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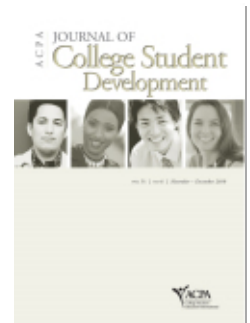
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A Path Analysis of Social Problem-Solving as a Predictor of White Racial Identity

Amanda G. Carr Grace I. L. Caskie

This study examined (a) whether a developmental model or a model in which all subscales' measurement errors are correlated best explains the relationships among White racial identity (WRI) statuses, and (b) social problem-solving (SPS) skills as a predictor of WRI. Path analysis was conducted with a sample of 255 White undergraduate students from a private university. Results showed that a correlated errors model had better fit than a developmental model of WRI. SPS was examined as a predictor of WRI statuses, using a correlated errors measurement model. Three of the hypothesized relationships between SPS and WRI were significant. Theoretical and practical implications are discussed.

Diversity on U.S. college campuses is increasing, and by the year 2020, students of color will make up almost 50% of the U.S. college student population (Meacham, McClellan, Pearse, & Greene, 2003). Reflecting these changing demographics, a study of the impact of racial diversity on a college campus revealed that the majority of students reported having racially mixed friendship groups (Antonio, 2001). Identity development also becomes particularly relevant during the college-age period (Baumeister, 1991; Erikson, 1968). As such, White college students' psychological orientation towards racial group membership (i.e., their White racial identity) may become especially salient. As individuals begin, possibly for the first time, to explore their reactions to interracial interactions and the societal

dynamics of racism (Carter, 1997; Helms, 1996), their interpretation of the meaning of their race and the race of others (Carter, 1996) may be greatly influenced by their general ability to solve social problems. However, the relationship of social problem-solving appraisals to racial identity development has been unexplored in White college students.

THE RELATIONSHIP OF SOCIAL PROBLEM-SOLVING TO WHITE RACIAL IDENTITY

The relationship of social problem-solving (SPS) to White racial identity (WRI) is supported by three shared theoretical and conceptual features. First, both SPS and WRI incorporate a sociocultural approach, focusing on the connections between people and the cultural context in which they act and interact in shared experiences (Vygotsky, 1978). The person–environment approach of the SPS concept broadly addresses how individuals perceive and cope with intrapersonal and interpersonal components in everyday living (D'Zurilla, Nezu, & Maydeu-Olivares, 2002). Helms's (1984, 1990a, 1995, 1996) WRI theory also emphasizes a person–environment approach, highlighting the intrapsychic ramifications of an individual's experience in a race-based society. As illustrated, both SPS and WRI theories provide an understanding of how individuals interpret and respond to their social environments.

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Second, SPS theory and WRI theory both describe their underlying components, that is, orientation for SPS and status for WRI (D’Zurilla et al., 2002; Helms, 1996), as involving schemas (Piaget, 1952). Positive and challenging schemas are embedded in SPS’s positive problem orientation (PPO) and in WRI’s autonomy status; both are characterized by cognitive flexibility and adaptability in social situations (Durlak, 1983; Helms, 1995). In contrast, negative and threatening schemas are embedded in SPS’s negative problem orientation (NPO), characterized by appraising a problem as a threat and becoming easily frustrated (D’Zurilla et al., 2002), and in WRI’s disintegration and reintegration statuses, involving the belief in inequality between racial groups and fear and anger toward individuals of other racial groups (Helms, 1996).

Third, Berzonsky’s (1989, 1992) social cognitive theory of identity development describes individuals practicing an information-oriented style (i.e., engaging in exploration before making committed decisions) as possessing cognitive flexibility and good problem-solving skills characterized by problem-focused coping. His model addressed a unique aspect of identity development—problem-solving ability—thus, providing a theoretical link between the two constructs.

Despite the theoretical and conceptual similarities of SPS and WRI, only one known study has empirically examined the relationship between social problem-solving and racial identity, and this study used a sample of Black college students (Neville, Heppner, & Wang, 1997). Neville et al. found that students with greater endorsement of pro-Black/anti-White sentiments (immersion/emersion status) tended to have a negative problem-solving appraisal, lacking confidence and avoiding problems. On the other hand, higher internalization attitudes in the most advanced status of Black racial identity were associated with a positive

problem-solving appraisal. These findings are consistent with the aforementioned conceptual link (e.g., schemas) between SPS theory and WRI theory. Nevertheless, no study to date has examined the relationship between social problem-solving and racial identity for White college students.

