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## Identification with own and other racial groups as predictors of health risk cognitions in African American adolescents

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Identification with own and other racial groups  
as predictors of health risk cognitions in African American adolescents

by

Carrie L. Lautrup

A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Psychology

Program of Study Committee:  
Frederick X. Gibbons, Co-Major Professor  
Meg Gerrard, Co-Major Professor  
Frederick O. Lorenz

Iowa State University

Ames, Iowa, USA

2002

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Graduate College  
Iowa State University

This is to certify that the master's thesis of  
Carrie Lynne Lautrup  
has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy

Dedication:

To God be the glory—Father, Son, and Holy Spirit.

But for His grace and blessing, I am nothing.

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*For adolescents of color, the successful transition to healthy functioning in adulthood requires the achievement of a secure sense of their ethnic and/or racial identity, in the face of stereotypical images of their group, cultural differences and conflicts, and restricted opportunities. This process, which is typically neither salient nor important for White adolescents, is of central importance to American adolescents from non-European backgrounds. (Phinney & Kohatsu, 1997, p.420).*

## Introduction

The most obvious difference between the social experiences of White and Black Americans is that Blacks live as minorities in a culture that is often hostile to those who are different; Blacks deal with discrimination based on their ethnic background. The experiences of living as an ethnic minority—differences in SES, education on health risks, access to preventive care, and, in young Blacks, access to dangerous substances—have all been linked to racism, discrimination, and/or segregation. (Landrine, Klonoff, & Alcaraz, 1997; Williams, Lavizzo-Mourey, & Warren, 1994). Furthermore, evidence is emerging that behavioral health risk patterns are different for African American adolescents than they are for European American adolescents, regardless of socioeconomic status (Johnston, O'Malley, & Bachman, 2000). Some literature suggests that even the predictors of substance use are different for Black Americans compared to White Americans (Landrine, Richardson, Klonoff, & Flay, 1994; Leischow, Ranger-Moore, & Lawrence, 2000). All in all, research has found that in the area of health risk behaviors, African American youth are more influenced by familial and neighborhood factors, and less so by peer influence than are their Caucasian counterparts (Landrine et al., 1994; Wallace et al. 1999). By discovering the precursors to health risk behaviors, and the individual's reactions to the social world, interventions can be designed that target Black Americans in a relevant manner.

Unfortunately, as Landrine and Klonoff (1994) point out, research on African Americans remains strikingly atheoretical. There is a dearth in the literature on the processes linking the societal

and interpersonal factors of racism to individual health risk behavior. Another stumbling block in research in this area is that the typical plan of attack is from a sociological position, not a psychological one; that is, there is no evidence of research on the mediators between societal factors and individual health risk behavior. While changes in society are to be welcomed and promoted wholeheartedly, they are slow and unpredictable. Instead of working from the societal top down to the unit of the individual, the study presented here attempts to facilitate an understanding of the problem of ethnicity and health risk from the bottom up. That is, adolescents' identification with their ethnicity is examined in relation to health risk cognitions, the precursors of substance use.

#### The Family and Community Health Study (FACHS)

The Family and Community Health Study (FACHS) is a cross-disciplinary project, the primary goal of which is to examine the social and psychological variables that relate to the mental and physical health of African American families. Although the present study is cross-sectional, only concerned with one wave of data, the FACHS itself is in its third wave of data collection, and has followed adolescents, their parents, and their siblings for almost four years. The study intends to examine the development of risk attitudes and cognitions as outlined by Gibbons and Gerrard's prototype/willingness theory of adolescent health risk behavior. The FACHS also examines the impact of environmental contexts on risk attitudes and cognitions as well as on actual risk decisions. Earlier work within the context of FACHS has shown that the health risk cognitions described by the prototype/willingness theory are significant mediators of the effects of the social environment on adolescents' substance use (Gibbons et al., 2002). Earlier work has also revealed that experience with racial discrimination is a very influential predictor of health risk behaviors and cognitions (Gibbons et al., 2002). The theoretical model proposed in the present study includes acculturation attitudes, willingness and intention as mediators of the link between these social variables and health risk behaviors (see figure 1). The assumption is that the experience of African Americans introduces a variable, acculturation attitude, which is not present in the experience of Caucasian individuals.

Acculturation attitude is expected to affect perceptions of substance use images and intent and willingness to engage in risk behaviors.

In the vernacular, acculturation can be defined as “the modification of the culture of a group or individual as a result of contact with a different culture” (Lexico, 2002). The expression “acculturation attitude” is borrowed from John Berry’s work on *individuals’* reactions to cultural conflict, and is also called individual or psychological acculturation (Berry, 1994; Berry & Annis, 1974;). The reactions involve individuals’ relationships to their own ethnic group and to the group represented by the majority culture; strong, healthy relationships to both groups are proposed to be the most healthy, and to result in less negative affect and less health risk behavior. The idea probed by this study is common to research in many areas, most notably those of African American ethnic identity and of biculturalism in general. As is discussed below, the attitudes refer to the level of immersion in or identification with one’s own culture or ethnic group *and* the majority culture. Although there are several areas of research dealing with these attitudes, a search of the literature revealed no published articles relating acculturation as described above to substance use, in any population.

