THE RELATIVE INFLUENCE OF VALUES AND IDENTITIES ON ACADEMIC DISHONESTY: A QUANTITATIVE ANALYSIS

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ABSTRACT

Within sociological-social psychology values are an emerging topic of substantive interest. Building on identity theory this study tests the relative salience of values versus role-identities as a predictor of a student's participation in academic dishonesty. This study finds that for a general population of students values are a significant predictor of cheating as compared to a role-identity. However, managing the data to isolate the salience of the student role-identity shows that the role-identity is a better predictor of academic dishonesty. What matters is the relative salience. This suggests that values are structured in terms of salience, similar to roles.

INTRODUCTION

Work on values is an emerging area of interest within social psychology (Stets and Carter 2011). At present two competing ideas about values dominate the sociological literature. The first theory suggests that values represent "the core of the self," potentially comparable to cognition and emotion, forming a sense of self called the "personal identity" (see Haidt 2001; Hitlin 2003: 121 for example). The second view suggests that values create unique identities (Gecas 2000).

This study seeks to explore these competing ideas regarding values as a mechanism of identity related behavior. The behavioral outcome tested is academic dishonesty among college students. Selecting deviant behavior as the outcome variable serves two purposes 1) academic integrity among college students represents a social phenomenon of growing concern and 2) it seeks to extend recent findings by Stets and Carter (2011) answering their call to compare role versus value based influences on identity and behavior.

The Deviant Action: Academic Dishonesty

Research finds that as high as 70% of students engage in some form of academic dishonesty at institutions of higher education across the United States (Lambert, Hogan, and Barton 2004;

McCabe and Pavela 2004). One of the most intriguing findings related to cheating shows that students report a belief in the importance of ethical behavior viewing integrity as a necessary part of human conduct. However, students also report and justify involvement in academic dishonesty (McCabe, Dukerich, and Dutton 1993). Why is this happening? How are role and value related expectations impacting cheating?

IDENTITY THEORY

Stryker (1955) developed Identity Theory building on Mead's (1934) symbolic interaction framework focusing on the influence running from society to self to behavior. Stryker's (1980) Identity Theory emphasizes the importance of social roles and identities based on these roles. According to Identity Theory society influences social interaction via role commitments. Role commitments define the self in terms of identities. The self then influences behavior.

Stryker defines identities as, "internalized role expectations attached to positions in organized sets of social relationships. From this point of view, the terms identity and role-identity are equivalent" (Stryker 2007: 1084). A key motivating component of identity comes from the relative salience of identities. People have an internal ranking, or hierarchal structure that organizes their identities relative to one another. In other words, certain parts of self are more likely to be enacted across situations (Gecas and Seff 1990; Stryker and Serpe 1994). For instance, why does a father decide to go play golf on a given Saturday afternoon instead of spending time with his family? The basis of this question is the core of Stryker's identity theory. Identities higher in salience are more likely to be enacted than identities lower in salience. Role-identity is a fundamental part of the self-concept. Therefore, commitment to the expectations (social structure) that define role-positions shapes the self which influences behavior.

Norms, or expectations, define role-identities. For example, the student role includes expectations that must be enacted correctly for the actor to be within the defined boundaries of the role. Roles are amenable to an amount of adaptation, or role-making (e.g., a student only interested in the social aspects of college at the expense of academic pursuits). Role-making is only possible insofar as the changes do not alter the role relative to the people that define it (i.e., moving its position, Turner 1978).

Cheating violates normative role expectations (if nothing else the institutional/academic expectations). In fact, cheating may jeopardize a student's ability to maintain this position. With its emphasis on roles, Identity Theory struggles to address violations of normative expectation (Schwartz and Stryker 1970; Stryker and Craft 1982). The limitation of contemporary identity theory is present because of the extreme focus on roles and norms. Lopata and Thorne (1978) comment about this limitation when they note that roles should *only imply* behavioral prescriptions toward specified others, questioning the trans-situational nature of the role-identity.

Identity theory has primarily been limited to a focus on roles and role related behavior. However, the complexity of self strongly suggests that there are other bases for identity formation. This

leads to two central questions of contemporary identity research. Question one, what are the primary bases of identity and question two, when there are competing demands on behavior from role expectations and other self-processes what predicts behavior?