For White college students, the directionality of the relationship between these two constructs may differ as compared to Black college students. Specifically, Neville et al. (1997) examined Black racial identity as a predictor of social problem-solving. The directionality proposed is likely to be accurate given Black individuals are socialized at a young age in an oppressive and highly racialized society to think of themselves as a racial group (Helms & Cook, 1999). Therefore, Black students’ racial identity development may be more salient and influence their appraisal of social problems to a greater degree in a college environment. However, White individuals, given their privileged status in the U.S., are often taught to ignore and minimize the meaning of their racial group membership (Ponteroto, Utsey, & Pedersen, 2006). As such, White college students’ exploration of their racial identity may not occur in great depth until they enter a diverse college environment. This study presumes that White college students’ core construct of social problem-solving influences their racial identity development, as opposed to the directionality proposed by Neville et al. for their sample of Black students.

Relationships Among White Racial Identity Statuses

A great debate exists regarding the relationships among the statuses or subscales of the White Racial Identity Attitude Scale (WRIAS; Helms & Carter, 2002). Helms (1996) initially proposed a developmental model based on the premise that White individuals develop racial identity by means of a sequential process in which increasingly more sophisticated

differentiations of the ego evolve from earlier or less mature statuses. As such, subscales developmentally contiguous to one another should be correlated without being completely overlapping. Numerous studies have shown that the WRIAS subscales are intercorrelated, particularly those subscales adjacent to one another. According to Helms (1996), this pattern further supports her theoretical assertion that White racial identity statuses are mutually nonexclusive. In other words, a White individual may be operating in one or more statuses simultaneously. In fact, Helms reports that high subscale intercorrelations suggest the extent to which individuals in a sample use two schemas.

On the other hand, recent reviews of Helms's WRI theory and the WRIAS (Ponterotto & Park-Taylor, 2007; Quintana, 2007) have asserted there is insufficient evidence to conclude that racial identity statuses follow a normative developmental trend or are hierarchically arranged. This argument is based on the absence of longitudinal and cross-sectional research supporting this progression and the plethora of empirical investigations yielding contradictory evidence regarding the factor structure and reliability of the WRIAS as proposed by Helms (e.g., Behrens, 1997; Mercer & Cunningham, 2003; Pope-Davis, Vandiver, & Stone, 1999; Rowe, Behrens, & Leach, 1995; Swanson, Tokar, & Davis, 1994). Nonetheless, Helms (2007) responded to these criticisms persistently and claimed that researchers evaluated the subscales' psychometric properties on the basis of strict conformance to the principles of classical measurement theory without consideration of the multidimensional and ipsative natures of the WRIAS.

In consideration of these characteristics of the WRIAS, Helms (2007) encouraged researchers to engage in better practices for matching WRI theoretical constructs

to its measurement model, including the consideration of correlated measurement error (Helms, 1996; Raykov, 1998). Correlated measurement errors reflect the influence of shared method variance, including rater, informant, response set, and scale-specific properties (Cole, Ciesla, & Steiger, 2007). Helms (2007) contended that measurement errors are likely correlated, given that (a) WRIAS subscales are administered to the same individuals at the same time via the same measure, and (b) WRI theory supposes that subscale scores are interrelated within individuals. Further, Helms (1996) stated that WRI theory is a description of how people process racial information at an individual level and not an entire group level, and these individual differences in responding to the items of the WRIAS would be considered error under the assumptions of classical measurement theory.

Given the debate over the developmental progression of statuses of the WRIAS and Helms's recent response (2007) to criticisms of the WRIAS, the authors aimed to examine the relationships among the theoretically derived WRI statuses as an initial exploratory step. An examination of two distinct models of WRI (i.e., a developmental model and a model in which all subscales' measurement errors are correlated) may not only assist in the investigation of the relationship between SPS and WRI, but also in future research utilizing WRI theory and the WRIAS. Finding that a developmental model incorporating direct paths between subsequent WRI statuses shows good fit to the data would lend support to Helms's original WRI theory (1996). Alternately, if a model specifying correlated measurement errors among the WRIAS subscales shows good fit to the data, this result would support recent calls for a change in WRI theory (Quintana, 2007) from a developmental model to a model that emphasizes individual typologies or profiles (Rowe, Bennett, & Atkinson, 1994).

METHOD

We examined two main research questions: (a) Does a developmental model or a model in which all subscales' measurement errors are correlated best explain the relationships among statuses of the WRIAS? and (b) Does SPS predict WRI? The first research question is posed as an exploratory analysis, and therefore no specific hypothesis is made regarding the relationships among statuses of the WRIAS. For the second research question, we hypothesized: (a) positive problem orientation (PPO) and rational problem solving (RPS) will positively predict autonomy, the advanced status of WRI; (b) negative problem orientation (NPO), impulsivity/carelessness style (ICS), and avoidance style (AS) will negatively predict autonomy status; (c) NPO, ICS, and AS will positively predict disintegration and reintegration statuses, both characterized by a belief in White racial superiority; and (d) RPS will negatively predict disintegration status, representing feelings of guilt and helplessness and an avoidance of people of color.