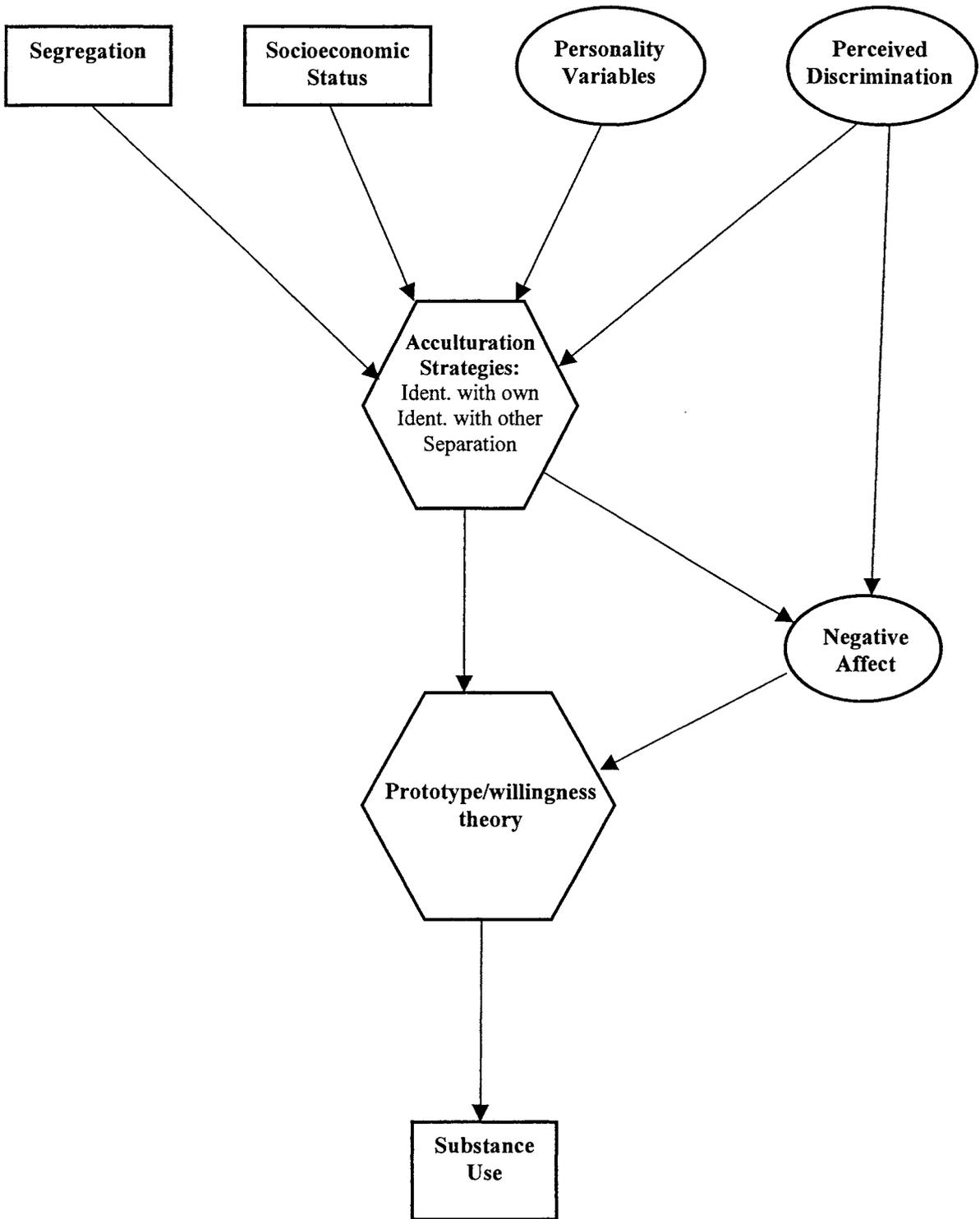


Figure 1: Conceptual model of the mediation proposed in the study.

## Acculturation as Coping

In the following sections, acculturation attitudes are operationalized as a specific category of coping strategies related to the stress (negative affect) of racial discrimination and segregation, as well as other psychological and social variables. The first section presents the theories of assimilation, ethnic/racial identification, and biculturalism that are to be used as a framework for the types of cognitive coping strategies embraced by individuals experiencing the stress of living as a minority in a less than welcoming majority culture. Next, the theories are placed into the context of health research in minority populations. In the model, acculturation is presented as a concept that will act as a protective mediator of the relations between racism, SES, and segregation on the one hand, and adolescent health risk cognitions and behavior on the other hand. The mediation of acculturation attitudes will occur through the effects these attitudes have on health risk images, behavioral intention, and behavioral willingness, the main variables in Gibbons and Gerrard's prototype/willingness theory.

For John Berry, the interaction between cultures elicits stress, labeled acculturative stress (1994). Although there are numerous psychological and behavioral changes associated with acculturation, those associated with acculturative stress are the most important for health. Acculturative stress is defined as "a reduction in health status (including psychological, somatic, and social aspects) of individuals who are undergoing acculturation, and for which there is evidence that these health phenomena are related systematically to acculturation phenomena" (Berry, Kim, Minde & Mok, 1987, p. 491). Acculturative stress has been operationalized using measures of anxiety and depression (Berry, 1998a). This study examines the effect of living as a minority on psychological and social aspects of health as evidenced by risk behaviors and vulnerability to risk. Psychological status is operationalized by a measure of negative affect (anxiety and depression). The effects of discrimination on the social aspects of health are examined using measures of acculturation attitudes and the prototype willingness model.

### Acculturation: Biculturalism, Ethnic Identity, or Assimilation?

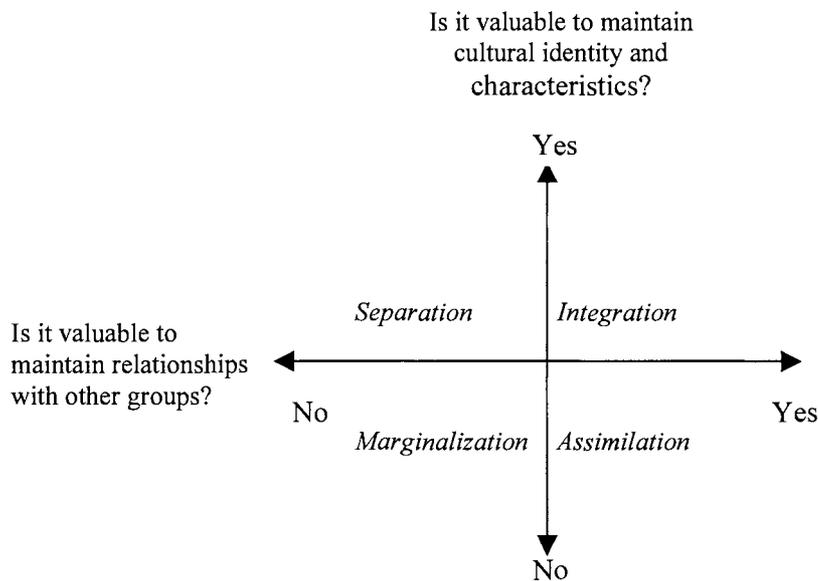
In the extant literature, acculturation is measured or inferred in many ways. Although Berry uses acculturation to describe any cultures interacting with each other, acculturation literature as such usually focuses on immigrant groups and their relations to the majority culture. Literature on biculturalism focuses more on the individual living as a minority in a majority culture, trying to balance the two parts of her identity. Racial identification literature is generally confined to the study of individual ethnic groups, especially African Americans, and focuses on the individual's relations to her own ethnic group.

