student's propensity for empathic concern for others. Further, this idea was supported again and again throughout this dissertation via a negative relationship between income and self-transcendent values and a positive relationship between income and self-enhancement values. Thus, these findings dovetail nicely with a plethora of other studies illustrating that despite lower income having less resources to give and the most to lose by giving, they do in fact trust more and give more resources to others in need (Piff, Kraus, Cote, Cheng, & Keltner, 2010).

More recently however, there have been arguments against this idea and evidence suggesting that lower income status does not necessarily imply greater prosociality or giving and that this effect is more nuanced depending on the type of prosocial behavior and measure used (Korndorfer, Egloff, & Schmuckle, 2015). Results from Studies 3 and 4 did not show a perfect nor simple relationship between income and prosocial centrality. This echoes the idea that the relationship between prosociality and socioeconomic status varies depending on the measure used. Importantly, a large portion of the literature on social class and prosociality has also offered a cultural reasoning behind these differences. Though not directly tested, many of the arguments posed for differences in prosociality among individuals from different socioeconomic backgrounds has centered on cultural differences in contextualism and interdependence. Yet how do we know when values and culture are overlapping or when they capture different motives?

When do values and culture diverge? One of the primary growing perspectives (lenses) applied to the study of socioeconomic status is the cultural perspective. This argues that social class or socioeconomic status is not merely a demographic variable indicating monetary resources but is another way of signifying a whole host of differences in social contexts, values, and behavioral scripts (Bordieu, 1979; Markus & Kitayama, 2003; Stephens, Markus, & Townsend, 2007). While I agree that socioeconomic differences in prosociality could in fact be due to differences in "other-orientedness' or "contextual social cognitive tendencies" stemming from culture, this research did not find a relationship between income and measures that have been traditionally used to capture culture. Studies 1 and 3 did not show any relationship between income and the Hardin scale of Relative Interdependence. Further, I tried to capture these cultural differences utilizing the cultural motives for attending college measure (Study 3) and found no relationship. This was most likely because the measure used to capture socioeconomic

status (income) differed from college generational status used in the original work (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). However, this still brings up an important question about when values directly follow from culture.

Results from study 1 importantly illustrated that while there was a relationship between empathy and particular social identities (e.g., gender and income) that have been argued to differ based on cultural motives (e.g., self-construal and interdependence), empathy itself had no relationship to self-construal. This suggests that at least within this data, culture is not the mediating pathway between women/income and prosociality. Further, in Study 3 prosocial centrality was marginally related to self-construal and prosocial-achievement interference was also related to self-construal and cultural motives, yet interference was still a significant predictor of our academic and well-being outcomes above and beyond cultural factors. While the answer to this question regarding when values are distinct from culture is outside the scope of the experiments, the results do show that values which may seem tightly connected to culture, can still function through their own independent pathways.

Identity, values, and the education setting. This program of research importantly tried to bridge the connection between identity and values. This work illustrates that not only can identities be in conflict with each other but a similar framework can be applied to the activation of a particular identity and the values that work in service of that identity. Importantly this work (Study 4) illustrated that cued identities do in fact carry a general readiness to act and make sense of the world. Findings from study 4 illustrated that high interference students normatively (control condition) perceive their academic performance to be poorer than do low interference students. However, high interference students perceive their academic performance to be better in the expanded condition as compared to the control condition. This suggests, possibly, that

normally (within the control and traditional conditions) the educational institution is making it ambiguous as to whether prosociality belongs/fits in this domain. However, when the student identity is framed in such a way that it values prosociality, high interference students then perceive their inclinations as fitting into the broader academic domain and their whole outlook on their performance and their role there as a student changes for the positive.

The integrated and expanded way of framing the student identity is relevant to work by Yeager and colleagues (2015) who developed interventions that emphasize prosocial motives for learning. Further, this manipulation is similar to work by Diekman and colleagues (2011) such that it is considering goal and role congruity. This manipulation is also taking into account the work by Stephens and colleagues (2012) which addresses the beneficial effects of a match in cultural motives for attending university, for students with specific backgrounds. Last, this work is also including Walton & Cohen (2011) theory of belonging in the college environment.

To situate the uniqueness of the approach in Study 4, I argue that all of the aforementioned theories should be considered symbiotically. It is aimed specifically at those students with a propensity towards prosociality and more specifically those students who feel that their personal prosocial values and motives do not match or fit into the highly achievement-focused elite university. It is important for these students to perceive the university itself and the student identity and that role, as one with room for and prescriptive assumptions for prosocial motives and behaviors. These students need to feel that the college student identity (a role for which they are all highly motivated to live up to) is one that values their prosocial inclinations. To believe that this environment and the identity accepts and calls upon these prosocial traits, should effectively mean that their prosocial and achievement values will not be perceived at such odds with each other. These results dovetail with other findings illustrating context sensitive

nature of identities and their ability to incite motivation (Oyserman, Destin, & Novin, 2015). These results illustrated that while thinking of high achieving identities can incite academic motivation (Study 2a) this is physically effortful (Study 2b). Further, thinking of high achieving identities that include other traits and values that match your own (Study 4) can still incite motivation as well as preserve prosocial tendencies (helping behavior). Importantly, these integrated identities have the power to allow certain students (high interference) who normally feel that their work as a student is not up to par in the achievement-focused setting, to perceive that their behavior and conduct as a student thus far is in fact worthy.

This work dovetails nicely with the recent work on providing a prosocial purpose for learning by Yeager and colleagues (2015). They utilized a prompt which read "in addition to making money many students (sometimes secretly) are motivated to do well in school in order to gain skills that can be used for prosocial ends". My manipulation directly attempts to quell the notion that prosocial values or goals need be "secretly" held within the individual and more importantly withheld from college setting. Rather it attempts to suggest that prosocial behaviors, values, and goals are just another part of being a good student. My work attempts to illustrate to the student that the expectations of the university for being a "good" student include academic success as well as prosocial motives and behaviors. This provides some support for framing the expectations of the university in this expanded way but specifically for high interference or low income students only. Importantly, this work was able to illustrate that it is possible to increase prosocial motives and behaviors while preserving achievement motives.

Limitations & Future Directions

There were some limitations to the studies. There were some inconsistencies in regards to the role of interference and its relationship to social identities such as gender and income. Whereas in study 3 there was no relationship between gender/income and interference, in Study 4 women had significantly greater levels of interference but there was still no significant relationship between income and interference. This could be due to differences in samples (Mturk vs. Northwestern) from Study 3 to 4. However, this program of research attempted to determine whether the differences in prosociality between social groups was due possibly to their greater levels of perceived interference. These data are unable to fully answer why women, lower income students, and high interference students, are similarly benefited by the expanded condition when it is not consistently clear that women and lower income students are also necessarily higher in interference. Further, although the expanded condition seemed to assist academic perceptions as well as prosocial behaviors, I was unable to illustrate that this way of framing the student identity led to greater feelings of authenticity for high interference students (or even for women or low income students).

Importantly, if this work were to be utilized in the academic setting there are some boundaries. Specifically, there was some evidence to suggest that high income men were somewhat reactant to this presentation of the student identity, such that it was detrimental to their mood and feelings of authenticity as compared to the traditional condition. Thus, further research investigating the nuances of prosocial-achievement interference, its relation to gender and social class, and its influence on other important outcomes is warranted.

Intersecting identity and context - from college to the workforce. Current models of prosocial purpose assume motivation to serve the public as a stable individual difference (Perry & Wise, 1990). My work, extends beyond this idea to suggest that these individual differences

can interact with the context (making explicit the norms for a student from the given university) in complex ways to predict prosocial-achievement interference and negative outcomes. Research on context and automatic biases and stereotyping can offer some interesting future directions for this work specifically with respect to how these prompts may have functioned differently at different universities and school contexts.

For example, the prompts regarding the student identity (Study 4) were attempting to both change the assumptions about the norms of the university with respect to prosociality as well as motivate students to include more prosocial goals in the planning of their college career. Similarly, work by Dasgupta and colleagues (2004) finds that changing the norms about gender and leadership via exemplars of successful women leaders yields weaker gender stereotypes (women as non-leaders). Interestingly, comparing across samples of students who come from co-educational vs. all-women colleges yields differences in the strength of gender stereotypes. These data suggest that living and functioning in an educational setting that provides exemplars (women in leadership positions at the university) can extinguish gender stereotypes among college women. This illustrates the power of the social context of universities in creating social norms, assumptions, and prescriptive information that students then build their future selves and goals.

Applying a similar analysis based on type of university (i.e., community college vs. research tiered 1 school) could manifest divergent results. Future analyses and studies could investigate whether certain types of colleges and universities are more successful than others at providing a social norm where prosocial purpose is perhaps exemplified within its leaders or the overall school rhetoric. For Study 3, I attempted to conduct a preliminary test of whether baseline levels of prosocial-achievement interference differed based on those students at

vocational, community, and non research 1 tier colleges as compared to larger more competitively known research universities however, there were no significant differences in interference based on type of university. The sample size was skewed towards representing students from larger research based universities, suggesting that further analysis could be warranted. Also, there could be some sort of interactive effect of fit between type of student and the university that results in significant differences in perceptions of prosocial-achievement interference. Future studies could investigate this idea of fit between the university and student in predicting interference. Similar to the research on university context and gender stereotypes it would be important to isolate the mechanism on the part of the university environments (professor participation, school resources, volunteer clubs) that motivates students to perceive their student role in a more integrated as compared to traditional way. It would also be worthwhile to investigate the micro-context such as chosen major, that influences perceptions of prosocial-achievement interference.

For example, levels of prosocial-achievement interference may be lowest for students who have chosen majors with prosocial purposes (e.g., pre-med or social work). Understanding the initial motivations to choose these prosocial majors is important, as well as understanding or measuring the recursive process of the prosocial major reinforcing initial prosocial motives. Conversely, it may be the case that there are no objectively "prosocial majors" rather, particular students may have a stronger motivation or greater propensity to apply a prosocial purpose to most any major. Further, investigation into capturing the directionality of this phenomenon would be interesting.

This work can also extend beyond the domain of education and the university setting. Specifically, it would be worthwhile to assess whether these same feelings of conflict and

interference apply to employees. For example, there is research illustrating a complex relationship between work meaningfulness and volunteering meaningfulness in predicting motivation towards volunteering. The results yield mixed findings illustrating that in general an employee's desire for meaningful volunteer experiences grows from positive work experiences that act as a catalyst for the employee to seek out further volunteering opportunities (Rodell, 2013). Yet, there were also findings illustrating that employees who report lower levels of meaningfulness in their jobs may also increase volunteering to the extent that the volunteering provides the desired sense of meaning, that is missing from their job (Rodell, 2013).

Similar motivational processes could be at work in Study 4. One could hypothesize that if the student identity is perceived as highly fixed on achievement motives, students will perceive a lack of prosociality in that domain and thus, seek to fulfill this need in other domains. This may motivate students to fulfill this need by joining volunteer clubs or by enacting prosocial behavior with greater frequency, or choosing to be prosocial outside of the college setting altogether. Conversely, the prosocial and integrated framing of the student identity could motivate students to further continue to be prosocial by serving as an initial "wetting of the appetite for prosociality" as conjectured by Rodell (2013). Further, Rodell employed statistical analyses to investigate the idea that employees are motivated towards volunteering either to fulfill something that is lacking at the job, or because the job has initially prompted a prosocial interest which the employee is then choosing to continue to nurture (via volunteering or charity). My measure of prosocial-achievement interference could be modified to directly isolate whether their employees are finding their employment goals and motives at odds with an internal prosocial motive. Employers could utilize a modified version of this measure to assess whether its employees

(more importantly *which* employees) perceive conflict and more directly provide specific incentives and outlets to improve their well-being.