Participants

Participants included 255 White undergraduate students (96 men, 159 women) between the ages of 18 and 24 years ($M = 19.35$, $SD = 1.26$) at a predominantly White, private university in the Northeastern United States. Forty-seven percent ($n = 119$) of the sample were freshmen, 23% ($n = 59$) sophomores, 16% ($n = 42$) juniors, and 14% ($n = 35$) seniors. Further, 100% of the sample identified their race as White, and 95% ($n = 242$) of the sample identified their ethnicity as European American; 5% ($n = 13$) did not identify their ethnicity. In terms of social class of their families, 6% ($n = 14$) of the sample reported working class status, 61% ($n = 155$) reported middle class status, and 33% ($n = 85$) reported upper class status.

Procedure

Data collected were part of a larger study that was conducted between February 2006 and February 2008 examining predictors of academic performance and adjustment in college. A convenience sample was employed whereby participants volunteered in response to campus-wide advertising via e-mail and posted flyers along with solicitation through sports and fraternal organizations and sociology, psychology, and engineering classes. The study measures were completed in a classroom or study hall setting. Prior to administering the study measures, participants were asked to complete a written informed consent that highlighted the confidential and voluntary nature of the study. As an incentive, participants were offered a chance to participate in a raffle for one of three \$50 gift certificates.

Measures

Demographic Form. A demographic form was used to obtain participants' birth date, gender, race, ethnicity, class in college (i.e., freshman, sophomore, junior, senior), and socioeconomic class (i.e., working class, middle class, upper class).

Social Problem-Solving Inventory-Revised (SPSI-R). The SPSI-R (D'Zurilla et al., 2002) is a 52-item, Likert-type inventory that is linked to a 5-dimensional model of SPS that is based on a factor analysis (Maydeu-Olivares & D'Zurilla, 1996) of the Social Problem-Solving Inventory (D'Zurilla & Nezu, 1990). The SPSI-R consists of 5 major scales measuring different dimensions of SPS: (a) positive problem orientation (5 items; e.g., "Whenever I have a problem, I believe that it can be solved."); (b) negative problem orientation (10 items; e.g., "I feel threatened and afraid when I have an important problem to solve."); (c) rational problem solving (20 items; e.g., "When I am trying to solve a

problem, I often think of different solutions and then try to combine some of them to make a better solution.”); (d) impulsivity/carelessness style (10 items; e.g., “When I am attempting to solve a problem, I act on the first idea that occurs to me.”); and (e) avoidance style (7 items; e.g., “I wait to see if a problem will resolve itself first, before trying to solve it myself.”). Raw scores for each scale are converted to age-normed standard scores.

The positive problem orientation (PPO) scale measures a constructive cognitive set that involves the general tendency to (a) appraise a problem as a challenge, (b) believe in one’s own problem-solving capabilities, (c) expect positive problem-solving outcomes, and (d) commit time and effort to solving problems rather than avoiding them. In contrast, the negative problem orientation (NPO) scale measures a dysfunctional or inhibitive cognitive–emotional set that involves the general tendency to (a) appraise a problem as a significant threat to well-being, (b) doubt one’s own problem-solving capabilities, (c) expect negative problem-solving outcomes, and (d) become easily frustrated and upset when confronted with problems. PPO and NPO are not polar opposites; instead, they are best viewed as two different, albeit related, problem orientation constructs (Maydeu-Olivares & D’Zurilla, 1996).

The rational problem solving (RPS) scale measures a constructive cognitive–behavioral style involving the deliberate and systematic application of effective problem-solving skills: (a) problem definition and formulation, (b) generation of alternative solutions, (c) decision making, and (d) solution implementation and verification. In contrast, the impulsivity/carelessness style (ICS) scale measures a dysfunctional cognitive–behavioral style characterized by hurried and incomplete attempts to apply problem-solving strategies and techniques. Finally, the avoidance style (AS)

scale measures a dysfunctional behavioral style involving the tendencies to (a) procrastinate problem solving, (b) passively wait for problems to resolve themselves, and (c) shift the responsibility for problem solving to others. Greater problem-solving ability is indicated by higher scores on PPO and RPS and lower scores on NPO, ICS, and AS.

Cronbach’s coefficient alphas were reported by D’Zurilla et al. (2002) for a college student sample as .95 for the total SPSP-R, .76 for PPO, .91 for NPO, .92 for RPS, .83 for ICS, and .88 for AS. For the present sample, Cronbach’s coefficient alphas were .87 for the total SPSP-R, .72 for PPO, .89 for NPO, .92 for RPS, .84 for ICS, and .84 for AS.