Each of these bodies of literature emphasizes different aspects of the acculturation experience, often using the same terms in different ways. For example, the term acculturation is used in the literature to describe how immigrants, refugees and sojourners adjust psychologically to their new environments. The term is also used interchangeably with the word assimilation when describing how the same groups and individuals within the groups change their behavior, becoming continually more similar to the dominant culture. For this study, an attempt has been made to clarify the use of these terms. The term acculturation will be used generally, as defined above. The word assimilation refers to the bodies of research that view the process of acculturation on one dimension, with characteristics of the minority culture on one end of a continuum and characteristics of the dominant culture on the opposite end. Biculturalism is used to describe any view that considers the characteristics of or relation to the dominant culture vis-à-vis the minority culture on two different dimensions. The use of these terms is inspired by Berry's conceptualization of acculturation, which falls into the biculturalism category as described above. Below, Berry's work is presented first, followed by the two other approaches to acculturation found in the literature on minority health: assimilation and ethnic identity.

## Biculturalism

As mentioned above, Berry proposes two dimensions on which acculturation occurs: cultural maintenance and contact/participation with the majority group (see figure 2). On one dimension, the question at hand is: Is it valuable to maintain relationships with the larger society? On the second dimension, the issue is: Is it valuable to maintain one's cultural identity and characteristics? How the individual (or group) answers these questions is directly related to his acculturation strategy.

Figure 2: Berry's approach to biculturalism.



### *Acculturation strategies*

Although the assertion is that the questions listed above can be answered on a continuum, it is useful to define how individuals relate to the two dimensions as four categories of acculturative strategies (see figure 2): assimilation, integration, separation, and marginalization. Integration is expected to be the healthiest strategy, concurrent with the lowest substance use (Berry, 1998a). Marginalization is believed to be associated with the highest substance use, as it is considered to be the least healthy strategy. The definitions are as follows:

Integration: there is an interest in maintaining one's original culture while interacting with other cultures in a high degree.

Assimilation: the individual does not value her cultural identity and seeks a high degree of interaction with other cultures.

Separation: the individual values her own cultural identity but does not wish to interact with other cultures.

Marginalization: the individual neither values her cultural identity nor wishes to interact with other cultures.

### The Assimilation Literature

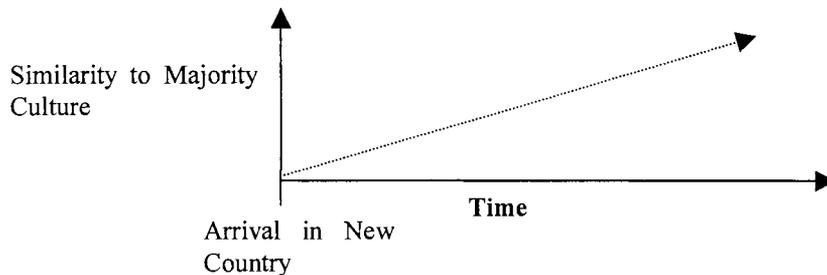
For Berry, assimilation is a specific strategy used in dealing with the bicultural situation. Conceptually, this strategy has been the focus of epidemiological work on minority health. In this literature, the classic view has been that there is one dimension on which acculturation occurs: the individual or the group becomes increasingly similar to the dominant culture, and the characteristics attached to the minority culture are given up in exchange. Here, then, the only question of interest is Berry's first: Is it valuable to maintain relationships with the larger society? There are two main approaches to answering this question (labeled acculturation in the literature): a brief description of each is provided below. Although only some aspects of these approaches are relevant for African Americans, their mention will help to clarify which processes the proposed study will target.

#### *Epidemiological approach*

In the most basic research, assimilation is equated with the number of years an immigrant minority population has lived within the majority culture. For example, research on acculturation and health within this paradigm has found that as the length of time a minority group has lived within the dominant culture increases, health patterns within the minority population are more and more similar to the patterns seen in the dominant population, for better or for worse—usually worse. For example, Adrian, Dini, MacGregor, and Stoduto (1995) found that the amount of difference in substance use

between the national average and the average of each ethnocultural group was related to the period of arrival and the length of time the group had been present in Canada, such that groups became increasingly similar to the national average as the time present increased. That is, time inevitably led to assimilation into the majority culture (see figure 3). This approach is not well-suited to the African American population, which has resided in the United States for as long as the dominant Caucasian culture has, yet still evidences major differences in health status variables. The next approach is more helpful, and also applies to indigenous minority cultures, such as Native Americans.

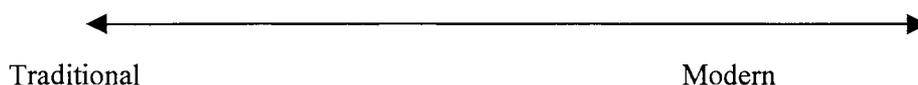
Figure 3: Epidemiological approach.



*Traditional/modern approach*

The traditional/modern approach to assimilation is more popular in research on the population targeted by the proposed study. Individuals are placed somewhere on a continuum between traditional—maintaining the culture of origin—and modern—abiding by the majority culture (Berry & Annis, 1974; Marmot & Syme, 1976, see figure 4). This interpretation has also been referred to as a one-dimensional approach, and is measured by demographic variables such as language spoken in the home, length of time living in the majority culture, and level of education within the majority culture (Burnam et al., 1987; Brook et al., 1997).

Figure 4: Traditional/Modern approach.



The approach has been used to evaluate assimilation in relation to African Americans, as well; a standardized scale used in much of the research is the African American Acculturation Scale (AAAS), developed by Landrine and Klonoff (1994, 1995). The scale asks individuals about their involvement in specific African American cultural practices, such as playing Bid Whist (a card game) and “doing” hair. The idea behind this approach is that assimilation is evidenced by the shedding of a cultural or ethnic (minority) set of behaviors, attitudes, and values; assimilated individuals are less traditional, and more modern. Research using this approach has generally shown that increased assimilation is associated with health patterns that are increasingly similar to the majority patterns (Burnam et al., 1987; May, 1982; Marmot & Syme, 1976). In the case of African Americans, the minority group has been shown to have more restrictive social norms and less positive images of substance users than the norms found in the majority Caucasian culture (Herd, 1993). According to the assimilation literature, the more an individual identifies with the majority culture, the more likely she is to become involved in health risk behaviors that are typical of the majority culture. Once again, the two views of assimilation listed here emphasize the minority individual’s relationship with the majority culture as a predictor of health risk.