Including Values

Following the work of Thoits and Virshup (1997), and more recently Burke and Stets (2009), Gecas (2008) has suggested that sociological-social psychology needs to allow for more conceptualizations of identity and that values form value-identities (Stets and Carter [2011] call this moral identity). Hitlin (2008) has called for a similar consideration but invokes Haidt (2007) to suggest that values represent a core self that is antecedent to and trans-situational with other self-processes. He calls this the "personal identity" (Hitlin 2003).

Values come from, "socialization and learning experiences, the social roles [people] play, the expectations and sanctions [people] encounter, and the abilities [people] develop" (Schwartz 2006a: 960). For example, a student may learn from a teacher that hard work and honest effort are essential parts to being a student. This message gets repeated as the person is channeled through the socioculture of role-positions (Gordon 1976; Haidt 2007; Roccas and Sagiv 2010). Socialization is a part of value formation, but values are not tied to finite role-positions. Value expectations, mutually not exclusively role specific, can transcend role-positions. Internalized values become more or less important to the person, and like role-identities get ranked in terms of salience. Increased value salience means the value is more likely to be carried across situations. Operationalization of values by Schwartz and colleagues in terms of salience is remarkably similar to Stryker's role-identity conceptualization. The empirical work on values has also produced a cross-culturally verified organization for human values (Schwartz 2006b). Across the globe, people have a similar (internal) structure to their values, both in terms of their importance and salience.

FIGURE 1: Schwartz Structure of Human Values (1992)
Source: Hitlin and Piliavin (2004)
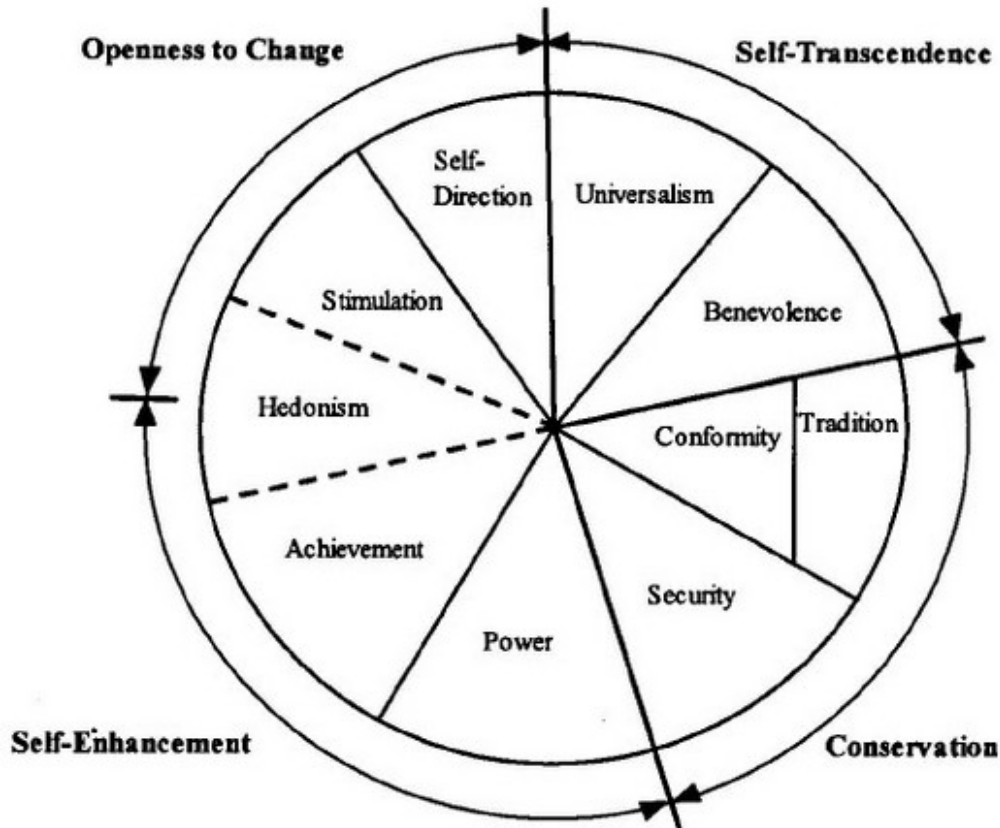
Do values form value-identities that can be ranked in terms of their salience or are values an ever present part of self? Ultimately testing the development of a value-identity falls outside of the scope of these data. However, this study takes a necessary first step: determining if the salience of a value (i.e., self-transcendence) is predictive of behavior compared to a salient role-identity. The findings of this analysis will provide support to one or the other side of the debate regarding the nature of values vis-à-vis the self. If Gecas and Schwartz are correct the relative salience of a given value versus role is what matters. This would suggest that values are subject to salience and are a part of symbolic interaction. If Hitlin and Haidt are correct the salience of the value should create a "core" sense of personal identity that remains in effect because of its antecedent nature relative to other self-processes.