White Racial Identity Attitude Scale–Revised (WRIAS). The WRIAS (Helms & Carter, 2002) is a 60-item, Likert-type inventory based on an earlier version of the inventory (Helms & Carter, 1990). It is designed to measure the extent to which a person uses each of 6 WRI statuses (i.e., schemas): (a) contact (10 items; e.g., “I hardly ever think about what race I am.”), (b) disintegration (10 items; e.g., “I have come to believe that Black and White people are very different.”), (c) reintegration (10 items; e.g., “I get angry when I think about how Whites have been treated by Blacks.”), (d) pseudo-independence (10 items; e.g., “Blacks and Whites have much to learn from each other.”), (e) immersion/emersion (10 items; e.g., “I am making a special effort to understand the significance of being White.”), and (f) autonomy (10 items; e.g., “I involve myself in causes regardless of the race of the people involved in them.”).

The contact status is characterized by the White person’s naïveté and a lack awareness of the sociopolitical significance of racial-group membership, especially one’s own. The disintegration status is represented by confusion and self-disorientation with respect to one’s own Whiteness, and ambivalent aware-

ness of the implications of race for members of other racial groups. The reintegration status is represented by a lapse into an idealization of one's own racial group and a denigration and intolerance for non-White groups. The pseudo-independence status is represented by an intellectualized commitment to one's own racial group and a quasi recognition of the sociopolitical implications of racial differences. The immersion/emersion status is characterized by the White person examining the meaning of being White in a historically racist society, and getting involved in racial activism and justice issues. Finally, the autonomy status signifies the White person's committing to social justice issues, and understanding the importance of relinquishing privileges of racism.

Internal consistency estimates were reported by Helms (1999) across 38 studies using Helms and Carter's (1990) original WRIAS measuring 5 statuses. Cronbach's coefficient alphas ranged from .30 to .63 for contact, .54 to .82 for disintegration, .58 to .83 for reintegration, .42 to .75 for pseudo-independence, and .32 to .70 for autonomy. No known studies have published internal consistency reliabilities for Helms's revised WRIAS. In the present sample, coefficient alpha reliabilities were found to be .54 for contact, .62 for disintegration, .81 for reintegration, .31 for pseudo-independence, .80 for immersion/emersion, and .55 for autonomy. Helms (1999) has indicated that the WRIAS may produce moderate to low reliability coefficients due to the measure yielding partially ipsative scores (i.e., scale scores that necessarily covary). According to Ferketich (1990), alternate assessments of scale reliability (i.e., theta coefficient) may be more appropriate for scales such as this; the theta coefficient for the total WRIAS was found to be .91 for the current sample.

Path Model and Data Analysis

Path analysis was used to test the fit of the two

proposed measurement models for the WRIAS as well as a final path model incorporating the relationships between SPS and WRI hypothesized in this study. The SPS and WRI variables were not regarded as latent variables with multiple indicators (Schumacker & Lomax, 2004), but rather as measured variables, for which path analysis is more appropriate than a structural equation model. Advantages of path analysis include the ability to estimate and test hypotheses about measurement errors (Bullock, Harlow, & Mulaik, 1994), compare the fit of two or more models via goodness-of-fit indices, and test an entire set of regression analyses simultaneously (Schumacker & Lomax). Models were analyzed in Amos™ for Windows (Amos Development Corporation, version 16.0) using the maximum likelihood estimation method. Several goodness-of-fit indices were used to evaluate model fit: chi-square, goodness-of-fit index (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), and root-mean-square error of approximation (RMSEA). For GFI, CFI, and TLI, acceptable fit was indicated by values of .90 or greater and good fit by values of .95 or greater; for RMSEA, values of .06 to .08 represented acceptable fit and values of .05 or less indicated good fit (Browne & Cudeck, 1993; Schumacker & Lomax).

Prior to testing the models, skewness statistics and normality probability plots were examined; all variables were normally distributed. First, the developmental model and correlated measurement error model for the WRIAS were estimated independently, and model fit indices were compared to determine the appropriate model to retain for the final path model examining the second research question. The developmental path model hypothesized that (a) contact would predict disintegration, (b) disintegration would predict reintegration, (c) reintegration would predict pseudo-independence, (d) pseudo-