### Ethnic Identity

Adolescence is the period in one’s life where the formation of identity becomes a major issue (Erickson, 1968). For African Americans, experience with racism focuses particular negative attention on their identity as a member of a specific cultural/ethnic group (Coates, 1990). So, in a bicultural context, the identity process is similar to Berry’s acculturation process, as Phinney and Kohatsu (1997) note in the statement quoted above. These authors stress that the development of an adolescent’s ethnic identity is closely related to both intergroup and intragroup pressures. As a matter of fact, Phinney (1990) writes that dealing with the theme of culture conflict between these two groups is part of the process of ethnic identity formation; nonetheless, the emphasis is on the

relationship of the individual to her own ethnic group: Is it valuable to maintain one's cultural identity and characteristics?

For Blacks, as discussed above, intergroup and intragroup pressures include the presence of racism, prejudice, and discrimination, factors in which this study is interested. Phinney and Kohatsu (1997) contend that the critical issue in relation to these pressures is the way in which the individual interprets and responds to the pressures. They suggest that the awareness of these pressures is an integral part of the development of a racial or ethnic identity. In turn, a strong racial identity defends the individual from the psychological stress of prejudice and discrimination, and it promotes and shapes the connections to other ethnic and racial groups in the adolescent's world. So, this view proposes that an individual's identification with her own ethnic group plays a role in how the individual interacts with the majority culture, a view that contradicts one early sector of the research, which assumed that being a part of two cultures is damaging (see for example Mann, 1958).

### Acculturation and Health

#### Biculturalism and Health

As a major figure in the literature on stress and coping points out (Lazarus, 1999), acculturation theory as proposed by Berry (1994) can provide a framework for the coping strategies to be developed within the context of the African American experience. Most research in this area focuses on stress. Whereas this study is more interested in the coping strategies used in dealing with the stress and the effect these strategies have on health behaviors, stress is an important factor related to the constructs proposed for this model. Research relating stress to the African American experience is of key importance in understanding the background for the current study. So, although little is known about how biculturalism, or acculturation level as operationalized by Berry, relates to health risk behaviors, studies have shown that different acculturation strategies are related to different levels of stress and other negative psychological outcomes (reviewed in Berry, 1998b). Berry and Annis

(1974) found that a low desire for positive relations with the majority culture is associated with a high acculturative stress, operationalized as anxiety and depression, psychosomatic complaints, and psychological stress. In his review, Berry found that the integration strategy—high levels of identification with both own and other ethnic groups—is predictive of better self-image, better self-esteem, and lower overall stress. Also, Berry and Sam (1996) found that assimilation and marginalization were both inversely related to global self-evaluation and directly related to depressive tendencies and psychological and somatic symptoms. Thus, it appears that the healthiest strategy for individuals in cultural conflict is the maintenance of a strong ethnic identity coupled with continued interaction with the dominant society. In fact, one study found that the level of susceptibility to drug use and abuse among Native Americans is lowest for individuals who could integrate traditional and modern social roles; the highest susceptibility is for individuals who showed tendencies similar to those described by Berry as marginalized, espousing allegiance neither to the dominant (modern) culture nor to the minority (traditional) culture (May, 1982). The two dimensions, maintenance of ethnic identity and interaction with the majority culture, have been linked to health in studies involving segregation and ethnic identity, concepts that parallel the factors involved in the acculturation construct.

#### Ethnic Identification and Health Risk

There are many studies that try to get to the bottom of the issues of ethnic identity, and most concentrate on individuals of African descent living in the United States. Research on adolescents' development of racial identity has produced some interesting information that is relevant to the study at hand; Phinney and Kohutsu's (1997) review of the literature will be used. First of all, some individuals reject their own ethnic roots and cling to the majority culture, an attitude conceptually similar to the assimilation idea expressed by Berry. These adolescents show poorer psychological adjustment overall, and they show more interest in and experimentation with alcohol (Carter, 1991). Encounters with prejudice, stereotypes, racism, or exposure to positive role models via education (e.g.

history class) or through personal experience are said to prompt adolescents to explore, examine, and perhaps reject existing views of their race. They often distance themselves from or reject White society and immerse themselves in involvement with their own ethnic culture, evidence of an attitude similar to the separation concept, as defined by Berry. The idea presented by Cross (1978), however, is more aggressive and more focused on separation as a distancing from the majority culture than Berry's description of separation.

Cross's work suggests a third dimension or strategy for dealing with the stress of acculturation, which can be described as a separationist or withdrawal attitude. The idea is not simply a disinterest or lack of interaction in other racial groups, but a conscious decision to avoid these groups. According to Cross, the process of distancing from the majority culture can be accompanied by "rage...perturbation, effrontery, high risk taking, a destructive mood in constant tension with dreams of revitalization" (p.17). As Cross indicates, this is a situation of high risk; without a strong social support network, many adolescents become disillusioned, and in turn withdraw from both their own group as well as the majority group, leading to a state similar to Berry's marginalized condition. Carter (1991) found an increased interest in and experimentation with drug use among adolescents in this situation of ethnic disconnectedness. In other words, when distancing from the majority is accompanied by a lack of identification with own ethnic group, adolescents are more likely to become substance users.

For those adolescents who don't stagnate in the identification situations listed above, the final destination of the development of a racial or ethnic identity is a strong, positive feeling about oneself as a member of the group. Individuals in this stage are able to actively engage in the majority society, drawing strength from their ethnic identity; this stage parallels Berry's strategy of integration. That is, the African American individual can have a high degree of participation and interest in the majority culture while simultaneously having a deep understanding of and identification with her own ethnic group. Awareness of the problems of racism, prejudice, and discrimination remains for adolescents

classified in this situation, but the anger and hatred of separationism do not; the individual has developed more adaptive means of coping with the stress, and is not inclined to separate herself from the majority culture.

### Ethnic Identification as Coping

In relation to ethnic identification as a coping strategy, several studies have confirmed that African Americans employ a number of different strategies to deal with the experiences of institutionalized and personal racism (see for example Feagin, 1991; Lalonde, Majumder, & Parris, 1995; Utsey et al., 2000). Individuals' differential cognitive reactions to racism predict cardiovascular reactivity and CHD, variables that are also linked to stress in other contexts. For example, Krieger and Sidney (1996) found that Black adults who report accepting racism as inevitable had higher blood pressure than those who challenged unfair treatment; that is, those who withdrew from the conflict were less healthy than those who engaged in it. So, separation and marginalization strategies would promote stress, whereas the acculturation strategy would reduce stress. In support of this idea, Dressler (1984) reports that perception of the discrimination event and the behavioral strategies for coping with the stress relate to hypertension.