This study takes as a starting point Schwartz's notion that self-transcendence is in conflict with self-enhancement as Figure 1 indicates (see Bardi & Schwartz 2003). Schwartz argues that the relationship between values supports the validity of their ordering, even in the face of low scale reliability (see Schwartz & Rubel-Lifschitz 2009: 175). The analysis presented here makes the assumption that cheating is inherently a self-enhancing activity. Those with greater self-transcendent value beliefs should be less likely to engage in cheating, self-enhancement. Following the a priori assumption of conflict this article introduces a study of values versus role salience as it influences related behavior.

Hypothesis 1: Self-transcendent value expectations will be predictive of academic dishonesty. As self-transcendence increases the likelihood of academic dishonesty will decrease.

Hypothesis 2: Students are free to role-make the student identity to require minimal commitment to their academic achievement. Given this fact, among a large sample population of students, the student role-identity will not be predictive of academic dishonesty.

Hypothesis 3: For a sub-population of students who report acute salience of their student role-identity the student role-identity will be a better predictor of cheating than a value of self-transcendence.

SAMPLE AND RESEARCH METHODS

Data comes from students at a large Midwestern public University and a nearby Junior College. [1] Surveys were administered via a double blind anonymous survey. Data collection began in April of 2009 and ended December 2010. A total N of 1362 respondents (620 men, 709 women) participated in surveys; with 562 coming from the community college and 800 coming from the large state university. Data accurately reproduces the demographics of each institution. [2]

The Academic Dishonesty construct comes from an International Personality Item Pool (IPIP) scale (Goldberg et al. 2011). The three questions are: 1) I sometimes cheat to get ahead, 2) I sometimes break the rules, and 3) I know how to get around the rules. Though these questions do not specifically target cheating in college per se, the questions were asked immediately following students being told to focus on the salience of their student identity. Given the timing, presentation, and overall focus of the study with Cronbach alpha of .70 this is a good measure of a student's willingness to engage in cheating. [3]

The self-transcendent value construct also comes from IPIP. Measures for this scale are: 1) I trust others, 2) I believe that others have good intentions, 3) I trust what people say, 4) I believe that people are basically moral, and 5) I believe in human goodness. Similar to the limitations of the deviance construct this is not a perfect measurement for the latent variable. A more apt description might be "general self-transcendence belief." However, research on the Schwartz (1992) values structure has shown that the values forming the higher-order structure of self-transcendence come from specific lower items such as trust, equality, responsibility, and benevolence. The IPIP value scale captures the lower-level items in the Schwartz construct. Research by Burke and Stets (1999) comments about the risk involved with a personal value like trust. The uncertain nature of trust pushes thought outside of self through expectations of goodwill and benign intent toward a generalized other's benevolence. Inclusion of the trust measures within the construct containing items on morality, good intentions, and human goodness produce a valid proxy for a value of self-transcendence, or at least belief in self-transcendent principles. Values are beliefs that guide action in a person's life. Research has shown that trusting others, believing in the morality of others, and in the goodness of people's intentions guides' behavior (Barbalet 2009; Glanville and Paxton 2007; Rahn et al. 2009; Schwartz 1994). [4] Scaled together these items generate a Cronbach alpha of .833.

The student identity measure is, "Thinking of your role as a student, how much would you agree or disagree with the statement: Being a student is important to the way I think of myself." [5]

Previous research has shown that age, sex, and race have an impact on academic dishonesty; these control variables are also included in the models (McCabe and Trevino 1997).