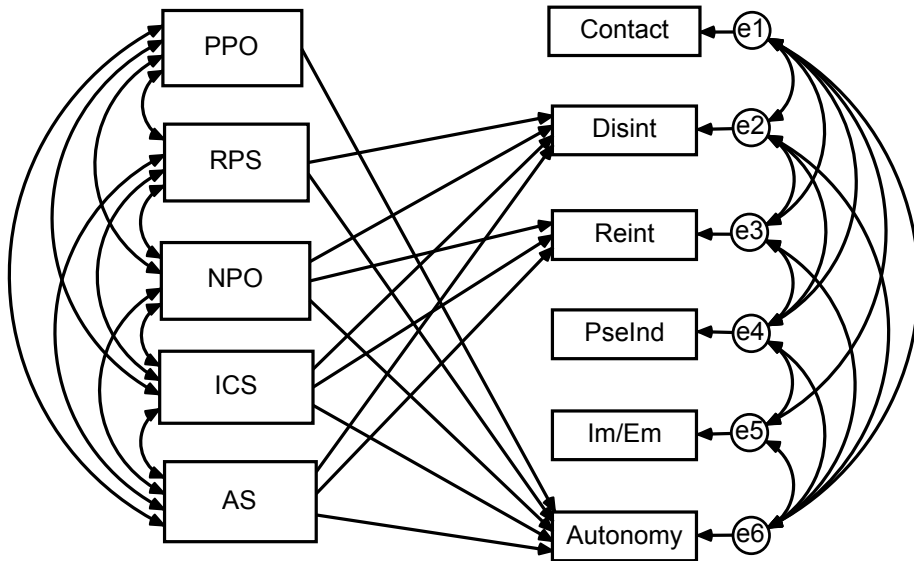


FIGURE 1. Hypothesized Path Model With Direct Paths Between SPS and WRI Subscales

Note. SPS = social problem-solving; WRI = White racial identity; PPO = positive problem orientation; RPS = rational problem solving; NPO = negative problem orientation; ICS = impulsivity/carelessness style; AS = avoidance style; Disint = disintegration; Reint = reintegration; PseInd = pseudo-independence; Im/Em = immersion/emersion.

independence would predict immersion/emersion, and (e) immersion/emersion would predict autonomy. The correlated measurement error path model hypothesized that all WRIAS subscales' measurement errors would be correlated with no direct paths between adjacent statuses as hypothesized in the developmental model. Secondly, the final path model incorporating the hypothesized relationships between SPS and the retained WRI model was examined (see Figure 1): (a) PPO, RPS, NPO, ICS, and AS would predict autonomy, (b) NPO, ICS, AS, and RPS would predict disintegration, and (c) NPO, ICS, and AS would predict reintegration.

RESULTS

Descriptive Statistics

Means, standard deviations, and intercorrelations for the SPSP-R and WRIAS subscales

are shown in Table 1. An examination of correlations indicated that, at the bivariate level, hypothesized relationships between SPS and WRI were in the expected directions and were statistically significant ($p < .05$). Adjacent WRI statuses were significantly correlated ($p < .01$) in the hypothesized direction with the exception of contact and disintegration, which were negatively correlated ($r = -.21$). Some nonadjacent statuses were more highly correlated than adjacent statuses: for example, reintegration was negatively correlated with autonomy ($r = -.51$), and disintegration was negatively correlated with autonomy ($r = -.48$).

Comparison of Measurement Models for the WRIAS

The fit indices for the model specifying a developmental progression of the WRIAS subscales were $\chi^2(10, N = 255) = 244.601, p < .001$,

TABLE 1.
Intercorrelations Among the SPSP-R and WRIAS (Revised) Scales (N = 255)

Scale	1	2	3	4	5	6	7	8	9	10	11
1. PPO	—										
2. NPO	-.38***	—									
3. RPS	.64***	.07	—								
4. ICS	-.13	.43***	-.25***	—							
5. AS	-.38***	-.61***	-.19**	—							
6. Contact	.06	-.12	.02	-.04	-.09	—					
7. Disint	-.19**	.35***	-.14*	.29***	.35***	-.21**	—				
8. Reint	-.08	.30***	-.05	.31***	.31***	-.40***	.73***	—			
9. Pselnd	.19**	-.08	.20**	-.22**	-.17**	.51***	-.28***	-.37***	—		
10. Im/Em	.09	.04	.09	.01	-.07	.19**	.12	.06	.25***	—	
11. Auton	.29***	-.26***	.28***	-.21**	-.28***	.49***	-.48***	-.51***	.45***	.25***	—
M	12.18	12.78	44.36	10.53	8.77	32.18	24.09	20.47	33.00	28.58	34.00
SD	3.64	7.74	12.52	6.13	5.14	4.71	4.83	6.02	3.87	6.11	4.40

Note. PPO = positive problem orientation; NPO = negative problem orientation; RPS = rational problem solving; ICS = impulsivity/carelessness style; AS = avoidance style; Disint = disintegration; Reint = reintegration; Pselnd = pseudo-independence; Im/Em = immersion/emersion; Auton = autonomy.
* p < .05. ** p < .01. *** p < .001.