Once again, the present study focuses on the processes of identification with versus alienation from own ethnic group and majority ethnic group as a specific category of coping strategies related to experiences with racism. Identification and alienation are processes consistently linked to adolescent development (Erickson, 1968). The literatures of racial identification, acculturation, and biculturalism, especially as experienced by African Americans, have similar themes (see LaFromboise, Coleman & Gerton, 1993), but they place emphasis on different aspects of identification processes. The present study attempts to bring order to the different areas of research through a single theoretical model. For the study, three factors have been drawn from the literature that are predicted to mediate the effect social factors have on health risk cognitions and subsequent

substance use: level of identification with own ethnic group, level of identification with other ethnic groups, and withdrawal or separationist attitudes.

### The Theoretical Model

The model proposed in this study links African American adolescents' experiences of racism and segregation to health risk cognitions and behavior through acculturation attitudes, otherwise referred to as ethnic identification. One further social variable (SES) and two personality variables (general social activity level and academic orientation) are also proposed as covariate predictors of racial identification (see figure 1). Racial identification is expected to predict health behaviors, a relation that is expected to be mediated by the health risk cognitions in the prototype willingness theory as developed by Gibbons and Gerrard (1995, 1997). The model has two parts. First of all, perceived racial discrimination, segregation, SES, academic orientation, and social activity level are presented as exogenous variables related to acculturation attitudes, as described above, and to negative affect. The second part of the model is the prototype/willingness theory. Below, the elements of the proposed model are described.

#### Predictors of Ethnic Identification

##### *Discrimination and negative affect*

As mentioned above, previous work with this sample has shown that experiences with racial discrimination predicted health risk cognitions and behaviors (Gibbons et al., 2002). The effect was mediated by negative affect. In the present study, identification processes are proposed as coping strategies, such that identification will mediate the effects of discrimination on negative affect. Identification with own racial group will reduce negative affect and will promote healthy risk cognitions and behaviors. Negative affect is also expected to be reduced by identification with other racial groups, but this type of identification is expected to promote less healthy risk cognitions and behaviors.

### *Segregation and SES*

As noted earlier, Berry states that some acculturative strategies are not under the control of the individual. In many circumstances, the strategies are imposed by the majority society. Specifically, the question of interaction with other cultures may be forced, such as is the case with segregation. Segregation is defined as “the policy or practice of separating people of different races, classes, or ethnic groups, as in schools, housing, and public or commercial facilities, especially as a form of discrimination” (Lexico, 2002). Segregation limits the interaction adolescents have with members of the majority culture, and will thus affect identification processes linking the individual to ethnic groups other than her own. Furthermore, segregation can affect health risk behaviors. Landrine and Klonoff (2000) have found that segregation contributes to smoking among Americans of African descent, even when controlling for income, gender, and perceptions of racial discrimination; high levels of segregation predict poor health behavior outcomes. Their study found that it is especially the level of segregation in childhood that predicts smoking. Policy changes aimed at preventing forced segregation have changed the nature of racial segregation, but the fact remains that a high percentage of African Americans still lives in neighborhoods that are segregated from Caucasians (King, 1996; Polednak, 1996); and the fact is that the level of segregation an adolescent is exposed to is outside the control of the adolescent. So, although a young person may ascribe to a strategy of acculturation in which interaction with the dominant culture is valued, it may be difficult for the individual to actually put the strategy into action. Therefore, segregation is included in the model as a factor that will inhibit identification with the majority culture as an acculturative strategy. Issues of socioeconomic status may confound the effects of segregation, so SES is included in the model as a covariate exogenous variable.

### *Academic orientation*

A third exogenous variable proposed to be important in the determination of identification strategies is academic orientation. Research has revealed that school achievement is considered by

many African American adolescents to be a sign of identification with White society, and is actively discouraged—“acting White” is the term used in the research literature (Fordam & Ogbu, 1986; Witherspoon, Speight, & Thomas, 1997; Ducille, 2001). Some Black adolescents are teased, ostracized, and even physically harmed by their peers for achievement in school, even though parents, teachers, and the majority culture relay the message that school achievement is desirable (Steinberg, Dornbusch & Brown, 1991). Since academic achievement and the orientation toward such achievement are met with these ambivalent pressures, it is included in the model as an individual difference variable with the potential of eliciting stress. Again, acculturation attitudes are presented as coping strategies used to deal with the stress of living within a bicultural context. Academic orientation is expected to predict identification with other ethnic groups and to be negatively correlated with separatist attitudes.

#### *Social activity*

When measuring identification with own and other racial groups, an individual personality variable of general level of involvement may cloud the relationships targeted in this study. That is, high scores on any of the measures, and especially on the combination of the measures may reflect a general tendency to be socially involved. Therefore, a measure of the adolescents’ involvement in extracurricular, social and religious activities was entered into the model as a covariate, in order to allow for better estimations of the effects of racial identification on substance use.

Ultimately, attitudes toward own and other ethnic groups are proposed to predict substance use that begins in adolescence. It is proposed that these attitudes contribute to the valence of health risk images. The Prototype/willingness theory of health risk behavior provides a basis for the proposal of these relationships.

#### The Prototype/Willingness Theory

The prototype/willingness theory builds on Fishbein and Ajzen’s Theory of Reasoned Action (TRA, Fishbein & Ajzen, 1975). In the TRA, norms and attitudes predict behavioral intention, which

is described as the only proximal antecedent to behavior. The TRA is perhaps the most popular theory of health behaviors. Although the theory has been very fruitful in describing many kinds of preventive health behaviors, it does fall short when explaining health risk behavior, especially in adolescents, because this behavior is often not intentional (Gibbons et al., 1998). The prototype willingness model adds a second proximal antecedent to behavior, called behavioral willingness. Behavioral willingness is predicted by health risk images, or prototypes.

### *Behavioral willingness*

There are two paths to health risk behavior in the prototype/willingness theory, the reasoned route and the social reaction route. Willingness is a level of openness to social or contextual factors—and reflects the reactive nature of risk behaviors. Health risk behaviors are behaviors that people don't necessarily intend to do (Gibbons et al., 1998). This is especially true of adolescents. Behavioral willingness is measured by presenting short scenarios of social situations where there are opportunities to engage in health risk behaviors. Participants rate how willing they are to participate in varying degrees of the behavior (e.g. drink one drink, drink enough to get drunk, etc.). Work with the prototype/willingness theory has consistently shown that behavioral willingness is an important predictor of health risk behaviors, including smoking, alcohol use, reckless driving, and sexual behaviors, and behavioral willingness predicts independently of behavioral intent (see Gibbons, Gerrard, & Lane, in press, for a review).