The studies in this work suggest a need for further research that investigates how to utilize identities as a way to encourage students to achieve academically as well as promote prosocial motives and behaviors. Importantly, this work offers preliminary considerations that universities can utilize to create competitive yet psychologically healthy students. At the very least, universities can begin to isolate high interference students and begin to work to better serve their needs. This body of work also highlights the need for further research to assess the complex conflict between prosociality and achievement for specific social identities and within different contexts. Last, this work illustrates the complex relationship between gender and socioeconomic status, warranting further research that can disentangle when and why gender and social class are similarly motivated and when and why they function distinctly in education contexts and beyond.

Table 1.

Study1: Bivariate Correlations Matrix

	$Sample_2$ Mturk			$Sample_1$ College Students		
	Empathic Concern	SES	Gender	Empathic Concern	SES	Gender
Relative Interdependence	.220**	.044 ns	.004 ns	.219*	.168 ns	.125 ns
SES	-.144*	1	-.102 ns	-.08 ns	1	-.139 ns
Gender	.300**	-.102 ns	1	.218*	-.139 ns	1

Note: Gender is coded as 0 = males, 1 = females. **p < .01 *p <.05 †p < .08

Table 2.

Study 3: Factor Loadings Analysis With Varimax Rotation of Prosocial-Achievement Interference

Item	Conflict	Ease
1. I feel I'm not taken seriously in my rigorous academic pursuits because I'm a caring/helpful individual	**.768**	.220
2. Being a caring/helpful individual makes me less successful as a high achieving universisty student.	**.770**	.268
3. Being a caring and helpful indiviudal makes me more capable as a high achieving university student. (R)	.262	**.862**
4. I feel because I'm caaring/helpul it's easier for me to fit the definition of a high achieving successful student. (R)	.201	**.908**
5. I'm concerned that I would have chosen a different major if I were not so caring and helpful.	**.665**	.103
6. I feel that being caring and helpful limit my academic performance.	**.816**	.291
7. I feel that I would perform better academically if I were not so caring and helpful.	**.880**	.416
8. I sometimes feel that if it were not for the demands associated with being a very caring and helpful person, courses that were once difficult would be easier.	**.842.**	.289
9. I feel I can be both a high achieving student and caring and helpful all at the same time. (R)	.484	**.605**

Note. Factor loadings > .50 are in boldface.

Table 3.

Study 3: Intercorrelations Between Factors and Collapsed Interference with Outcomes

Variable	*Interference*	*Conflict*	*Ease*
1. Level in School	-.116†	-.106†	.082
2. Race	.051	.047	-.035
3. GPA	-.255***	-.227***	.192**
4. Prosocial Centrality	-.281***	-.131*	.494***
5. Achievement Centrality	-.078	.009	.243***
6. Academic Performance	-.365***	-.276***	.391***
7. Anticipated GPA	-.233***	_.167**	.273***
8. Degree Intentions	-.176**	-.131*	.192**
9. Self-Esteem	-.201***	-.133***	.260***
10. Depression	.287***	.246***	-.240***
11. Satisfaction with Life	-.201**	-.128*	.272***
12. Prosocial Behavior	.095	.108	-.020
13. Self-Construal	.115†	.154*	.035
14. Cultural Motives	.130*	.179**	.051

Note. † p <.10. *p < .05. ** p < .01.

Table 4.

Study 3: Summary of Hierarchical Regression Analyses Predicting Perceived Academic Performance and Anticipated GPA.

	Perceived Academic Performance				**Anticipated GPA**			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β	β	β	β	B
Race	-.087	-.090	-.089	-.091	.007	-.001	-.006	-.007
Level in School	.045	.049	.048	.038	-.008	.004	.006	.005
Current GPA	.388**	.386***	.390**	.351**	.724***	.705***	.710***	.705
Income	--	-.016	-.014	-.008	---	.007	.008	.008
Gender	---	.016	.017	.030	---	.115**	.114**	.116**
Cultural Self-Construal	----		-.066	-.045	----		.031	.034
Cultural Motives	----		.040	.061	----		.026	.029
Conflict	----	----		-.190**	----	----		-.024
R^2	.178	.179	..183	.216	.520	.533	.535	.535
ΔR^2	.178***	.001	.005	.033**	.520	.013	.002	.001

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 5.

Study 3: Summary of Hierarchical Regression Analyses Predicting Perceived Academic Performance and Anticipated GPA.

	Perceived Academic Performance				**Anticipated GPA**			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β	β	β	β	B
Race	-.087	-.090	-.089	-.082	.007	-.001	-.006	-.004
Level in School	.045	.049	.048	.024	-.008	.004	.006	-.004
Current GPA	.388***	.386***	.390***	.326***	.724***	.705***	.710***	.684
Income	---	-.016	-.014	.011	---	.007	.008	.018
Gender	---	.016	.017	.006	---	.115**	.114**	.110*
Cultural Self-Construal	----		-.066	-.075	----		.031	.027
Cultural Motives	----		.040	.014	----		.026	.015
Ease	----	----		.326***	----	----		.135**
R^2	.178	.179	.184	.284	.520	.533	.535	.536
ΔR^2	.178***	.001	.005	.101***	.520***	.013*	.002	.017**

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 6.

Study 3: Summary of Hierarchical Regression Analyses Predicting Perceived Academic Performance and Anticipated GPA.

	Perceived Academic Performance				**Anticipated GPA**			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β	β	β	β	β
Race	-.087	-.090	-.089	-.090	.007	-.001	-.006	-.007
Level in School	.045	.049	.048	.029	-.008	.004	.006	.001
Current GPA	.388***	.386***	.390**	.324***	.724***	.705***	.710***	.694
Income	---	-.016	-.014	.001	---	.007	.008	.011
Gender	---	.016	.017	.030	---	.115*	.114*	.037
Cultural Self-Construal	----		-.066	-.043	----		.031	.030
Cultural Motives	----		.040	.057	----		.026	-.068
Interference	----	----		-.247***	----	----	-	ns
R^2	.178	.179	.183	.252	.520	.533	.535	.539
ΔR^2	.178***	.001	.0005	.069***	.520**	.013*	.002	.004

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 7.

Study 3: Summary of Hierarchical Regression Analyses Conflict Predicting Post Baccalaureate Degree Intentions.

	Post Baccalaureate Degree Intentions			
Variable	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Race	.067	.066	.063	.062
Level in School	-.184**	-.174**	-.1740**	-.181**
Current GPA	.230***	.189***	.201***	.174**
Income	---	.149*	.153*	.157*
Gender	---	.222***	.222***	.231***
Cultural Self-Construal	----		-.075	-.061
Cultural Motives	----		.091	.105
Conflict	----	----		-.127*
R^2	.075	.138	.149	.163
ΔR^2	.075***	.063**	.010	.015*

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 8.

Study 3: Summary of Hierarchical Regression Analyses Ease Predicting Post Baccalaureate Degree Intentions.

	Post Baccalaureate Degree Intentions			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	.067	.066	.063	.067
Level in School	-.184**	-.175**	-.174**	-.187**
Current GPA	.230***	.189**	.201**	.166*
Income	---	.149*	.153*	.166**
Gender	---	.222***	.222***	.216***
Cultural Self-Construal	----		-.075	-.080
Cultural Motives	----		.091	.077
Ease	----	----		.177**
R^2	.075	.120	.123	.150
ΔR^2	.075***	.063***	.010	.030**

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$.

Table 9.

Study 3: Summary of Hierarchical Regression Analyses Interference Predicting Post Baccalaureate Degree Intentions.

	Post Baccalaureate Degree Intentions			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	.067	.066	.063	.063
Level in School	-.184***	-.175***	-.174***	-.186***
Current GPA	.230***	.189***	.201***	.160*
Income	---	.149*	.153*	.162**
Gender	---	.222***	.222***	.230***
Cultural Self-Construal	----		-.075	-.061
Cultural Motives	----		.091	.101
Interference	----	----		-.168**
R^2	.075	.1384	.149	.174
ΔR^2	.075***	.063***	.010	.026**

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$.

Table 10.

Study 3: Summary of Hierarchical Regression Analyses Conflict Predicting Depression and Satisfaction.

	Depression				**Satisfaction With Life**			
Variable	Step 1 β	Step 2 β	Step 3 β	Step 4 β	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Race	-.032	-.036	-.023	-.020	-.036	-.026	-.039	-.039
Level in School	-.127*	-.124	-.129	-.114	.100	.093	.097	.092
Current GPA	-.032	-.025	-.049	.008	.204**	.188***	.207***	.187***
Income	---	-.057	-062	-.071	---	.138	.142*	.145*
Gender	---	-.032	-.031	-.050	---	.066	.065	.072
Cultural Self-Construal	----	---	.043	.012	----		-.015	-.004
Cultural Motives	----	---	-.168**	-.197**	----		.129*	.139*
Conflict	----	----	---	.273***	----	----	-.089	-.098
R^2	.018	.022	.048	.115	.062	.083	.098	.107
ΔR^2	.018	.004	.025*	.068***	.062***	.021	.015	.009

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 11.

Study 3: Summary of Hierarchical Regression Analyses Ease Predicting Depression and Satisfaction.

	Depression				**Satisfaction With Life**			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β	β	β	β	β
Race	-.032	-.036	-.023	-.028	-.036	-.026	-.038	0.033
Level in School	-.127*	-.124*	-.129*	-.113	.100	.093	.097	.080
Current GPA	-.032	-.056	-.049	-.004	.204**	.188***	.207***	.162
Income	---	-.057	-.062	-.080	---	.183*	.142*	.160
Gender	---	-.032	-.031	-.023	---	.066	.065	.057
Cultural Self-Construal	----	---	.043	.049	----		-.015	-.021
Cultural Motives	----	---	-.168**	-.150*	----		.129*	.110
Ease	----	----		-.229***	----	----		.235***
R^2	.018	.022	.048	.097	.062	.083	.098	.150
ΔR^2	.018	.004	.025*	.050***	.062**	.021	.015	.052***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 12.

Study 3: Summary of Hierarchical Regression Analyses Depression and Satisfaction With Life.

	Depression				**Satisfaction With Life**			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β		β	β	β	β
Race	-.032	-.036	-.023	-.022	-.036	-.026	-.038	-.038
Level in School	-.127	-.124	-.129*	-.108	.100	.093	.097	.086
Current GPA	-.032	-.025	.049	.025	.204**	.188***	.207***	.168*
Income	---	-.057	-.062	-.079	---	.138*	.142*	.151*
Gender	---	-.032	-.031	-.045	---	.066	.065	.073
Cultural Self-Construal	----	---	.043	.017	----		-.015	-.001
Cultural Motives	----	----	-.168**	-.187**	----	----	.129*	.139
Interference	----	----	.301***	.307***	----	----		-.166
R^2	.018	.022	.048	.134	.062	.083	.098	.123
ΔR^2	.018	.004	.025	.086***	.062**	.021	.015	.025*

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 13.

Study 3: Summary of Hierarchical Regression Analyses Predicting Self-Esteem.

	Self-Esteem			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	-.118	-.103	-.009	-.100
Level in School	.053	.038	.036	.032
Current GPA	.148*	.149*	.163*	.145*
Income	---	.113	.119	.122
Gender	----	-.030	-.028	-.022
Cultural Self-Construal	----		-.216***	-.206***
Cultural Motives	----		.145*	.154*
Conflict	----	----		-.084
R^2	.048	.062	.113	.119
ΔR^2	.048**	.014	.051**	.006

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 14.

Study 3: Summary of Hierarchical Regression Analyses Predicting Self-Esteem.