TABLE 2.
Standardized Regression Weights for
the Final Model

Path	Final Model
	β
PPO → Autonomy	.081
RPS → Autonomy	.157*
NPO → Autonomy	-.108
ICS → Autonomy	-.043
AS → Autonomy	-.048
NPO → Disint	.194**
ICS → Disint	.059
AS → Disint	.142
RPS → Disint	-.077
ICS → Reint	.146*
AS → Reint	.109
NPO → Reint	.118

Note. PPO = positive problem orientation;
NPO = negative problem orientation;
RPS = rational problem solving;
ICS = impulsivity/carelessness style;
AS = avoidance style; Disint = disintegration;
Reint = reintegration.

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

GFI = .777, CFI = .539, TLI = .308, RMSEA = .304, which were well below the recommended cutoff values for good fit. In contrast, the alternate model specifying correlated measurement errors among WRIAS subscales indicated a perfect fit to the data: $\chi^2(0, N = 255) = .000$, $p < .001$, GFI = 1.000, CFI = 1.000. However, because the model was saturated, the true fit of this model cannot be assessed. To obtain an unsaturated model, the parameter estimates were examined to identify any nonsignificant correlated measurement errors that could be removed from the model. Correlated measurement errors for all subscales were found to be significant ($p < .01$), except for correlated measurement errors between disintegration and immersion/emersion ($p = .053$) and reintegration and immersion/emersion

($p = .329$). Therefore, these nonsignificant correlations were removed from the model, and results indicated that this modified model represented a good fit to the data: $\chi^2(2, N = 255) = 4.291$, $p = .117$, GFI = .994, CFI = .995, TLI = .966, RMSEA = .067. Further, removing these nonsignificant correlated measurement errors did not significantly decrease the fit of the model: $\Delta\chi^2(2, N = 255) = 4.291$, $p = .117$. Given these results, the model incorporating all correlated measurement errors among WRIAS subscales, except between disintegration and immersion/emersion and between reintegration and immersion/emersion, was retained as the final WRIAS measurement model when examining the relationship between SPS and WRI.

SPS as a Predictor of WRI

Results indicated the full model testing the direct effects of the SPS measures on the WRI measures represented a good fit to the data: $\chi^2(20, N = 255) = 46.441$, $p < .01$, GFI = .969, CFI = .975, TLI = .930, RMSEA = .072. Standardized parameter estimates for this model are shown in Table 2. As indicated, several of the hypothesized direct paths between SPS and WRI were significant. NPO positively predicted disintegration ($p = .015$), ICS positively predicted reintegration ($p = .022$), and RPS positively predicted autonomy ($p = .013$).

DISCUSSION

Relationships Among Statures of the WRIAS

Regarding the first research question, Helms's (1996) developmental model as the best representation of the relationships among statures of the WRIAS is not supported by this study's findings. Although scores on earlier WRI statures were significantly related to scores on adjacent higher statures, the model did not represent a good fit to the data for

our sample. As indicated in Table 1, many of the nonadjacent WRIAS subscales were more highly correlated than were adjacent scales, providing further evidence against the developmental model of the WRI. A better model of WRI is the one in which correlated measurement errors among the WRIAS subscales are incorporated into the measurement model for the WRIAS. These results support Helms's most recent (2007) suggestions for better practices for measuring the WRIAS model, specifically the 6-factor solution with correlated measurement error representing the multidimensional and ipsative natures of the scale.

The finding of good fit for the WRI model in which measurement errors among the WRIAS subscales are correlated reveals important theoretical and research implications. Rather than viewing WRI theory as a developmental model, a revised WRI model accounting for shared method variance (Cole et al., 2007) allows for greater complexity in measuring an individual's understanding of his/her own race and the race of others (Carter, 1996). According to Quintana (2007), "no single racial ideology . . . provides adaptive advantages over other ideologies in all contexts—clearly, differently ecological contexts require different racial identity ideologies and orientations" (p. 267). The use of correlated measurement errors on the WRIAS supports this idea, allowing for the separate evaluation of each WRI status as part of a profile score (Quintana). As introduced in more recent literature (Carter, Helms, & Juby, 2004; Carter, Pieterse, & Smith, 2008; Helms, 2007), an individual would not be labeled as being "in the disintegration status," but rather as "having a disintegration-dominant profile."