FINDINGS

Table 1. Combined Model Unstandardized Estimates for *m*1-*m*10

			CFA Model [a]	Theoretical Model	Theoretical Model with Controls	
				Model 1	Model 2	Model 3
AD	←	SiD		-0.013	.027	
AD	←	ST		-0.076**	-.086**	-.082*
AD	←	Sex			-.216***	-.212***
AD	←	Age			.093***	.093***
AD	←	Race			-.063+	-.064+
Obs1(ST)	←	ST	.739~	1~	1~	1~
Obs2(ST)	←	ST	.652***	.772***	.772***	.772***
Obs3(ST)	←	ST	.753***	.937***	.937***	.937***
Obs4(ST)	←	ST	.823***	.933***	.933***	.933***
Obs5(ST)	←	ST	.569***	.677***	.677***	.677***
Obs1(AD)	←	AD	.533~	1~	1~	1~
Obs2(AD)	←	AD	.731***	1.385***	1.317***	1.316***
Obs3(AD)	←	AD	.642***	1.212***	1.230***	1.230***
		KMO AD	.650 (p = .000)			
		Alpha AD	.668 (n = 3)			
		KMO ST	.848 (p = .000)			
		Alpha ST	.833 (n = 5)			
	RMSEA (PCLOSE)		.032^L (1)	.015^L (1)	.019^L (1)	.022^L (1)
			.046^H (.774)	.032^H (1)	.032^H (1)	.033^H (1)

AGFI	$.967^{L}$ / $.980^{H}$	$.981^{L}$ / $.990^{H}$		$.975^{L}$ / $.984^{H}$	$.977^{L}$ / $.984^{H}$
GFI	$.979^{L}$ / $.987^{H}$	$.989^{L}$ / $.994^{H}$		$.984^{L}$ / $.990^{H}$	$.985^{L}$ / $.990^{H}$
IFI	$.983^{L}$ / $.991^{H}$	$.993^{L}$ / $.998^{H}$		$.986^{L}$ / $.995^{H}$	$.988^{L}$ / $.995^{H}$

N for all models = 1362

Variable Legend:	AD = Academic Dishonesty
	Age = Age of Respondent
	Obs#(Construct) = Observed Item for Latent Variable
	Race = Race of Respondent, 0 = other 1 = white

Sex = Sex of Respondent, 0 = male 1 = female

SiD = Student Identity
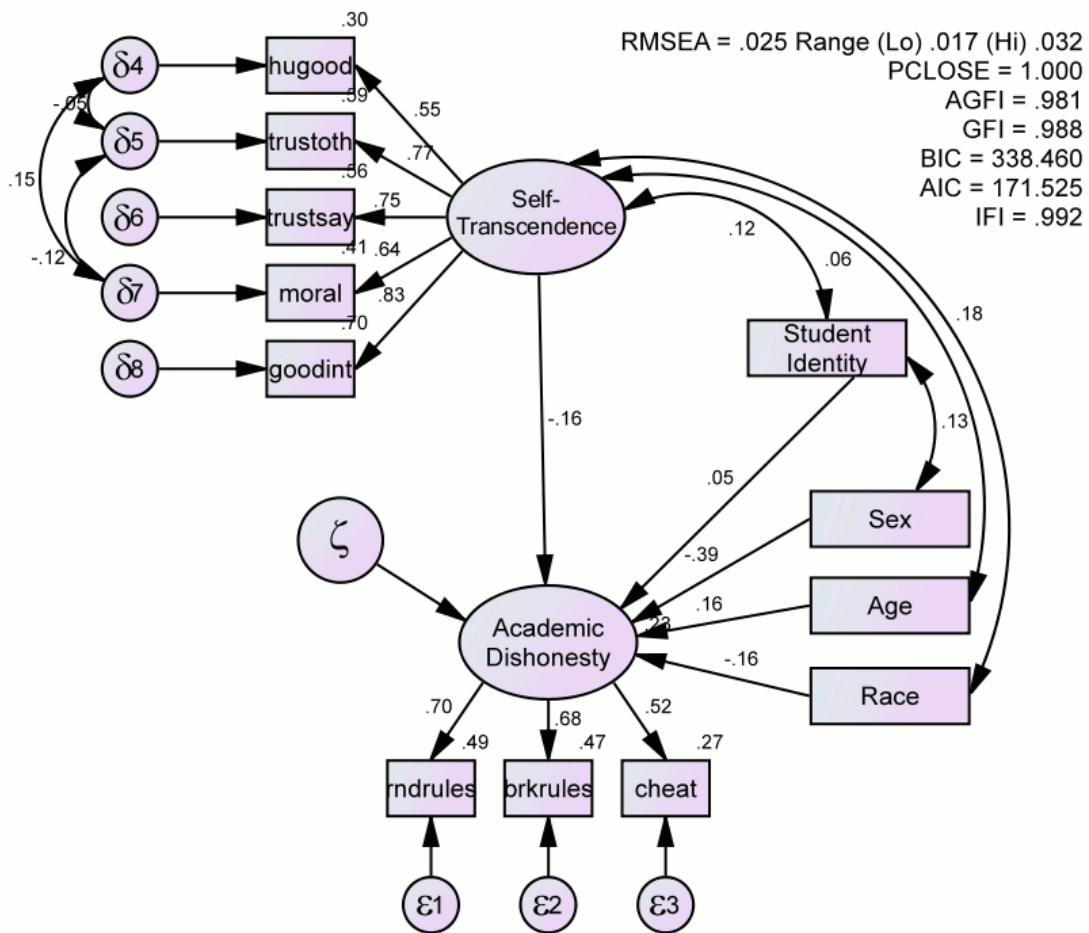
ST = Self-Transcendence