	Self-Esteem			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	-.118	-.103	-.099112	-.094
Level in School	.053	.038	.036	.019
Current GPA	.148*	.149*	.163*	.115
Income	---	.113	.119	.138*
Gender	---	-.030	-.028	-.036
Cultural Self-Construal	----		-.216***	-.223***
Cultural Motives	----		.145*	.125*
Ease	----	----		.245***
R^2	.048	.062	.086	.169
ΔR^2	.048**	.014	.051**	.057***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 15.

Study 3: Summary of Hierarchical Regression Analyses Predicting Self-Esteem.

	Self-Esteem			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	-.118	-.103	-.099	-.100
Level in School	.053	.038	.036	.032
Current GPA	.148*	.149*	.163**	.145*
Income	---	.113	.119	.122
Gender	---	-.030	-.028	-.022
Cultural Self-Construal	----		-.216***	-.206**
Cultural Motives	----		.145*	.154*
Interference	----	----		-.084
R^2	..048	.062	.113	.119
ΔR^2	.048**	.014	.051**	.006

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 16.

Study 3: Summary of Hierarchical Regression Analyses Behavioral Intentions

	Behavioral Intention			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	.039	.028	.026	.024
Level in School	-.122	-.110	-.108	-.106
Current GPA	.052	.044	.049	.076
Income	---	-.044	-.042	-.048
Gender	---	.064	.063	.056
Cultural Self-Construal	----		-.031	-.030
Cultural Motives	----		.039	.022
Conflict	----	----		.112
R^2	.017	.023	.025	.036
ΔR^2	.017	.006	.001	.011

Note. Values beneath the "β" indicate the standardized betas βs.
$^{*}p < .05$. $^{**}p < .01$ $^{***}p < .001$

Table 17.

Study 3: Summary of Hierarchical Regression Analyses Behavioral Intentions.

	Behavioral Intention			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	.039	.028	.025	.025
Level in School	-.122	-.110	-.108	-.106
Current GPA	.052	.044	.049	.055
Income	---	-.044	-.042	-.045
Gender	---	.064	.063	.064
Cultural Self-Construal	----		-.013	-.013
Cultural Motives	----		.039	.041
Ease	----	----		-.030
R^2	.017	.023	.025	.026
ΔR^2	.017	.006	.001	.001

Note. Values beneath the "β" indicate the standardized betas βs.
$^{*}p < .05$. $^{**}p < .01$ $^{***}p < .001$

Table 18.

Study 3: Summary of Hierarchical Regression Analyses Behavioral Intentions.

	Behavioral Intention			
	Step 1	Step 2	Step 3	Step 4
Variable	β	β	β	β
Race	.039	.028	.026	.024
Level in School	-.122	-.110	-.108	-.105
Current GPA	.052	.044	.049	.076
Income	---	-.044	-.042	-.050
Gender	---	.064	.063	.058
Cultural Self-Construal	----		-.013	-.024
Cultural Motives	----		.039	.029
Interference	----	----		.101
R^2	.017	.023	.025	.034
ΔR^2	.017	.006	.001	.009

Note. Values beneath the "β" indicate the standardized betas βs. $^{*}p < .05$. $^{**}p < .01$ $^{***}p < .001$

Table 19.

Study 3: Summary of Hierarchical Regression Analyses with Prosocial and Achievement Centrality Predicting Conflict.

	Conflict				
	Step 1	Step 2	Step 3	Step 4	Step 5
Variable	β	β	β	β	β
Race	.011	.008	-.012	-.011	-.016
Level in School	-.067	-.062	-.054	-.059	-.078
Current GPA	-.216***	-.228***	-.208**	-.171*	-.170
Income	---	.030	.032	.040	.051
Gender	---	.074	.071	.086	.086
Cultural Self-Construal	----	---	.112	.124	.104
Cultural Motives	----	---	.107	.116	.136*
Achievement Centrality	----	---	---	.015	.036
Prosocial Centrality	----	---	---	-.128	-.142*
Achievement x Prosocial	----	---	---	---	-.175**
R^2	.056	.062	.091	.105	.134
ΔR^2	.056**	.006	.029*	.014	.029***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 20.

Study 3: Summary of Hierarchical Regression Analyses with Prosocial and Achievement Centrality Predicting Ease.

	Ease				
Variable	Step 1 β	Step 2 β	Step 3 β	Step 4 β	Step 5 β
Race	.002	-.010	-.020	-.030	-.025
Level in School	.056	.068	.072	.080	.097
Current GPA	.185*	.182**	.195	.058	.057
Income	---	-.079	-.076	-.122*	-.133*
Gender	----	.034	.033	-.042	-.042
Cultural Self-Construal	----	---	.028	-.027	-.009
Cultural Motives	----	---	.081	.028	.010
Achievement Centrality	----	---	---	.130*	.111
Prosocial Centrality	----	---	---	.460***	.472***
Achievement × Prosocial	----	---	---	---	.158**
R^2	.040	.048	.056	.284	.307
ΔR^2	.040*	.008	.008	.228***	.024**

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 21.

Study 3: Summary of Hierarchical Regression Analyses with Prosocial and Achievement Centrality Predicting Interference.

	Interference				
	Step 1	Step 2	Step 3	Step 4	Step 5
Variable	β	β	β	β	β
Race	.009	.010	-.003	.002	-.005
Level in School	-.075	-.075	-.070	-.077	-.098
Current GPA	-.242***	-.252***	-.240***	-.161*	-.160
Income	---	.052	.053	.075	.089
Gender	---	.049	.047	.086	.085
Cultural Self-Construal	----	---	.083	.112	.089
Cultural Motives	----	---	.060	.086	.109
Achievement Centrality	----	---	---	-.034	-.009
Prosocial Centrality	----	---	---	-.267***	-.282***
Achievement x Prosocial	----	---	---	---	-.200***
R^2	.071	.075	.088	.155	.193
ΔR^2	.071**	.005	.012	.067***	.038***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 22.

Study 3: Summary of Hierarchical Regression Analyses Prosocial × Achievement × Gender Predicting Interference

Variable	**Interference**			
	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Race	.009	-.005	-.006	-.051
Level in School	-.075	-.070	-.070	-.096
Current GPA	-.242***	-.230***	-.159*	-.152*
Cultural Self-Construal	---	.084	.112	.087
Cultural Motives	---	.058	.082	.122*
Achievement Centrality	---	---	-.027	.056
Prosocial Centrality	---	---	-.263***	-.208*
Gender	---	---	.078	.118
Gender x Prosocial	---	---	---	-.093
Gender x Achievement	---	---	---	-.057
Prosocial x Achievement	---	---	---	-.095
Gender x Prosocial x Achievement	---	---	---	-.180*
R^2	.071	.083	.150	.219
ΔR^2	.071***	.013	.066***	.069***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$

Table 23.

Study 3: Summary of Hierarchical Regression Analyses Prosocial x Achievement x Income Predicting Interference

Variable	**Interference**			
	Step 1 β	Step 2 β	Step 3 β	Step 4 β
Race	.009	-.005	.007	.008
Level in School	-.075	-.070	-.086	-.099
Current GPA	-.242***	-.230***	-.151*	-.161**
Cultural Self-Construal	---	.084	.111	.098
Cultural Motives	---	.058	.085	.100
Achievement Centrality	---	---	-.026	.009
Prosocial Centrality	---	---	-.257***	-.271***
Income	---	---	.067	.105
Income x Prosocial	---	---	---	.102
Income x Achievement	---	---	---	.082
Prosocial x Achievement	---	---	---	-.225***
Income x Prosocial x Achievement	---	---	---	-.133*
R^2	.071	.083	.148	.215
ΔR^2	.071***	.013	.065***	.067***

Note. Values beneath the "β" indicate the standardized betas βs.
* $p < .05$. ** $p < .01$ *** $p < .001$.

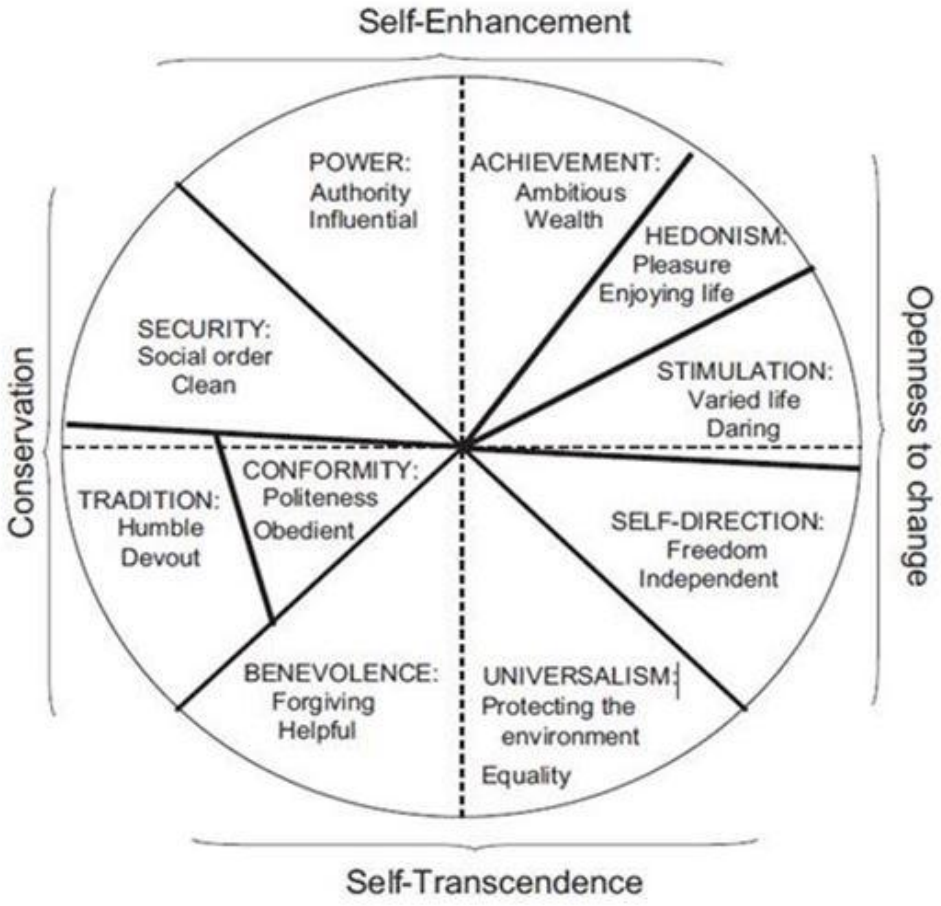

Figure 1. Schwartz's Value Circumplex.