Using the WRIAS to understand college students' WRI profiles could also help college administrators and counselors better promote healthy environments and outcomes for

college students. Increased awareness and knowledge regarding WRI could ultimately result in culturally appropriate interventions tailored to the individual based on a WRI profile. For instance, professionals conducting student workshops on topics such as building a healthy racial climate and White racial identity exploration should examine the specific events occurring in the students' college environment that influence their White racial identity in order to empathize with their personal experiences and to promote positive change. In addition, the measurement model findings of this study imply that when assessing students' WRI profiles, professionals should not focus exclusively on the status with the highest score. For example, a student whose profile has autonomy as the highest score should not be assumed to have the most advanced racial ideology (Quintana, 2007); this student may also have a high score for reintegration status, which may result in maladaptive behaviors within the student's contextual environment.

SPS as a Predictor of WRI

With regard to the second research question, several of the hypothesized relationships between SPS and WRI were supported in this study. Foremost, NPO positively predicted disintegration status, and ICS positively predicted reintegration status. The finding that NPO positively predicts disintegration indicates that individuals who generally feel threatened and upset when confronted with problems and have low self-efficacy and negative outcome expectancies regarding their ability to solve problems are likely to feel anxious when provoked by racial dilemmas and avoid individuals of other racial groups. The significant relationship between NPO and disintegration supports and extends the findings of Neville et al. (1997) to a White college student sample. In their sample of Black college students, Neville et al. found that

higher endorsement of pro-Black/anti-White sentiments (immersion/emersion attitudes) was related to greater negative problem-solving appraisal. Disintegration status for the WRIAS and immersion/emersion status for the Black Racial Identity Attitude Scale (BRIAS; Helms, 1990b) are analogous in terms of the individual's ambivalent awareness of the implications of race for members of other racial groups and limited activities with individuals of other racial groups.

The finding that impulsivity/carelessness style is a significant predictor of the reintegration status indicates that individuals who demonstrate a problem-solving pattern that is impulsive, hurried, and incomplete (D'Zurilla & Maydeu-Olivares, 1995) are more likely to utilize selective perception and outgroup distortion when processing racial information, and idealize one's own racial group and denigrate individuals of other racial groups. Our finding, as hypothesized, that rational problem solving positively predicts autonomy indicates that individuals who demonstrate rational problem solving also are more likely to commit to their societally assigned racial group and practice flexible standards for perceiving other racial group members. They also tend to have the capacity to relinquish the privileges of racism and avoid life options that require participation in racial oppression.

Despite these significant relationships, 9 of the hypothesized relationships between SPS and WRI were not supported. It is possible that the SPS appraisals of rational problem solving, NPO, AS, and ICS are more salient for students in a college environment and influence WRI to a greater degree than does the SPS appraisal of positive problem orientation. Forty-seven percent of our sample were students in their freshman year, a crucial time for identity formation characterized by moratorium, that is, in the midst of a crisis with absent or vaguely defined commitments (Kroger, 1997;

Lounsbury, Huffstetler, Leong, & Gibson, 2005; Muuss, 1996). Previous research has indicated that social problem-solving abilities increase with age from adolescence to young adulthood (D'Zurilla, Maydeu-Olivares, & Kant, 1998). As such, it may be the case that the maladaptive problem solving appraisals of NPO, AS, and ICS are utilized more frequently by first-year college students when experiencing social problems and may influence WRI to a greater degree than other SPS appraisals. A sample including greater numbers of sophomores, juniors, and seniors may have resulted in a greater endorsement of positive problem orientation because of these students' increased resources within the college environment (e.g., social support, prior experience or knowledge of a particular problem). In turn, significance may have been found for the relationship between positive problem orientation and the autonomy status, constructs that share a number of theoretical and conceptual features.

Implications

The significant findings pertaining to the relationships between SPS appraisals and WRI statuses provide important theoretical and research implications. Although not all hypotheses were supported, the results of this study advance previous research by Neville and colleagues (1997) by suggesting a theoretical link between social problem-solving and racial identity for White college students. As Mercer and Cunningham (2003) proposed, WRI may reflect adaptive or maladaptive coping mechanisms that influence how the stress of social interactions with racially diverse individuals is resolved. In other words, the cognitive, emotional, and behavioral processes that govern the interpretation of racial information in an individual's interpersonal environment (Helms, 1996) may also be reflective of one's SPS appraisals. As such, it may be important to conceptualize the disintegration,

reintegration, and autonomy statuses (and corresponding information-processing strategies and schemas) by incorporating descriptions of the SPS appraisals of NPO, ICS, and RPO. Based on the results of this study, disintegration may be further conceptualized by including elements of NPO, as involving frustration, negative outcome expectancies, and doubt over one's capability when resolving intrapsychic experiences and interpersonal dynamics of racial oppression or domination. Reintegration with the incorporation of ICS may be further conceptualized as involving a narrow and careless attempt to define oneself and other racial groups. Autonomy, with the incorporation of RPS, may be further conceptualized as involving deliberate and systematic attempts to resolve intrapersonal and interracial conflicts.