Statistical Legend: KMO = Kaiser-Meyer-Olkin Measure of Sampling Adequacy & Bartlett's Test

Alpha = Cronbach's Alpha

~ Fixed Parameter for Identification

[L] Lowest value across *m* datasets / [H] Highest value across *m* datasets

[a] Loadings are standardized.

+ P ≤ .10 / * P ≤ .05 / ** P ≤ .01 / ***P ≤ .001

FIGURE 2.

Full Theoritical Model: With Controls (*m=1*)

Fit statistics for all models show the data fit exceptionally well. Model 1 in Table 1 tests the student role-identity with self-transcendence. The student identity is not predictive of cheating, but the value construct is. As self-transcendence increases by 1, the probability of that student cheating decreases (B = -0.076, P = .003). In other words, people with greater self-transcendent value beliefs are less likely to cheat. In this first model, academic dishonesty is regressed on the value and role-identity constructs (a highly parsimonious model to begin with).

Model 2 in Table 1 gives the results of the hypothesized SEM model with control variables. Model 2 also includes a measure of location (university vs. community college), age, sex and race. Again the student identity is not predictive of cheating, but the value construct is. As self-transcendence increases by 1, the probability of a given student cheating decreases (B = -0.086, P = .005). Age, sex, and race are also significantly related to cheating. The measure for location is not significant and gets dropped. Consistent with academic dishonesty literature as compared to women men are more likely to self-report involvement in cheating. For race, when race goes up

by 1 the probability of a given student cheating goes down (B = -0.075, P = .068, note this exceeds the typical 95% CI, but falls within a 90% CI). In other words, as compared with whites all other races are more likely to self-report engagement in cheating.

Model 3 is the final SEM with the emergent exogenous variables. Since student role-identity is not significant in any of the previous SEMs this final analysis is run twice. In the first run, the student role-identity measure is withheld. In the second run, student role-identity is included. The second run of the model again found that student role-identity is not significant, and the inclusion of the role-identity measure decreases model fit. The parsimonious, better fitting model is reported.

Model 3 in Table 1 shows as a respondent's self-transcendence increases by 1 the probability of cheating decreases (B = -0.082, P = .046). Sex, race, and age are all significantly related to cheating in this final model. Compared to women, men are more likely to self-report cheating. As compared with whites the combined category of all other races are more likely to self-report engagement in cheating (note this result exceeds the typical 95% CI, but falls within a 90% CI). Including age, as a respondent moves up categorical divisions, corresponding with a decrease in age, cheating increases. This means younger students are more likely to cheat as compared to older students. [6]

A direct test of the two competing ideas about values comes from a subsample of 172 respondents taken from the larger sample of 1362. The subsample is filtered to include only those people who report that their student identity is more salient than competing identities. The idea is to see if acute salience of the student role-identity supersedes the value of self-transcendence that is significant for the full group. If self-transcendence remains predicative of cheating for this subsample it would support the notion that values are always explicitly tapped prior to and during behavior, forming a "core" identity. If self-transcendence is not significant the argument that values are antecedent to other self-process would be seriously questioned. This would suggest that values, like roles, are subject to relative salience.

Measurement of role-identity salience comes from a respondent pitting their two most salient role-identities against one another. [7] A total n = 172 of respondents reported that their student role-identity is most salient.