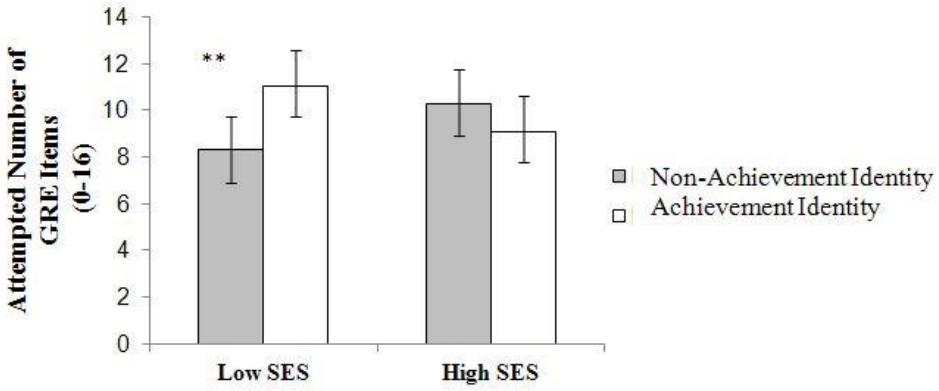

Figure 2. Study 2a: Mean number of attempted GRE items by women as a function of SES (high vs. low) and condition (past vs. future identity). Higher scores indicate the completion of a greater number of GRE items. Error bars indicate 95% confidence intervals. *p < .05

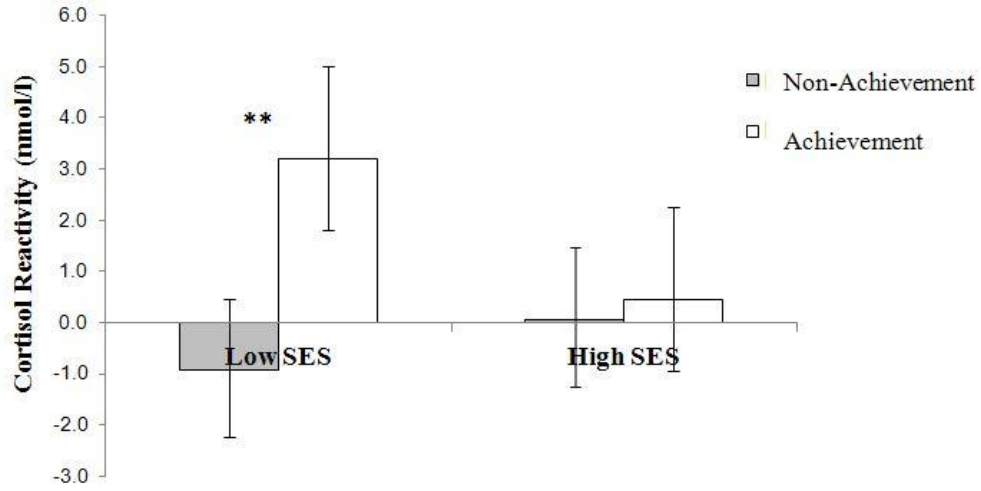

Figure 3 Study 2b: Cortisol reactivity as a function of SES (low vs. high) and condition (past vs. future identity). Positive values indicate an increase in salivary cortisol from baseline. Error bars indicate 95% confidence intervals. **$p < .01$

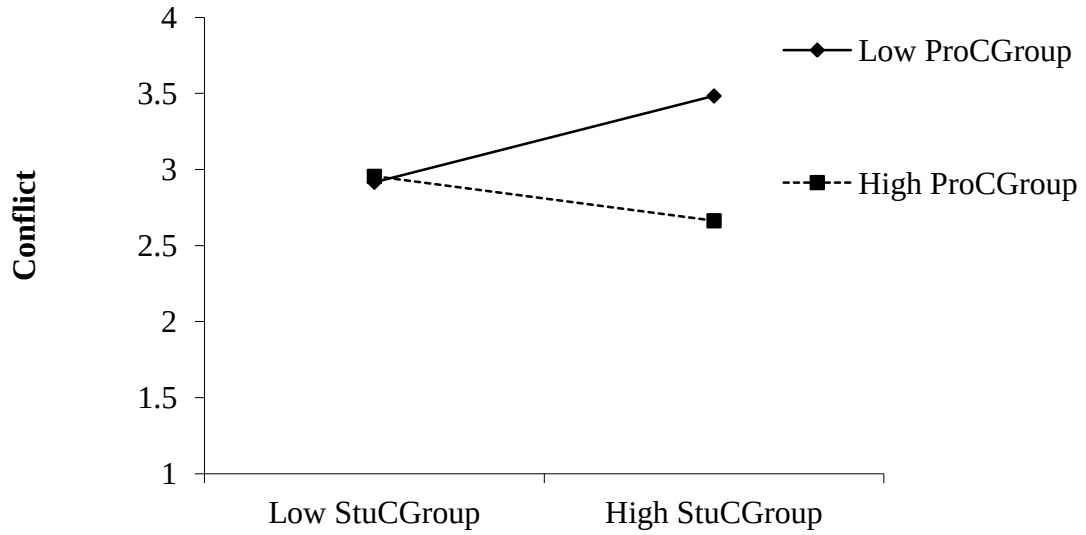

Figure 4. Study 3: Conflict as a Function of Student and Prosocial Centrality.

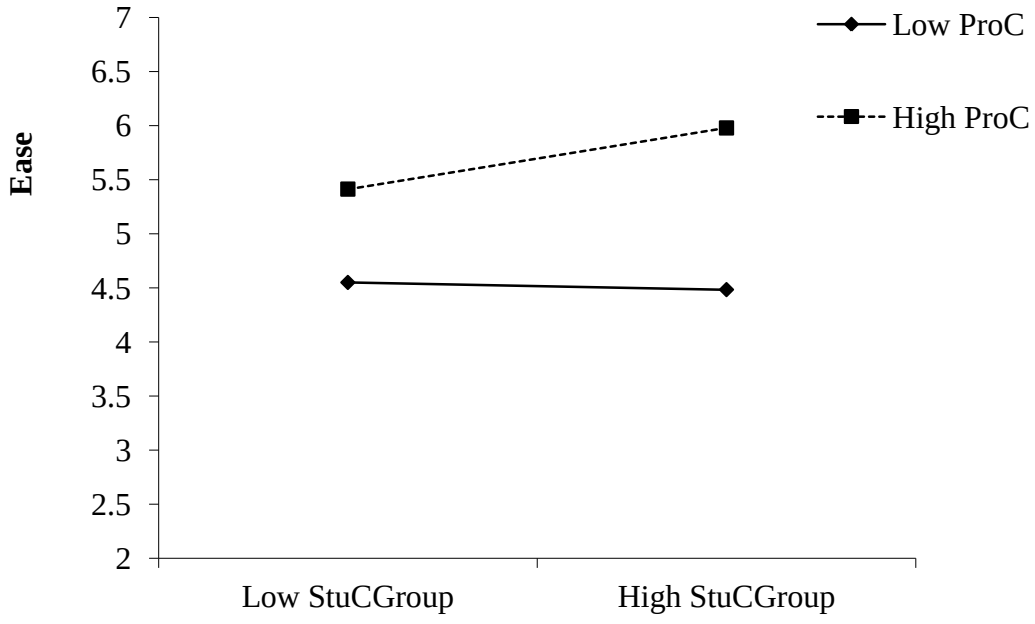

Figure 5. Study 3: Ease as Function of Student and Prosocial Centrality.

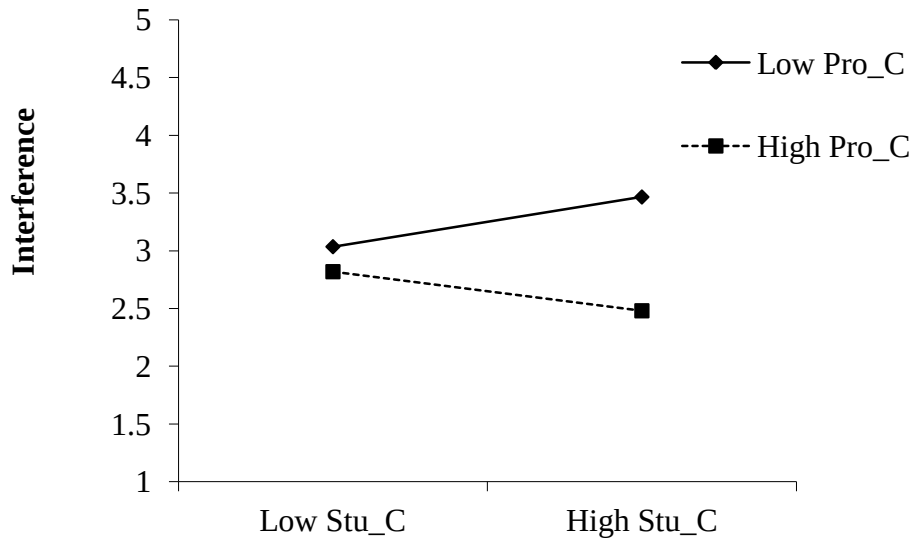

Figure 6. Study 3: Level of Interference as a Function of Achievement and Prosocial Centrality.

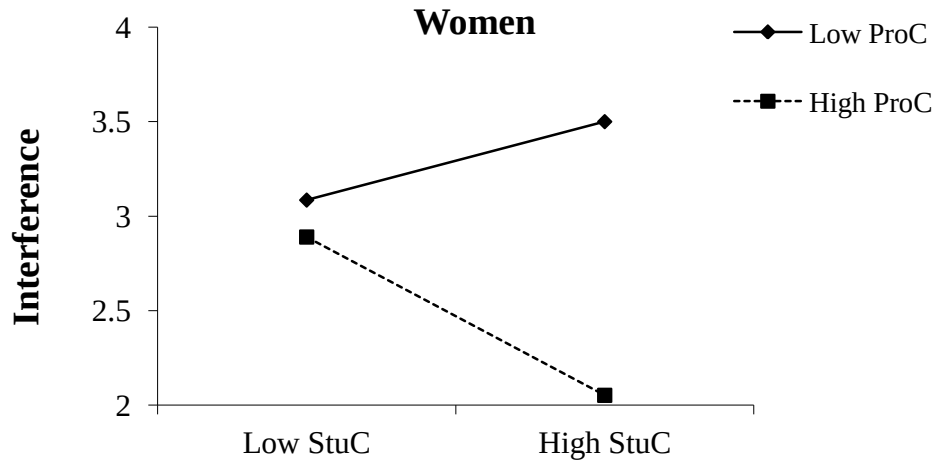

Figure 7. Study 3: Interference as a Function of Student and Prosocial Centrality Among Women.

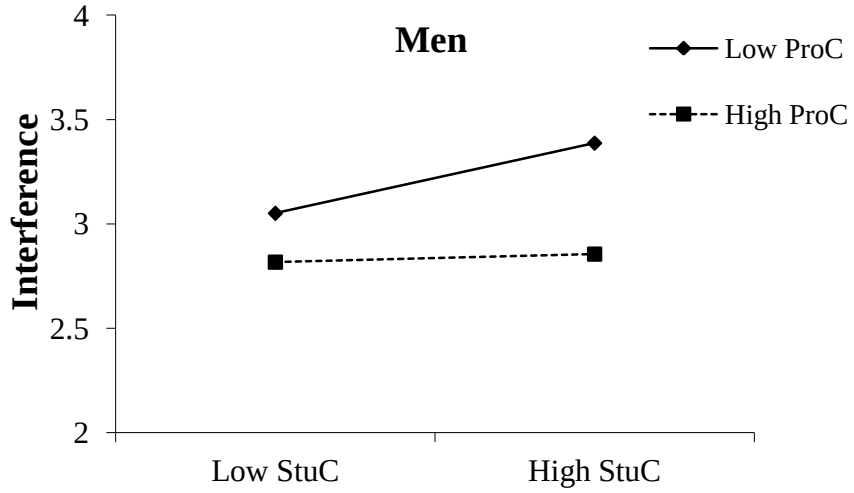

Figure 8. Study 3:Interference as a Function of Student and Prosocial Centrality Among Men.