One of the major thrusts of the model is that the openness to social situations, as expressed in the willingness construct, is affected by the individual's image of the type of person who engages in the specific type of health risk behavior in question. Although the images are universally negative, adolescents with less negative images report a greater willingness to participate in the behavior (Gibbons, Gerrard, & Lane, in press; Gibbons & Gerrard, 1995, Gibbons, Gerrard, & Boney-McCoy, 1995).

### *Prototype*

The term prototype describes a collection of behavioral and dispositional traits used by individuals to classify others into categories. Health risk prototypes are images of the typical individual who engages in a specific health risk behavior. They are generally recognizable, and groups of individuals usually agree on the most distinct features of any prototypical example of a category. There may be one trait or a group of traits related to the prototype. Prototypes are loose cognitive constructs, and an individual exemplar does not have to match every trait in order to be classified into a category. An important feature of prototypes is their loose construction, which allows for individual variations. The variations are often a result of underlying motives related to the preservation of a positive self-image (Dunning, Perie, & Story, 1991). By including or excluding attributes of the self in the prototype or by changing its valence, individuals can draw closer to or distance themselves from particular images or groups. Because of the emphasis this study places on the social identification of Black adolescents with their own and the majority culture, the prototype/willingness theory is well suited to the examination of how attitudes toward ethnic groups in the end affect substance use.

As discussed above, epidemiological studies carried out within the assimilation literature have found that minority health patterns tend to become increasingly similar to the majority culture as the minority group becomes acculturated. Due to the fact that studies have shown that the African American culture has more inhibitory social norms relating to substance use than the majority American culture (Herd, 1993), high scores on identification with own ethnic group in the present study were expected to be associated with lower favorability scores on the prototype measures, while high scores on identification with other ethnic groups were expected to be associated with high favorability scores on the prototype measures. Berry has a different view. His model predicts that high levels of identification with both groups should lead to healthier lifestyles. However, Berry's

model has not produced any studies on substance use, whereas the epidemiological assimilation literature has; therefore, the prediction was based on the latter body of literature.

### Specific Hypotheses

1. The acculturation construct, composed of independent factors of identification with own and other ethnic groups, plus a measure of a separationist attitude, significantly contributes to the explanation of the relationship between substance use and segregation, SES, and perceived racial discrimination.
  - a. Identification with own ethnic group will act as a protective factor such that there is a direct relationship between the factors and healthy outcome variables: more negative prototypes and less willingness, intent, and use.
  - b. Conversely, the measure of identification with other ethnic groups is a contributing factor to substance use and vulnerability to use.
  - c. Separationist attitudes will not be associated with identification with own ethnic group, but will be negatively correlated with identification with other ethnic groups.
2. Acculturation strategies are coping mechanisms, and therefore predict negative affect. Negative affect, in turn, partially mediates the relation between these strategies and health risk cognitions and behaviors. Separation attitudes are associated with poor coping, and therefore more negative affect, whereas identification with own and with other racial groups are associated with less negative affect, evidence of effective coping.

### Overview

Structural equation modeling (SEM) was the primary method of data analysis used on the cross-sectional data set. First, the measurement model was tested and refined. Then, the proposed model was run to test the first three hypotheses, with activity level, SES, and segregation as control variables. When the paths of the SEM needed clarification, regression analyses were run.

## Method

### Sampling and Recruitment

Data from the Family and Community Health Study (FACHS) were used to examine the proposed model. FACHS is an ongoing project now in its third wave of data collection, aimed at examining resilience in African American families. This study used data from the second wave of interviews.

For the FACHS project, the participants' families were recruited from neighborhoods in Iowa and Georgia that varied on demographic characteristics such as racial composition and economic level. Of the families who were contacted by letter and by a follow-up telephone call, 72% completed the interviews, which took place in the participants' homes. Most of those who refused to participate cited time as the major issue—each interview took up to three hours, consisting of two visits with two interviewers. The data used in this study are taken from the second wave of collection, where a total of 779 participants were interviewed in their homes or near their homes (e.g. at a library or school) by African American interviewers. Most of the interviewers lived in the same communities as the participants they visited. The interview consisted of a computer-assisted personal interview (CAPI) and a structured psychiatric diagnostic assessment (DISC-R, Shaffer et al., 1993). The 723 participants included in the following analyses answered all of or most of the questions relative to the model and identified themselves as being Black, African American, or used another racial specification that clearly identified them as a part of the population of interest (e.g. “African American and Irish”; “African, Native American and Hispanic”). Of the 723 participants used in the present analyses, 46% were male (n=336) and 53% came from Georgia (n=380). Their mean age was 12.3 years. For more in-depth explanations of sampling strategy and recruitment, see Cutrona et al. (2000) or Wills, Gibbons, Gerrard, & Brody (2000).

## Measures

### *Perceived racial discrimination*

Adolescents' experiences of discrimination were assessed the Schedule of Racist Events (Landrine & Klonoff, 1996). The measure consists of 13 items that ask how many times in the past 12 months the participants have experienced institutional and interpersonal discrimination based on their race ( $\alpha=.90$ ). Some examples are "How many times has someone said something insulting to you just because you are African American?" and "How often have you encountered whites who were surprised that you as an African American person did something really well?" Answers were coded on a 4-point scale, where 1= "Never" and 4= "Several times." For the SEM, the 13 items were randomly parceled into three measurement variables. Means of the items were analyzed as the measurement variables acting as indicators of the perceived discrimination latent variable.

### *Segregation*

Neighborhood census data from 1998 were used to determine the level of segregation in the neighborhood in which each participant lived. Specifically, the number of African Americans was divided by the total population, and multiplied by 100 to calculate the percentage of Blacks in each neighborhood. In modeling, segregation was used as a manifest variable.

### *SES*

Parents' report of income and education were used to determine socioeconomic status. Scores on the two items were multiplied together in order to form an index. Missing data on measures were imputed<sup>1</sup>. SES was treated as a manifest variable.