The findings of this study provide practical implications for provosts for student affairs, directors of multicultural affairs, and counseling psychologists in college settings. As diversity on U.S. college campuses is increasing, it may be beneficial to develop WRI programs that incorporate SPS training for college students, thereby promoting adaptability to new social demands, healthy interactions with others, and the development of a flexible worldview of one's own racial group and that of others. These programs may include: workshops and outreach for incoming students at orientation; consultation, educational services, and training to student-employees involved in leadership roles; social justice and client advocacy services to White underprivileged populations; and group and individual counseling. Pertaining to individual counseling, if a White student presents with difficulties resolving intrapsychic and interpersonal struggles connected to race-related experiences, it might be important to assess the student's general problem orientation and problem-solving style via assessment tools such as the SPSI-R (D'Zurilla et al., 2002). The Cultural Assessment Interview Protocol

(CAIP; Grieger, 2007) allows for the culturally sensitive conceptualization of the respondent's problem-solving attitudes related to the helping process and racial identity development, while also building a therapeutic alliance (Ponterotto & Park-Taylor, 2007).

Because both SPS and WRI represent a person-environment framework within a sociocultural model, several college counseling interventions should be considered. Foremost, a counselor should assess students on a number of factors, including how the student perceives the interpersonal events, reacts intrapersonally to these events (feelings, thoughts, and behaviors), and attributes challenges to societal influences. Obtaining this information may be beneficial in conceptualizing the client's difficulties and developing a treatment plan. In addition, the person-environment dynamics that are central to the individual's racial self-conception may not be obvious or conscious (Helms, 1995). As such, a counselor should seek to help the client make connections between historical events containing SPS experiences and the client's racial self-concept or worldview (Trimble, 2007).

Despite its person-environment framework, according to Snyder (1999), the SPS research has taken more of an intrapersonal approach, neglecting the larger, interactive social context. Nonetheless, the construct of SPS is consistent with the counseling profession's focus on the important role of personal resources, environmental influences, and cultural contexts in people's lives (Lopez & Janowski, 2004). As such, it is important that counseling psychologists in college settings emphasize the importance of coping with race-related experiences in a collaborative nature with other individuals or students. For instance, strategies such as open dialogue and joint problem solving should be encouraged, particularly in outreach programs, workshops, and group counseling sessions where students

may practice these skills. As previously highlighted, counselors should not assume that high scores on statuses such as autonomy are necessarily adaptive for all individuals and instead should support students' adoption of racial identity schemas that match the sociocultural context (Quintana, 2007).

Limitations and Future Research Directions

Despite the important theoretical and practical implications, the current study has a number of limitations. Foremost, the findings are not generalizable to the White population beyond students attending private, predominantly White universities. Further, a larger sample size may have provided us with greater means to detect additional significant paths between SPS and WRI subscales. However, although our sample of 255 participants would not be considered large, it is within the sample size recommendations for models that do not incorporate latent constructs and have normally distributed data (Chou & Bentler, 1995) and exceeds the commonly recommended minimum sample size of 100 to 150 participants (Ding, Velicer, & Harlow, 1995). We also included the TLI as one of our fit indices, as this value is considered relatively independent of sample size (Schumacker & Lomax, 2004). Finally, it is noteworthy that the WRIAS subscale alpha reliabilities were low for the present sample, yet similar to the reliability levels of other samples (e.g., Helms & Carter, 1990). Researchers contend that low alpha reliabilities lend support to the use of alternative measures of WRI (e.g., Mercer & Cunningham, 2003). Nonetheless, Helms (2007) maintains low alpha reliabilities are the

result of the ipsative nature of the measure, and alternative statistics such as the theta coefficient (Ferketich, 1990) may be more appropriate statistics for measuring reliability of item responses for this multidimensional scale (Helms, Henze, Sass, & Mifsud, 2006). The value of theta calculated in the present study demonstrates greater reliability for the WRIAS as compared to the Cronbach's coefficient alpha.

Future research is needed to replicate and extend this study to provide further support for the theoretical relationship between SPS and WRI. It is recommended that researchers using Helms and Carter's (2002) WRIAS specify the model to include correlated measurement errors in order to achieve good fit. An extension of the study should examine the relationship between SPS and WRI among White students in other college settings, such as public universities and historically Black institutions in various regions of the United States, and to secondary education populations as well. It would also be of interest to qualitatively examine White college students' subjective experience of how their SPS abilities influence their WRI development. Further, the present study found support for a broad measure of SPS to influence WRI. It would be interesting to examine the relationship between more specific measures of SPS in certain settings (e.g., social interactions in interracial contexts) and WRI development in future research.

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