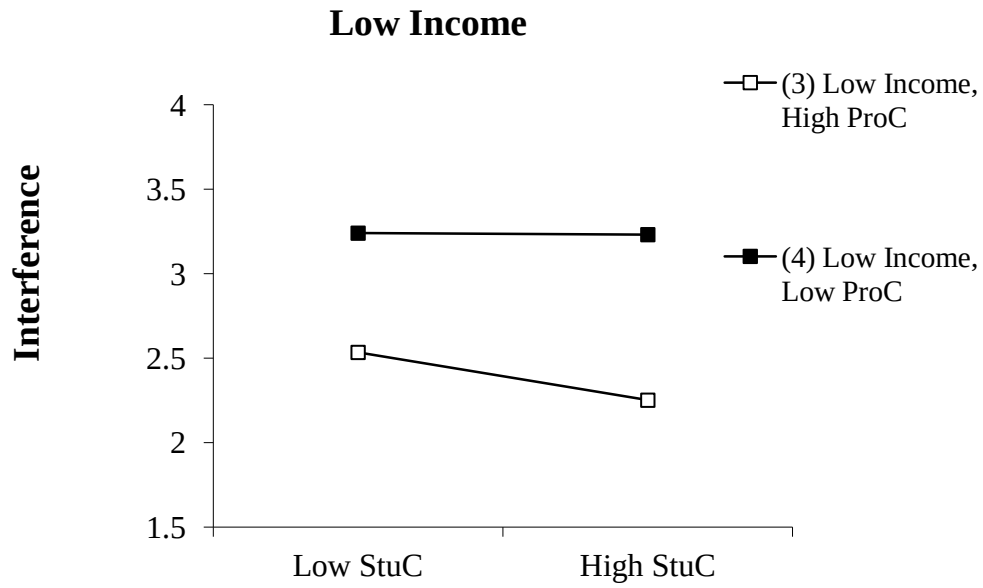

Figure 9. Study 3: Level of Interference as Function of Student and Prosocial Centrality Among Lower Income Students.

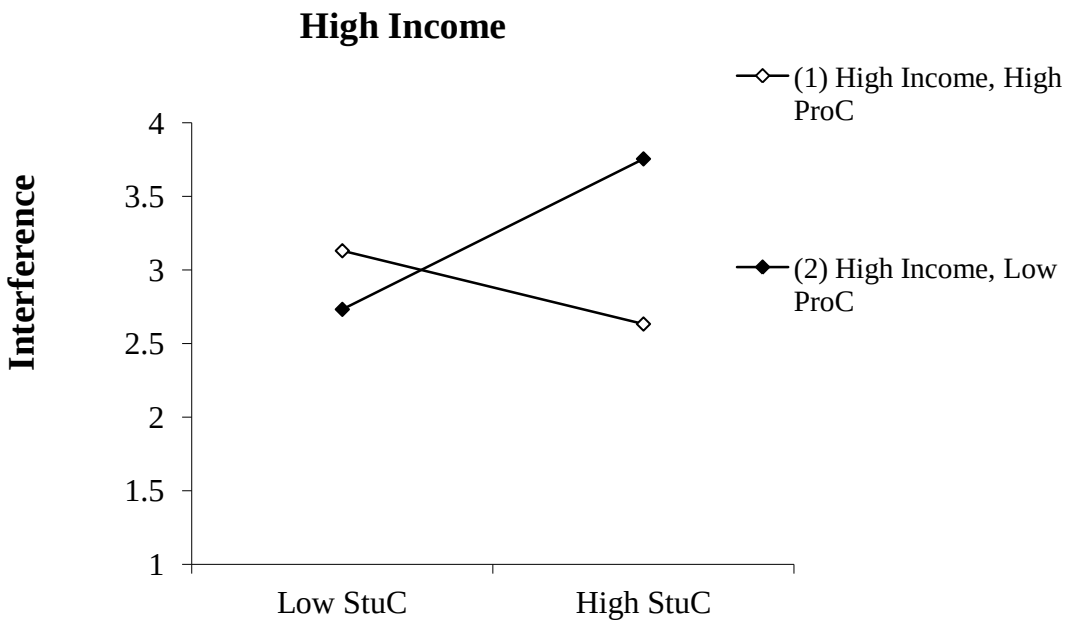

Figure 10. Study 3: Interference as a Function of Student and Prosocial Centrality Among Higher Income Students.

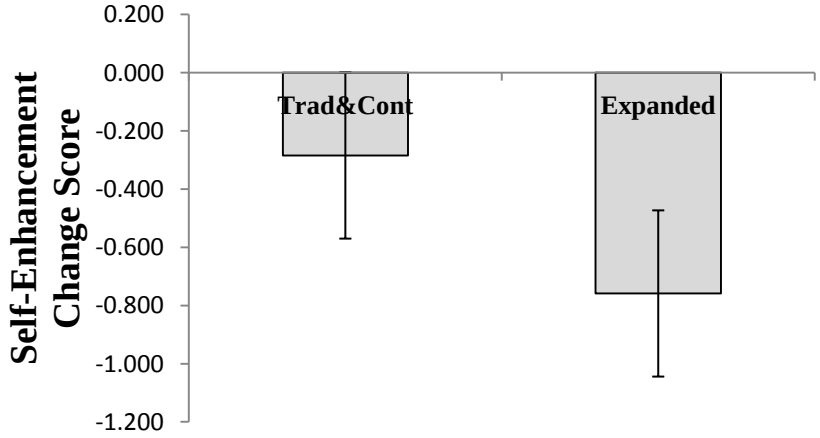

Figure 11. Study 4: Change in Self-Enhancement Values as a Function of Condition. Error bars indicate 95% confidence intervals.

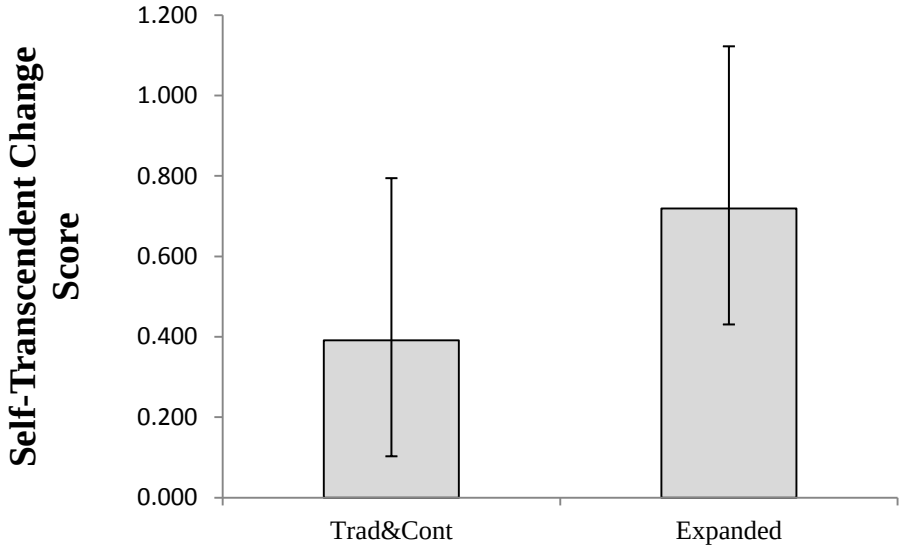

Figure 12. Study 4: Change in Self-Transcendent Values as a Function of Condition. Error bars indicate 95% confidence intervals.

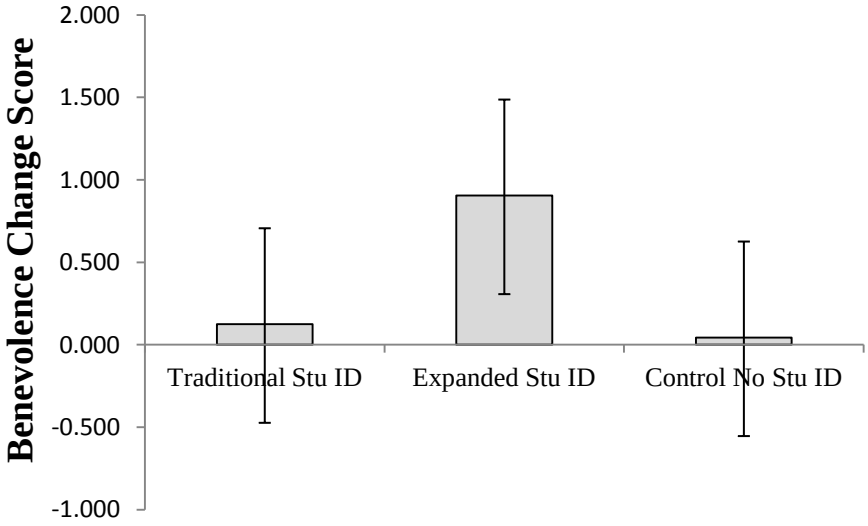

Figure 13. Study 4: Change in Benevolent Values as a function of condition. Error bars indicate 95% confidence intervals.

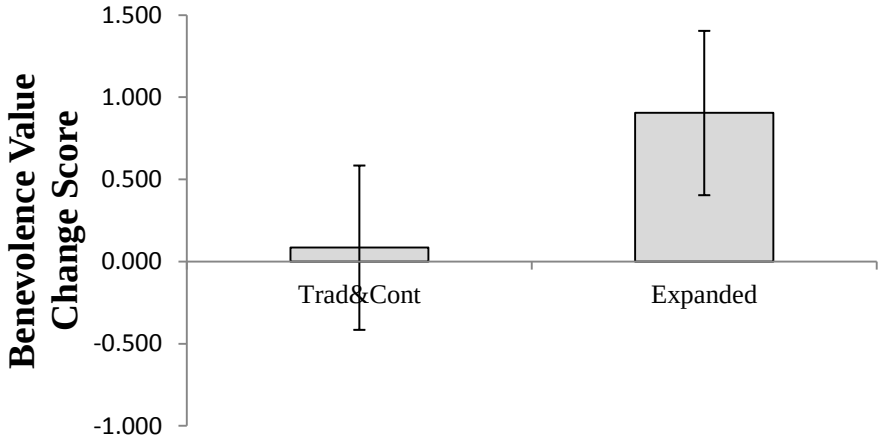

Figure 14. Study 4: Change in Benevolent Values (Expanded identity vs. Traditional and Control combined). Error bars indicate 95% confidence intervals.

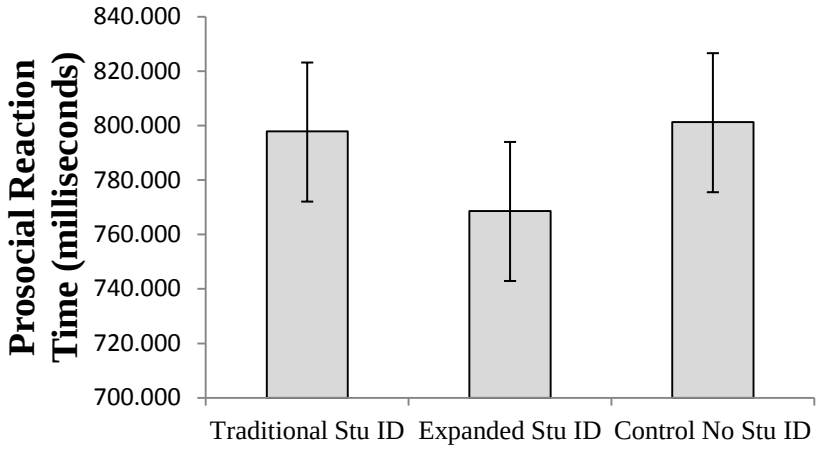

Figure 15. Study 4: Prosocial Reaction Time as a Function of Condition (Traditional Identity, Expanded Identity, Control No-Identity). Error bars indicate 95% confidence intervals.

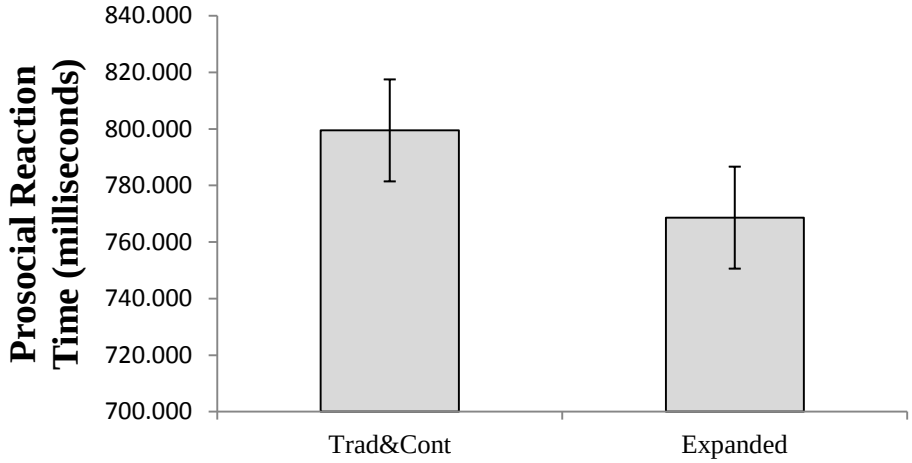

Figure 16. Study 4: Prosocial Reaction Time as a Function of Condition (Expanded Identity vs. Traditional and Control combined). Error bars indicate 95% confidence intervals.