Table 2: Generalized Ordered Logit Estimates

Number of obs (after listwise deletion) =	139
LR chi^2(24) =	61.13
Prob > chi^2 =	0.0000
Pseudo R^2 =	0.1523
Log likelihood = -170.15808	Coefficient

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	Strongly Disagree	
	SiD	-1.514697***
	ST	.3076512
	Race	-.6299126+
	Age	.3630202+
	Male	.5871999
	_cons	9.496654
	Disagree	
	SiD	-.3170023
	ST	-.1342933
	Race	-.6482609***
	Age	.0248094
	Male	-1.223766**
	_cons	4.170873
	Neither	
	SiD	1.063311
	ST	.0397955
	Race	-.3535673
	Age	.6977756
	Male	-.6666615
	_cons	-6.404746
	Agree	
	SiD	0.9236131
	ST	0.2947707
	Race	-0.280919
	Age	0.2146229
	Male	-1.998671
	_cons	-5.822021

Strongly Agree is the Reference Category / + P ≤ .10 / * P ≤ .05 / ** P ≤ .01 / ***P ≤ .001

A Generalized Ordered Logit (GOL) model based on a categorical dependent variable is the final model analyzed. GOL includes the outcome asking students to respond to the statement, "I sometimes cheat to get ahead" with self-transcendence (ST modeled as factor regression scores) and controls. The overall model is significant (Chi2[24df] = 74.77, P = .000). Once again sex, age, and race are significant predictors of cheating. However, contrary to the findings for the full sample with the salience of student identity maximized the self-transcendent value is not significant. In fact, this value is not significant for any of the ordered categories. On the other hand, the same measure of student role-identity is predictive of cheating. For this subsample, as the student role-identity increases in importance cheating decreases (B = -1.5, P = .000).

DISCUSSION

So why are students cheating? Consistent with Schwartz's (2009) theory of human values, for the majority of students a significant predictor of academic dishonesty is the salience of self-transcendent values, as hypothesis 1 suggested. As self-transcendence increases cheating goes down. However, for a subset of students, the acuteness of the student role-identity is the better predictor, as suggested by hypothesis 3. Those who self-report that their student role-identity is most salient are the least likely to report cheating. In essence, both value and role-identities are predictive, depending on the relative salience. Hypothesis 2 proposed that students are able to structure their self-concept in different ways, making the relative salience of a given identity the crucial predictor. Analysis results support each of the hypothesis presented. In addition, the directionality of the relationship between the value construct and cheating substantiates the use of the value items as measures of self-transcendence (i.e., as self-transcendence increases self-enhancement decreases). This study finds that between the two competing sociological ideas regarding values conceiving of values as one basis for identity is the appropriate operationalization of human values. Conceiving of values as forming the unique *value-identity* is also complementary to extant identity theory.

Beta weights reported for this study were small, though significant. With this outcome how much variance is explained? This is a common question when dealing with significant yet small findings, and one that has an entire literature behind it. A few things need to be considered when assessing the strength of the effect. First, the sample was diverse. Considering the diversity represented on both campuses a significant result is not a small thing. Second, this study measured complex social psychological—with emphasis on the psychological—processes developed through latent variables. Finally, this study conducted an empirical investigation of the linkage between values and behavior, something that is still under development within the literature on values (Tam and Lee 2010).

Another limitation of this study is the cross-sectional nature of these data; therefore causation cannot be confirmed. Analysis of SEM models included reverse order modeling to strengthen the outcome, but given the cross-sectional nature correlation, not causation is the outcome.

This study laid the groundwork for further research on the formation of the value-identity by demonstrating the relative salience of values versus role-identities. Empirical confirmation that values form value-identities falls outside the reach of this study. However, this idea and its

implications are worthy of further investigation. Indeed, future research needs to address how and under what circumstances values are trans-situational, form value-identities, and are salient across situations.

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ENDNOTES

[1] See Appendices for the data analysis strategy.

[2] Contact the author for full details regarding these data.

[3] To address the limitations presented by these measures the study design was mixed-methods incorporating a qualitative analysis of student interviews and a content analysis of the university newspaper archives on campus cheating.

[4] The ultimate outcome of the analysis will further substantiate the reasonable nature of this proxy for self-transcendence. Cheating is assumed to be self-enhancing, if the self-transcendent construct has a negative relationship with cheating use of the IPIP scale is valid. However, if the correlation is positive the proxy would be severely questioned. The author of this paper is also currently working on a project utilizing the Portrait Values Questionnaire to strengthen the findings presented here.

[5] Initially, based on identity theory Student Identity measured both intensive and extensive commitment. However, exploratory factor analysis suggested this was not a tenable combination for an underlying latent construct (.32 loading for extensive and .32 loading for intensive) with Cronbach's alpha = .16. A compelling sub-question raised by these data is whether or not there truly is a distinction between psychological centrality, intensive commitment, and identity salience in general.