### *Ethnic identification*

The measure of ethnic identification used in the study loads on three factors corresponding to the two types of identification outlined above, plus a measure extracting more negative separationist

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<sup>1</sup> About half of the participants did not respond on one of two items that inquired about income. Thus, about 1/4<sup>th</sup> of the SES data were imputed.

attitudes, or withdrawal. Seven items assess individuals' relationship with own ethnic group ( $\alpha=.71$ ), four items assessed their relationship with other ethnic groups ( $\alpha=.66$ ), and two bring out separationist attitudes ( $\alpha=.50$ ). Participants responded on a Likert-type scale, where a score of 1 corresponded to the response "strongly agree" and a score of 4 to the response "strongly disagree." The items are listed in table 1. Items were reverse coded for analyses. For the latent variables on identification with own and with other ethnic groups, items were randomly parceled into groups, and the scores in each parcel were combined by computing the mean; each parcel was a mean of between 1 and 4 individual items from the questionnaire.

#### *Negative affect*

The measure of negative affect was a combination of two indices measuring anxiety (12 items,  $\alpha=.69$ ) and depression (22 items,  $\alpha=.84$ ), for a total of 32 items ( $\alpha=.87$ ), taken from the DISC-R. In the model, the mean of the scores for each index were computed, and the two scores were used as measurement variables for the latent negative affect variable.

#### *Health risk images*

Favorability of the image of the typical substance user was computed ( $\alpha=.87$ ) using six items for users of each of three substances: smoking ( $\alpha=.74$ ), alcohol ( $\alpha=.75$ ), and drugs ( $\alpha=.76$ ), following the procedure described by Gibbons and Gerrard (1995). Participants were presented with a definition of a prototype and then rated adjectives on how well they describe the typical user of each of the three substances (6 items, e.g. popular, smart, childish). Items were scored on a Likert-type scale, where 1= "Not at all" and 4= "Very." The mean score of favorability for users of each substance was computed and used as a measurement variable for the latent prototype variable for modeling.

Table 1: Measures of ethnic/racial identification.

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Participants are asked to rate the amount that they agree or disagree with the following items  
(1=strongly agree, 4= strongly disagree)

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Identification with own ethnic group:

1. You are active in organizations and social groups made up mostly of African Americans.
  2. You are happy to be a member of your own ethnic group.
  3. You have a strong sense of belonging in your own ethnic group.
  4. You have a lot of pride in your own ethnic group.
  5. You participate in cultural practices of your ethnic group.
  6. You have a strong attachment to your own ethnic group.
  7. You feel good about your cultural/ethnic group
- 

Identification with other ethnic groups:

1. You like meeting and getting to know people from ethnic groups other than your own.
  2. You enjoy spending time with people from other ethnic groups.
  3. You are involved in activities with people from other ethnic groups.
  4. You enjoy being around people from other ethnic groups.
- 

Separationist Attitudes:

1. You sometimes feel it would be better if different ethnic groups didn't try to mix together.
2. You don't try to become friends with people from other ethnic groups.

### *Willingness*

Willingness was assessed by presenting participants with scenarios of possible situations where using illicit substances would be possible (Gibbons & Gerrard, 1995). Participants rated their willingness to engage in various degrees of the behavior. For example, “Suppose your friends are smoking and one of them offers you a cigarette. How willing would you be to smoke more than one?” Participants responded on a 3 point scale, where 1= “Not at all willing” and 3= “Extremely willing.” Three items assessed willingness for each of the three substances, for a total of 9 items assessing this construct ( $\alpha=.74$ ). The mean of the score on the willingness items was used as the manifest willingness variable for structural equation modeling.

### *Behavioral intention and expectation*

The second route to health risk behavior described in the prototype/willingness theory is the reasoned action (planned) route, which proceeds through behavioral intention. As is common in the literature on socially undesirable behavior such as health risk behavior, behavioral intention was measured using items assessing both true intent and behavioral expectation (Warshaw & Davis, 1985). For example, “How much alcohol do you plan to drink in the next year?” assessed true intention, and “How much alcohol are you likely to drink in the next year?” assessed expectation. Although the measures were presented on different scales (of 3, 4, and 5 points), they were collapsed so that 1= “Do not;” 2= “Probably won’t,” “Probably will,” or “Don’t know;” and 3= “Plan to”. Once again, the scores on each item were combined with the others to form a mean score that served as a manifest variable in the model ( $\alpha=.74$ ).

### *Substance use*

The variable used to measure substance use for each adolescent is a composite measure based on the mean of responses to questions probing alcohol, cigarette, and drug use in the past year and ever. One item in the interview probed alcohol use in the past 12 months. The DISC-R included past

year and lifetime measures of alcohol, tobacco, and drug use. Seven of these items were used: 3 alcohol, 2 smoking, and 2 marijuana. Substance use was treated as a manifest variable ( $\alpha=.83$ ).