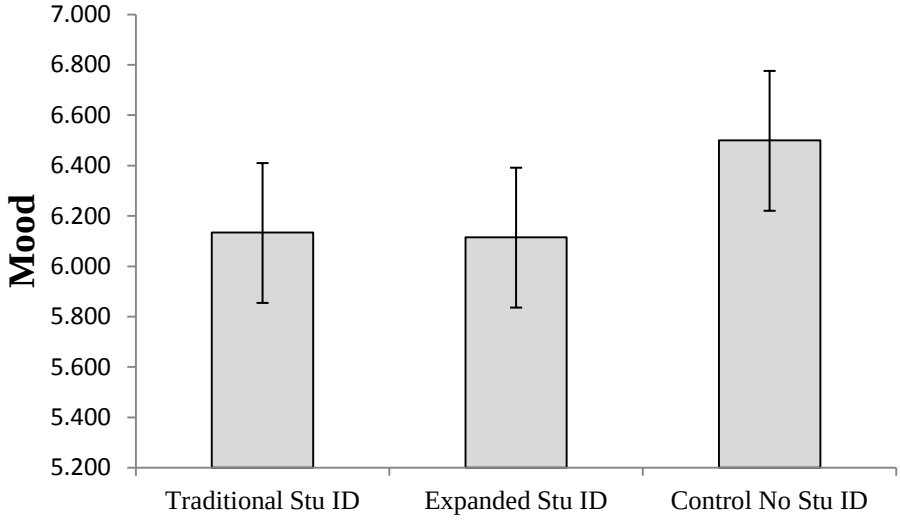

Figure 17. Study 4: Mood as a Function of Condition (Traditional Identity, Expanded Identity vs Control No-Identity). Error bars indicate 95% confidence intervals.

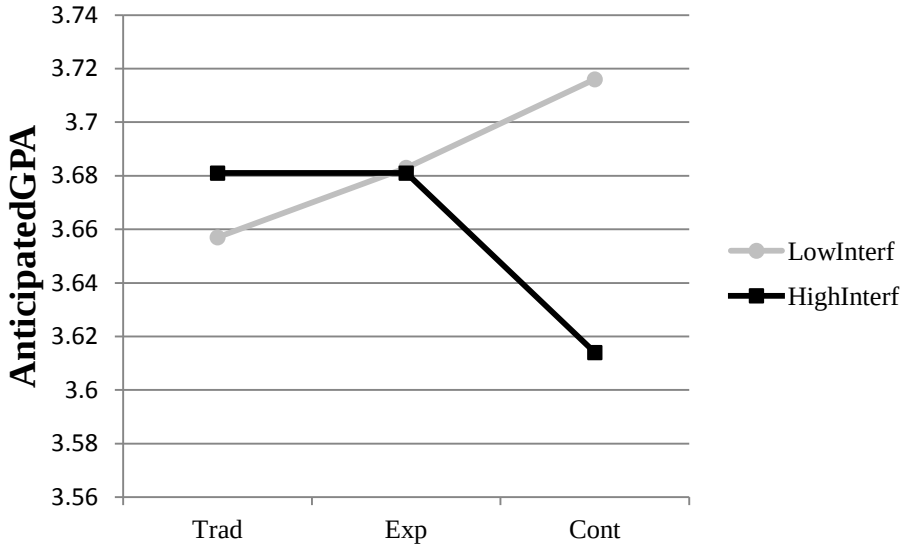

Figure 18. Study 4: Anticipated GPA as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

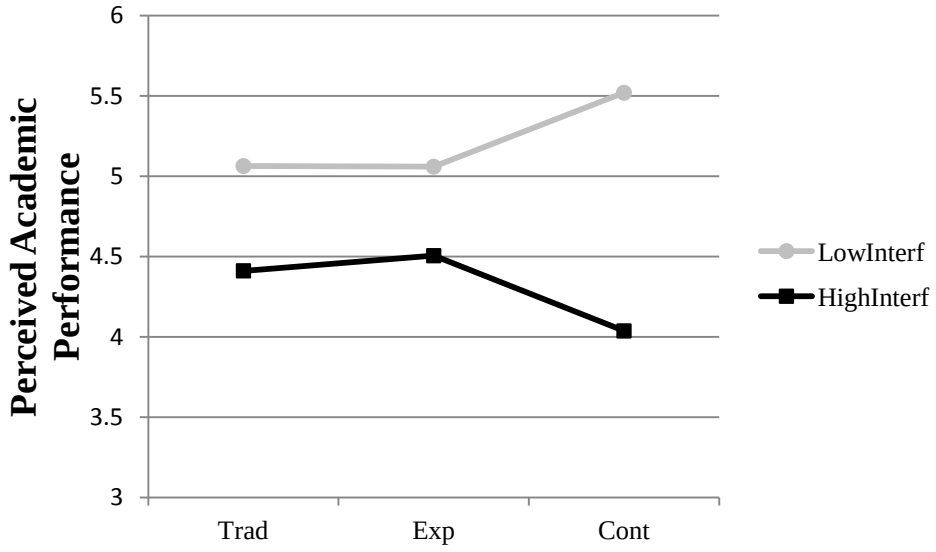

Figure 19. Study 4: Perceived Academic Performance as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

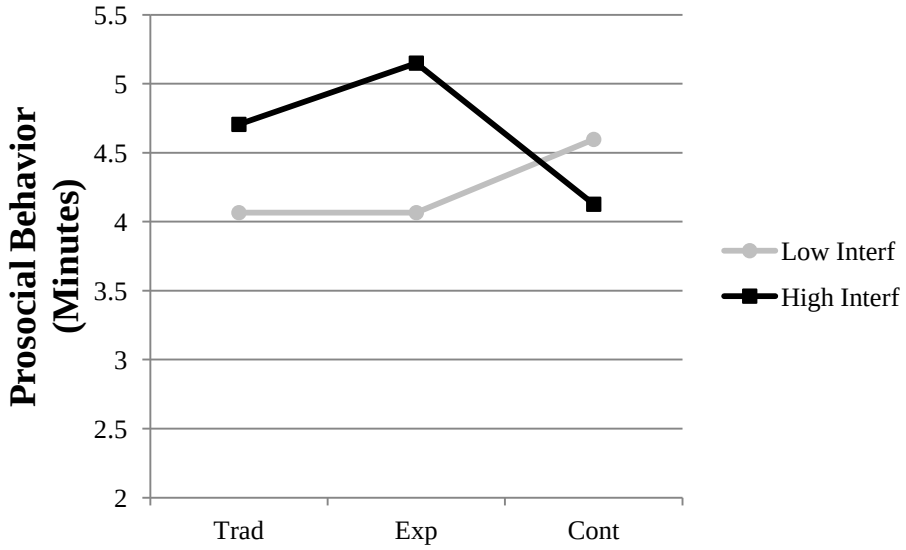

Figure 20. Study 4: Prosocial Behavior (minutes) as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

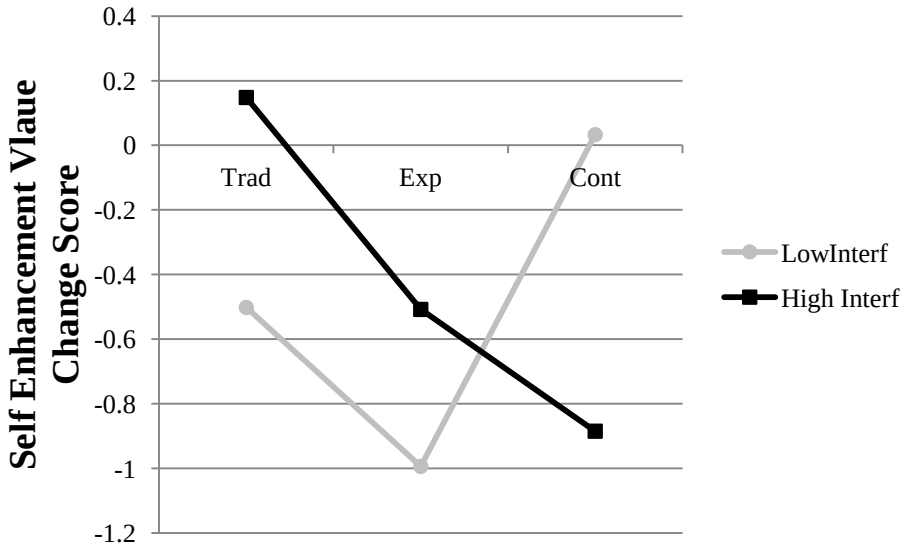

Figure 21. Study 4: Change in Self-Enhancement Values as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

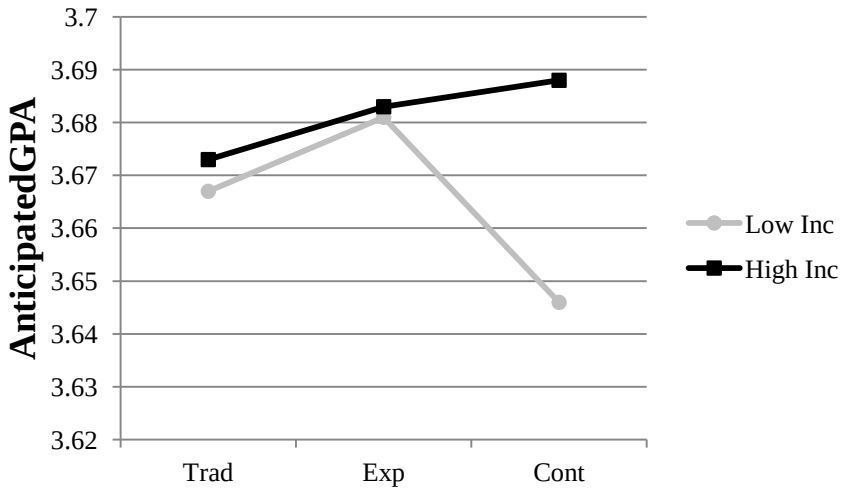

Figure 22. Study 4: Anticipated GPA as a Function of Income (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

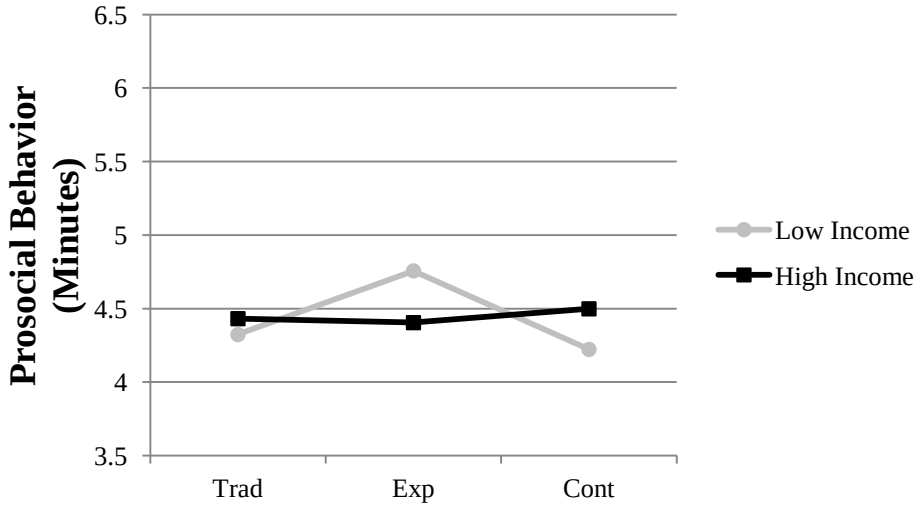

Figure 23. Study 4: Prosocial Behavior (minutes) as a Function of Income (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