[6] All models were reverse order tested to see if model fit changed (e.g., academic dishonesty predicting student role-identity and Self-Transcendence). Reverse modeling decreased model fit, thus strengthening the findings reported.

[7] See Appendix C for more.

Appendix A: Analytic Strategy

Missing data was addressed using a Bayesian multiple imputation (MI) procedure. The result is a more accurate estimation process than is provided by post-hoc solutions (Schafer & Graham, 2002). Following the research of Allison (2002; 2010), Little and Rubin (1987), and Schafer (1997) a model based imputation generated the imputed values.

Bodner (2008: 670-671) has introduced a formula for calculating the amount of imputation necessary to achieve efficient and reliable parameter estimates. Therefore, imputation followed Bodner's formula for calculating the number of MI datasets, referred to as m (see also Rubin, 1987).

$$m = 3 + (.09 - .05) \times \frac{6 - 3}{.10 - .05} = 5.4$$

The final step of MI data estimation involved coding a series of macros in Microsoft Excel in order to combine and analyze m datasets.

Rubin (1987) originally proposed that parameter estimates from MI datasets such that b_k is set as "the estimated regression coefficient in sample k of the m samples, and sk [is the] estimated standard error. The mean of the b_k's is b, [and] its estimated standard error is given by" (Paul D. Allison, 2010: 7-8):

$$\sqrt{\frac{1}{m}\sum_k S\frac{2}{k} + \left(1 + \frac{1}{m}\right)\left(\frac{1}{m-1}\right)\sum_k (b_k - \bar{b})^2}$$

Schafer (1997: 109) adapted Rubin's (1987) initial equations; this study adopts these modifications. To combine m datasets Schafer's algorithm is created in a series of Microsoft Excel macros as follows (see Arbuckle 2011: 469-473 for full details of this process):

Again let m be the number of complete imputed datasets ($m = 10$)

Let $\hat{Q}^{(k)}$ be the estimate from sample k, so $\hat{Q}^{(1)} = 0.079$, $\hat{Q}^{(2)} = 0.054$, and so on.

Let $\sqrt{\mathcal{U}^{(k)}}$ be the estimated standard error from sample k, so $\sqrt{\mathcal{U}^{(1)}} = 0.03$, $\sqrt{\mathcal{U}^{(2)}} = 0.033$, and so on.

The MI estimate of the regression weight is the mean of the 10 estimates form the 10 completed datasets:

$$\bar{Q} = \frac{1}{m}\sum_{k=1}^{m} \hat{Q}^{(k)} = 0.047$$

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The standard error for the combined parameter estimate is obtained by computing the average within-imputation variance:

$$\bar{U} = \frac{1}{m}\sum_{k=1}^{m} U^{(k)} = 0.001$$

The between-imputation variance:

$$B = \frac{1}{m-1}\sum_{k=1}^{m}\left(\hat{Q}^{(k)} - \bar{Q}\right)^2 = 0.013$$

The total variance:

$$\mathcal{T} = \bar{U} + \left(1 + \frac{1}{m}\right)B = 0.001 + \left(1 + \frac{1}{10}\right)0.013 = 0.015$$

Multigroup standard error is thus:

$$\sqrt{\mathcal{T}} = \sqrt{0.015} = 0.123$$

The test of the null hypothesis that the regression weight = 0 in the population is based on:

$$\frac{\bar{Q}}{\sqrt{\mathcal{T}}} = \frac{0.047}{0.123} = 0.383$$

If the regression weight is 0 it has a *t* distribution with degrees of freedom given by:

$$v = (m-1)\left[1 + \frac{\bar{U}}{\left(1 + \frac{1}{m}\right)B}\right]^2 = (10-1)\left[1 + \frac{0.001}{\left(1 + \frac{1}{10}\right)0.013}\right]^2 = 10.329$$

Bivariate Correlations for Variables in study, *m*=1- *m*=10

	Race	Age	Sex	SiD	ST	AD	Obs1 (AD)	Obs2 (AD)	Obs3 (AD)	Obs1 (ST)	Obs2 (ST)	Obs3 (ST)	Obs4 (ST)	Obs5 (ST)
Race	1.00													
Age	.000	1.00												
Sex	.000	.000	1.00											
SiD	.000	.000	.168	1.00										