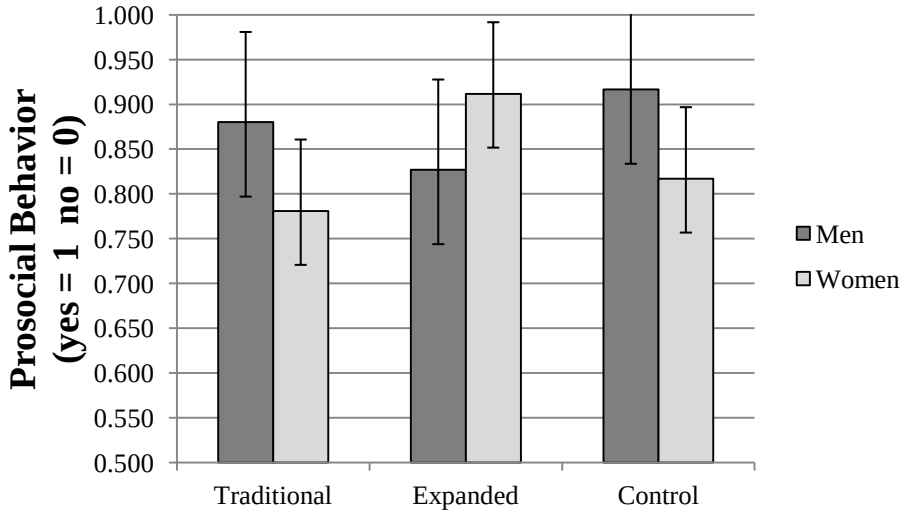

Figure 24. Study 4: Prosocial Behavior (yes or no) as a Function of Gender (men or women) and Condition. (Traditional Identity, Expanded Identity vs. Control No-Identity).

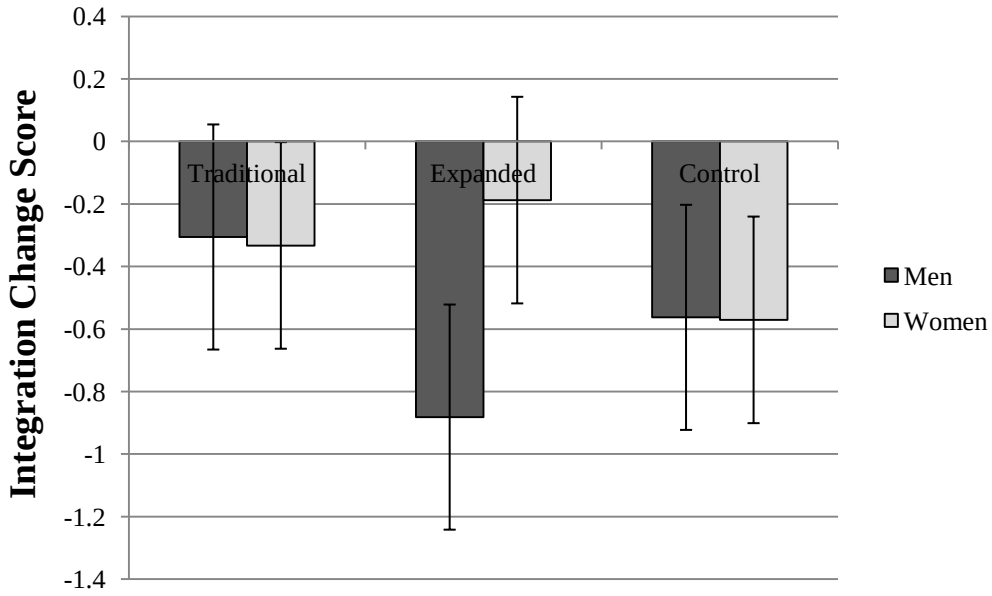

Figure 25. Study 4: Change in Prosocial-Achievement Integration as a Function of Gender (men or women) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity).

Figure 26. Study 4: Mood as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Men.

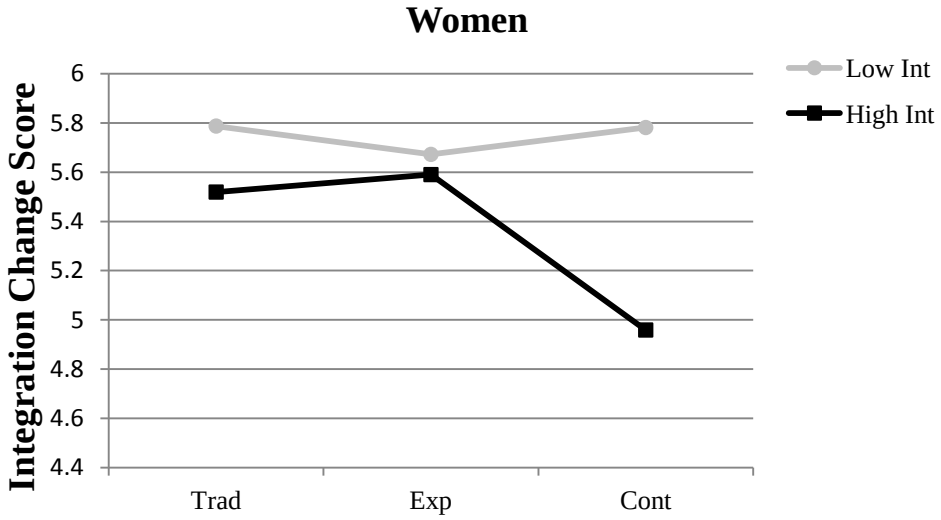

Figure 27. Study 4*:* Integration as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Women.

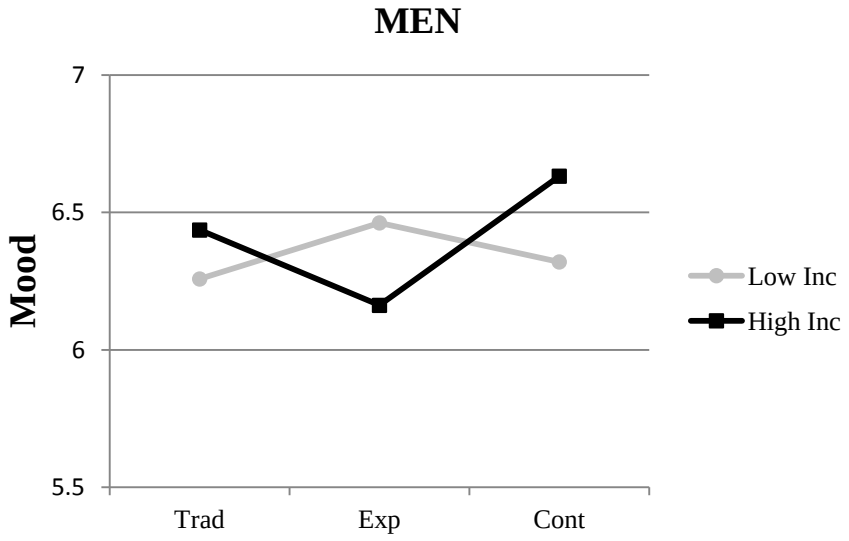

Figure 28. Study 4: Mood as a Function of Income (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Men.

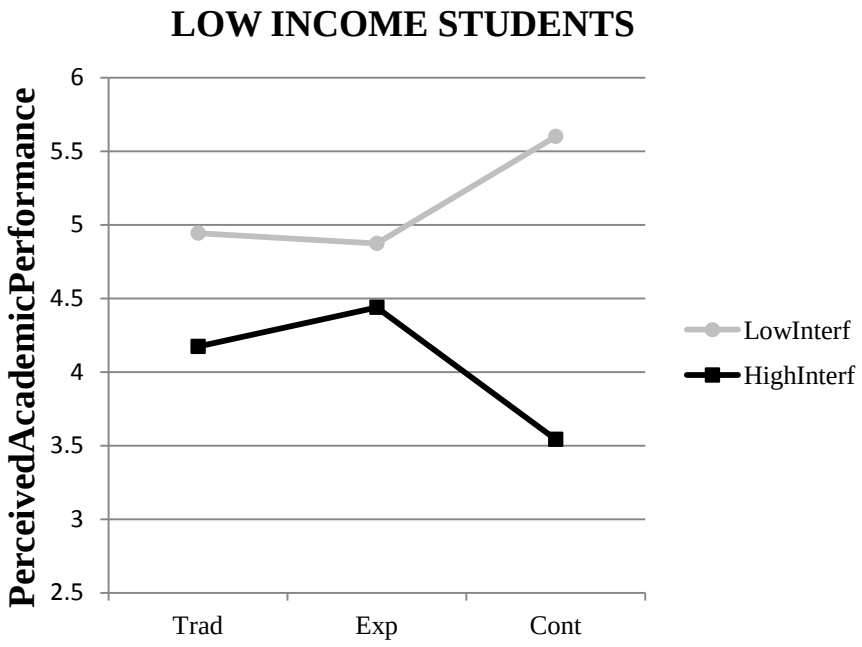

Figure 29. Perceived Academic Performance as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Low Income Students.

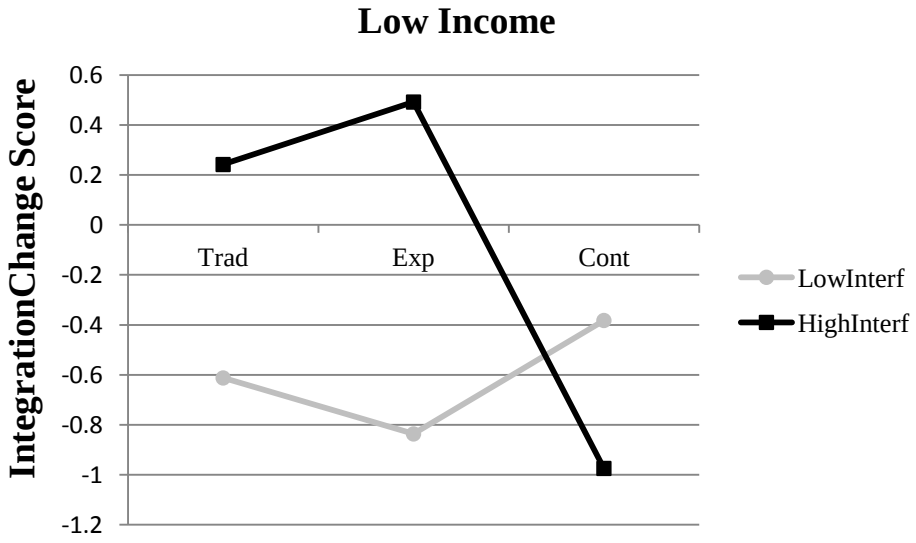

Figure 30. Study 4: Change in Integration as a Function of Interference (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Low Income Students.

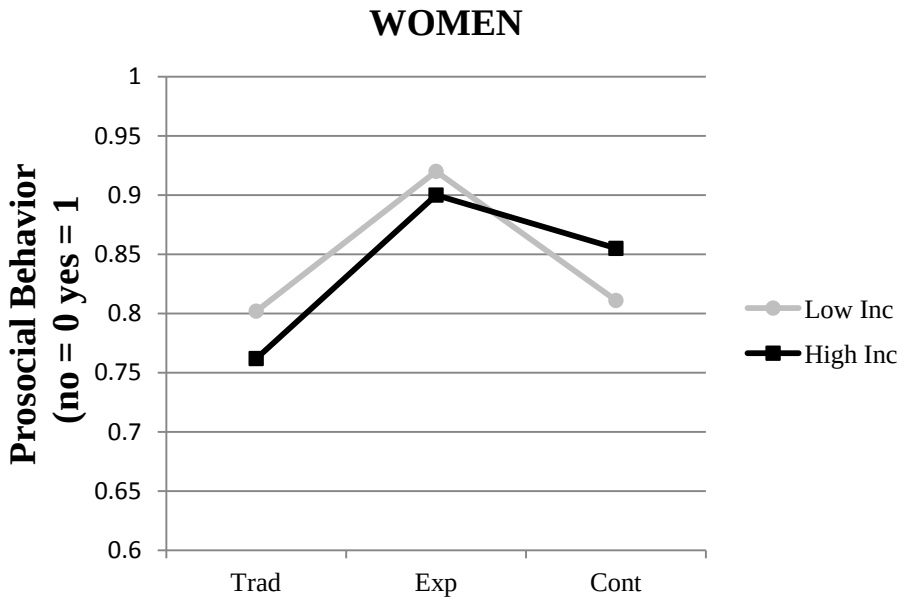

Figure 31. Study 4:Prosocial Behavior as a Function of Income (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Women.

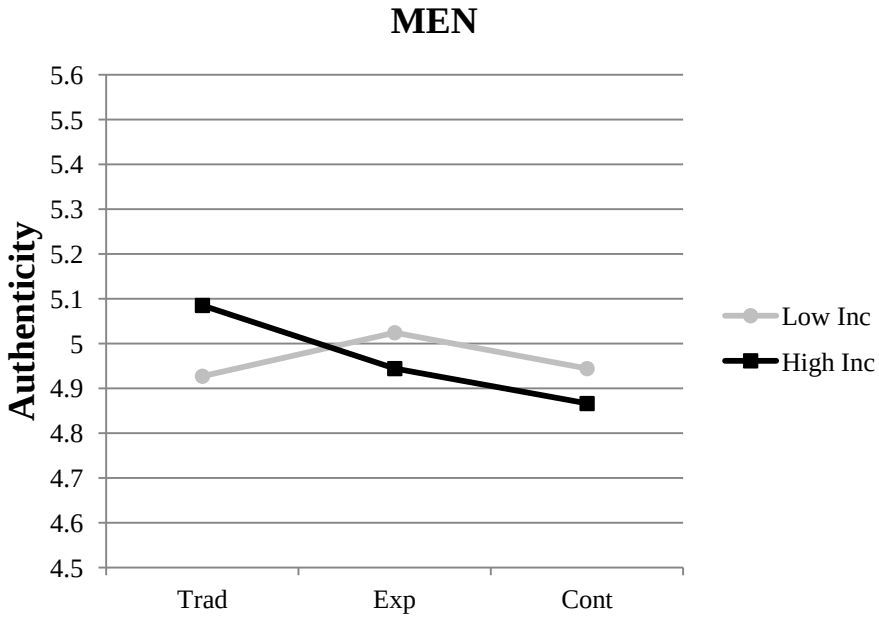

Figure 32. Study 4: Student Role Authenticity as a Function of Income (+/- 1 SD) and Condition (Traditional Identity, Expanded Identity vs. Control No-Identity) for Men.

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Appendix A:

Empathic Concern

"The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you on the below 1-5 scale. Answer as honestly as you can. Thank you.

Does Not Describe Me Well				Describes Me Very Well
1	2	3	4	5

1. I often have tender, concerned feelings for people less fortunate than me.
2. Sometimes I don't feel very sorry for other people when they are having problems. (R)
3. When I see someone being taken advantage of, I feel kind of protective towards them.
4. Other people's misfortunes do not usually disturb me a great deal. (R)
5. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (R)
6. I am often quite touched by things that I see happen.
7. I would describe myself as a pretty soft-hearted person.

Cultural Self-Construal

Please indicate your agreement with the following statements (1 = Strongly Disagree, 7 = Strongly Agree)

1. I enjoy being unique and different from others in many respects.
2. I feel comfortable using someone's first name soon after I meet them.
3. Even when I strongly disagree with group members, I avoid an argument.
4. I have respect for the authority of figures with whom I interact.
5. I do my own thing, regardless of what others think.
6. I respect people who are modest about themselves.
7. I feel it is important for me to act as an independent person.
8. I will sacrifice my self-interest for the benefit of the group I am in.
9. I'd rather say "no" directly than risk being misunderstood.
10. Having a lively imagination is important to me.
11. I should [consider] my parent's advice when making education/career plans.
12. I feel my fate is intertwined with the fate of those around me.

13. I prefer to be direct and forthright when dealing with people I've just met.
14. I feel good when I cooperate with others.
15. I am comfortable with being singled out for praise or rewards.
16. If my brother or sister fails, I feel responsible.
17. My relationships are more important than my own accomplishments.
18. Speaking up during a class (or meeting) is not a problem for me.
19. I would offer my seat in a bust to my professor (or my boss).
20. I act the same way no matter who I am with.
21. My happiness depends on the happiness of those around me.
22. I value being in good health above everything.
23. I will stay in a group if they need me, even when I am not happy with the group.
24. I try to do what is best for me, regardless of how that might affect others.
25. Being able to take care of myself is a primary concern for me.
26. It is important to me to respect decisions made by the group.
27. My personal identity, independent of others, is very important to me.
28. It is important for me to maintain harmony within my group.
29. I act the same way at home that I do at school.
30. [I] go along with what others want . . . even when I would rather do something different.

Appendix B:

Prosociality-Achievement Interference Measure

Please answer the below questions in regards to how true each statement is for you.

Not At All True For Me						Extremely True For Me
1	2	3	4	5	6	7

1. I feel I am not taken seriously in my rigorous academic pursuits because I am a caring and helpful individual.
2. Being a caring and helpful individual makes me less successful as a student.
3. Being a caring and helpful individual makes me more capable as a student.
4. I feel that because I am caring and helpful it is easier for me to fit the definition of a successful student.
5. I am concerned that I would have chosen a different major if I were not so caring and helpful.
6. I feel that being caring and helpful limits my academic performance.
7. I feel that I would perform better academically if I were not so caring and helpful.
8. I sometimes feel that if it were not for the demands associated with being a very caring and loyal person, courses that were once difficult would be easier.
9. I feel I can be both a high achieving student and caring and helpful at the same time.

Achievement Centrality

1. Overall being a university student has very little to do with how I feel about myself.
2. In general, being a university student is an important part of my self-image.
3. My destiny is tied to the destiny of other university students.
4. Being a university student is unimportant to my sense of what kind of person/human I am.
5. I have a strong sense of belonging to/with other university students.
6. I have a strong attachment to other university students.
7. Being a university student is an important reflection of who I am.
8. Being a university student is not a major factor in my social relationships.

Prosocial Centrality

1. Overall being a helpful and caring individual has very little to do with how I feel about myself.
2. In general, being a helpful and caring individual is an important part of my self-image.
3. My destiny is tied to the destiny of other caring and helpful individuals.

4. Being a caring and helpful individuals is unimportant to my sense of what kind of person/human I am.
5. I have a strong sense of belonging to/with other caring and helpful individuals.
6. I have a strong attachment to other caring and helpful individuals.
7. Being a caring and helpful individual is an important reflection of who I am.
8. Being a caring and helpful individual is not a major factor in my social relationships.

Perceived Academic Performance

Please answer the below in regards to your beliefs about your performance as a university student thus far. 1(not at all) to 7 (Extremely).
1. How productive do you feel as a university/college student?
2. How capable do you feel as a university/college student?
3. How knowledgeable do you feel as a university/college student?

How do you feel your academic performance compares to other students at your university/institution?

My Performance is Far Worse Compared to Others			My Performance is Equal Compared to Others			My Performance Far Exceeds Compared to Others
1	2	3	4	5	6	7

Self -Esteem

" Below is a list of statements dealing with your general feelings about yourself. Please indicate on the below scale your agreement or disagreement with each of the statements." 1(*strongly agree*) 4(*strongly disagree*)"

1. On the whole I am satisfied with myself.
2. At times, I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.

7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

Satisfaction With Life

" Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement or disagreement with each item. Please be open and honest in your responding."

1. In most ways my life is close to ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Depression

"Below is a list of some of the ways you may have felt or behaved. Please indicate how often you've felt this way during the past week."

Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or moderate amount of time (3-4 days)	All of the time (5-7 days)
1	2	3	4

1. I was bothered by things that usually don't bother me.
2. I had trouble keeping my mind on what I was doing.
3. I felt depressed.
4. I felt that everything I did was an effort.
5. I felt hopeful about the future.
6. I felt fearful.
7. My sleep was restless.
8. I was happy.
9. I felt lonely.
10. I could not get going.

Behavioral Measure of Prosociality vs. Achievement

"We would like to give our participants the opportunity to find out more information regarding the following 2 websites. Please select the website that you would be most interested in getting more information about. (Keep in mind that information will come at the very end of the study, and if you do not want the information you will be able to simply close that webpage). "

- **FORWARD STEP** Is a website designed to help currently enrolled college students, gain information regarding post-baccalaureate/professional degrees as well as career opportunities after graduation.
- **HANDS ON HELP** Is a website designed to help individuals gain information regarding ways that they can help volunteer or simply support a multitude of volunteering organizations.

Cultural Motives for Attending College

"Please consider your reasoning and motives for pursuing college/university. For each of the below statements please answer as to how important of a key factor this was in motivating you to attend/pursue college/university. 1(Not At All A Motivating Factor) 7(Definitely An Important Motivating Factor)."

1. Help my family out after I'm done with college.
2. Be a role model for people in my community.
3. Bring honor to my family.
4. Show that people with my background can do well.
5. Give back to my community.
6. Provide a better life for my own children.
7. Expand my knowledge of the world.
8. Become an independent thinker.
9. Explore new interests.
10. Explore my potential in many domains.
11.Learn more about my interests.
12. Expand my understanding of the world.

Appendix C:

Pretest Value Importance

"Please rank the below values on the basis of their importance as guiding principles in your life such that the most important value should be ranked as 1 and the least important value should be ranked as 16."

Value	Ranking (1-16)
Loyal	
An exciting life	
Ambitious	
Detachment (following your traditions)	
Equality (equal opportunity for all)	
A varied life (with many experiences)	
Social Power	
Moderate	
Helpful	
Curious	
Social Recognition (from others)	
Politeness	
World at peace	
Independent	
Successful	
Respect for tradition	

Posttest Value Importance

"Please rank the below values on the basis of their importance as guiding principles in your life such that the most important value should be ranked as 1 and the least important value should be ranked as 16."

Value	Ranking
Forgiving	
Creativity	
Authority	
Devout	
Honest	
Daring	
Capable	
Honoring of parents and elders	
Social justice	
A stimulating life	

Influential	
Social order	
Broad-minded	
Choosing own goals	
Wealth	
Obedient	

Me/Not-Me Self Association Task Traits

Achievement Words	Prosocial Words	Neutral Words
Ambitious	Generous	Silly
Uninterested	Greedy	Stern
Successful	Cooperative	Clumsy
Driven	Uncooperative	Graceful
Lazy	Caring	Dull
Powerful	Uncaring	Exciting
Incapable	Forgiving	Nosey
Influential	Punishing	Messy
Insignificant	Compassionate	Easygoing
Influential	Unsympathetic	Outgoing

Prosocial-Achievement Integration