ST	.170	.073	.000	.122	1.00								
AD	-.138	.164	-.386	-.034	-.133	1.00							
Obs1 (AD)	-.091	.108	-.254	-.023	-.088	.659	1.00						
Obs2 (AD)	-.097	.116	-.272	-.024	-.094	.704	.463	1.00					
Obs3 (AD)	-.074	.089	-.208	-.018	-.072	.539	.355	.379	1.00				
Obs1 (ST)	.095	.041	.000	.068	.556	-.074	-.049	-.052	-.040	1.00			
Obs2 (ST)	.128	.055	.000	.092	.753	-.100	-.066	-.070	-.054	.383	1.00		
Obs3 (ST)	.130	.056	.000	.093	.764	-.102	-.067	-.071	-.055	.425	.575	1.00	
Obs4 (ST)	.109	.047	.000	.078	.640	-.085	-.056	-.060	-.046	.461	.438	.488	1.00
Obs5 (ST)	.140	.060	.000	.100	.821	-.109	-.072	-.077	-.059	.457	.619	.627	.525	1.00

Hypothesis 1 and 2 were analyzed using the structural equation modeling (SEM) framework with imputed data. Hypothesis 3 utilized a sub sample of respondents with total n = 172. A logistic regression model was used to test hypothesis 3.

APPENDIX B: GOL Analysis

For the SEM framework to work large sample sizes are necessary. Since all of the variables for the endogenous latent construct (the dependent variable) were drawn from categorical-ordered data an OLS regression was not appropriate. For this reason, a logistic regression model was used to test the final hypothesis. The structure of an ordinal logistic model can be expressed $y^* = x'\beta + \varepsilon$, with y^* representing the true unobserved dependent variable, x' is the orientation of dependent variables, β is the orientation of regression coefficients to be estimated, and ε is a disturbance term with the logistic distribution. Similar to the concept of latent variable testing in SEM logistic regression cannot directly observe y^*, instead I observe the response categories in order to express the outcome of y^* in terms of probabilities (Long & Freese, 2006):

$$y = \begin{cases} 0 \; if \; y^* \leq \mu_1, \\ 1 \; if \; \mu_1 < y^* \leq \mu_2, \\ 2 \; if \; \mu_2 < y^* \leq \mu_3, \\ \quad\quad etc. \\ N \; if \; \mu_N < y^* \end{cases}$$

APPENDIX C: Survey measures for identity salience

At the beginning of the survey respondents were given a small slip of paper. They were instructed to use this piece of paper to write down the name of two roles as the survey progressed. The first question asked students to, "Think of the role that you feel is the <u>most</u> important to the way you think of yourself. A role is a position you have that includes relationships and obligations with others (e.g., student, teacher, worker, employer, mother, father, son, daughter, friend, etc). Write this role down. Once you have written down the role, please do not change it for any of the answers you give during the remainder of the survey. In other words, write it down and each time you are asked to think about this role please look at what you have written and think of only this role." Respondents were then asked measures that addressed both extensive and intensive commitment to this role.

Later during the survey respondents were asked to, "Think of another/different role that you feel is similarly important or as close to the first as possible to the way you think of yourself. Again, a role is a position you have that includes relationships and obligations with others (e.g., student, teacher, worker, employer, mother, father, son, daughter, friend, etc). Give this second role a name and <u>write it down.</u> Once you have written down the role, please do not change it for any of the answers you give for the remainder of the survey. In other words, write it down and each time you are asked to think about this role please look at what you have written and think of only this role."

Following these procedures respondents were asked, "If you were to classify the first role into a more general category the first (and second) role you wrote down would be:"

Academic Role (i.e., Student, Teacher, etc.) (1)
Work Role (i.e., Employee, Employer, etc.) (2)
Family or Romantic Role (Husband, Wife, Daughter, Son, etc.) (3)
Athletic Role (i.e., Team Member, Coach, etc.) (4)
Extracurricular (i.e., Club member, Online gamer, etc.) (5)
Religious Role (Church member, Church leader, etc.) (6)
Other Role (7)

Finally to measure salience one last time respondents were asked, "It may be difficult to choose but, please make a choice between the roles. If you have an obligation to ___role 1___ that conflicts with an obligation that you have to ___role 2___ and can only keep <u>one</u> obligation, I would keep my commitment to:"
Role 1 (1)
Role 2 (0)

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AUTHOR'S NOTE

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R.C. Morris conducted this research following a course on Self and Identity at Indiana University Bloomington with Sheldon Stryker and a course on Advanced Topics in Social Psychology at Purdue University with Viktor Gecas. Competing ideas between these two scholars regarding identity and values inspired this paper. (rmorris@purdue.edu)