## Results

### Measurement Model

#### *Model fit*

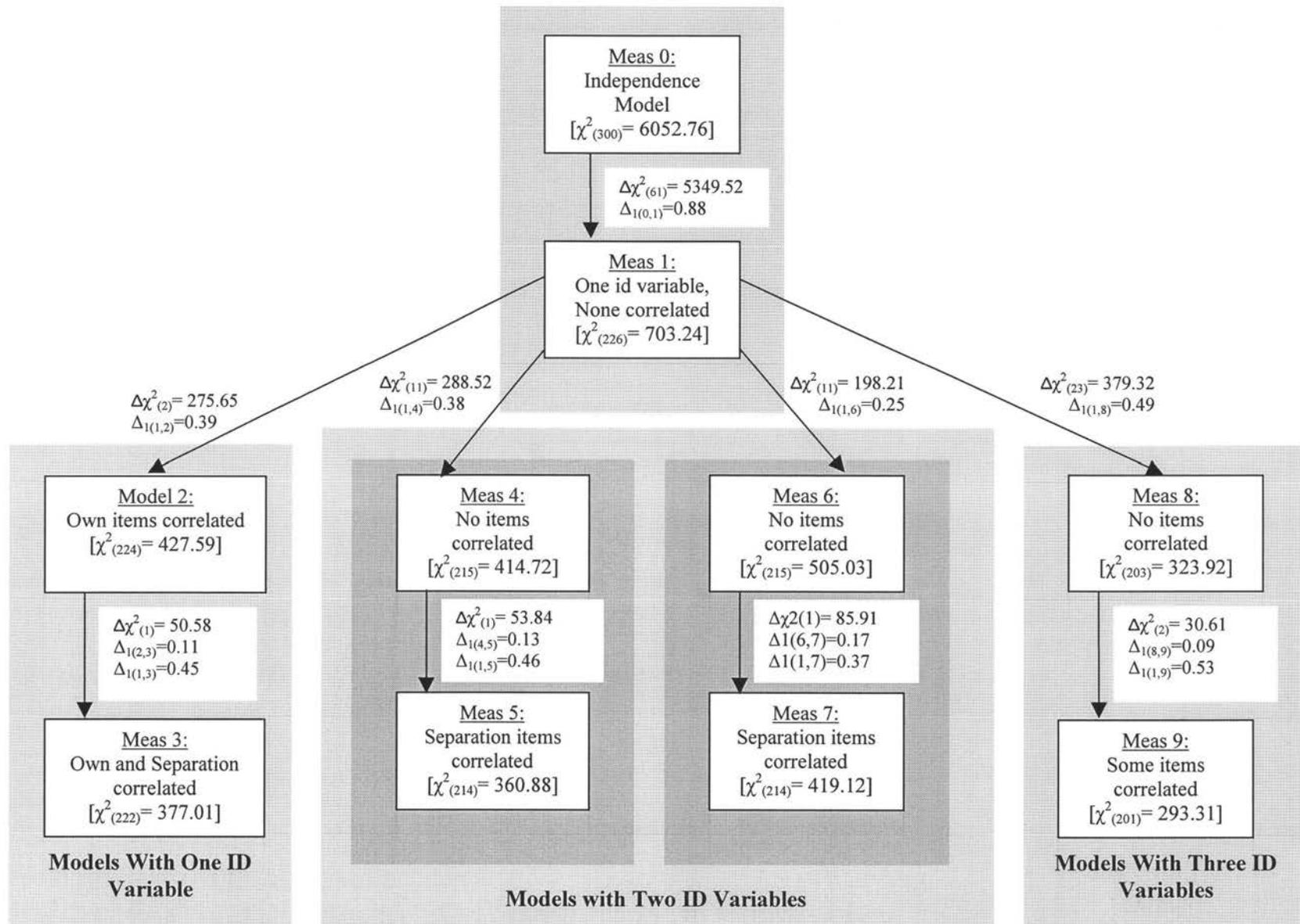
The correlations, means and standard deviations of the manifest variables are shown in the appendix. The identification measure was created for the FACHS study, and has not been tested on other groups. Using the covariance matrix of the data from this study, a series of measurement models were run using the computer program Lisrel 8.30 (Joreskog & Sorbom, 1996), in an effort to determine if three factors were, indeed, the best configuration for the racial identification measure. Figure 5 shows a diagram of the results of these rounds of modeling.

The first measurement model (Meas 1) treated all of the identification items as indicators of one latent variable ( $\chi^2_{(170)}= 595.87$ ,  $NFI_{(0,1)}=0.88$ ). The normed fit index computed by Lisrel showed that this measurement model reduced the chi-square of the model of complete independence by 88%, a less than perfect fit for the data. In order to examine how the items measuring identification attitudes fit together, modification indices were consulted, and new models were run as the indices suggested, providing the modification made sense theoretically. Each time a model was run, the path corresponding to the Lagrangian multiplier with the largest value ( $>10$ ) was added to the measurement model, and the model was examined for fit and whether the variances remained positive. Using the output from these procedures, a normed fit index (NFI) was computed to compare the nested models in pairs, as proposed by Bentler and Bonett (described in Bollen, 1989). The first measurement model (Meas 1) was used as the baseline model for the computation of the normed fit indices. Three rounds of models were run: models with one identification variable (overall racial



Figure 5: Results of measurement model series.

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identification), models with two identification variables (identification with own vs. identification with other), and models with three identification variables (own vs. other plus withdrawal/separation). In the round of models with one identification variable, a first set revealed that the three variables that could be linked to the identification with own racial group should be correlated, and the last model in this set (Meas 2) resulted in a better fit than the first measurement model ( $\chi^2_{(167)} = 311.52$ ,  $NFI_{(1,2)} = 0.47$ ), with a 47% reduction in chi-square. A second set of models in this round showed that the items for separation attitudes should be correlated, and resulted in a further reduction in the chi-square ( $\chi^2_{(166)} = 258.12$ ,  $NFI_{(2,3)} = 0.17$ ,  $NFI_{(0,3)} = 0.95$ ).

In the second round of modeling, withdrawal attitude was combined with identification with own group and with other groups to see if they should be combined with one of these two major identification measures for a better fit (Meas 4 through Meas 7). Compared to the first measurement model, the results did not produce a better fit (see figure 5). The final round treated the three identification factors separately. The first of these models (Meas 8) produced a better fit than the first measurement model ( $\chi^2_{(149)} = 223.90$ ,  $NFI_{(1,8)} = 0.57$ ), a 57% reduction in chi-square. According to the modification indices, two of the error terms should be correlated, so the model was adjusted ( $\chi^2_{(147)} = 194.17$ ,  $NFI_{(8,9)} = 0.14$ ). This final model produced a total 96% reduction in chi-square as compared to the independence model ( $NFI_{(0,9)} = 0.96$ ), and was used as the basis for the structural model.

### *Factor loadings*

For the most part, the factor loadings in the model were sound, with most coefficients at a value above 0.80 (see table 2). The exceptions, however, were the identification variable coefficients, which ranged from 0.43 to 0.76. This would indicate that these variables were not capturing the essence of the latent construct, and that the estimates were influenced by a significant amount of error. This is unfortunate, since they were the variables that were most interesting in relation to theory.

Table 2: Factor Loadings on Latent Variables (Lambda-Y Coefficients)

	Academic Orientation	Perceived Discrimination	Negative Affect	Identification with Own	Identification with Other	Separation Attitude	User Prototype
3 AcadOr1	0.75						
4 AcadOr2	0.87						
5 AcadOr3	0.74						
7 PerDisc1		0.89					
8 PerDisc2		0.84					
9 PerDisc3		0.89					
10 Depr			0.86				
11 Anxty			0.75				
12 IdOwn1				0.63			
13 IdOwn2				0.63			
14 IdOwn3				0.71			
15 IdOth1					0.67		
16 IdOth2					0.54		
17 IdOth3					0.60		
18 SepAt1						0.44	
19 SepAt2						0.75	
20 SmokProt							0.86
21 AlcProt							0.89
22 DrugProt							0.80

## Structural Model

### *Model fit*

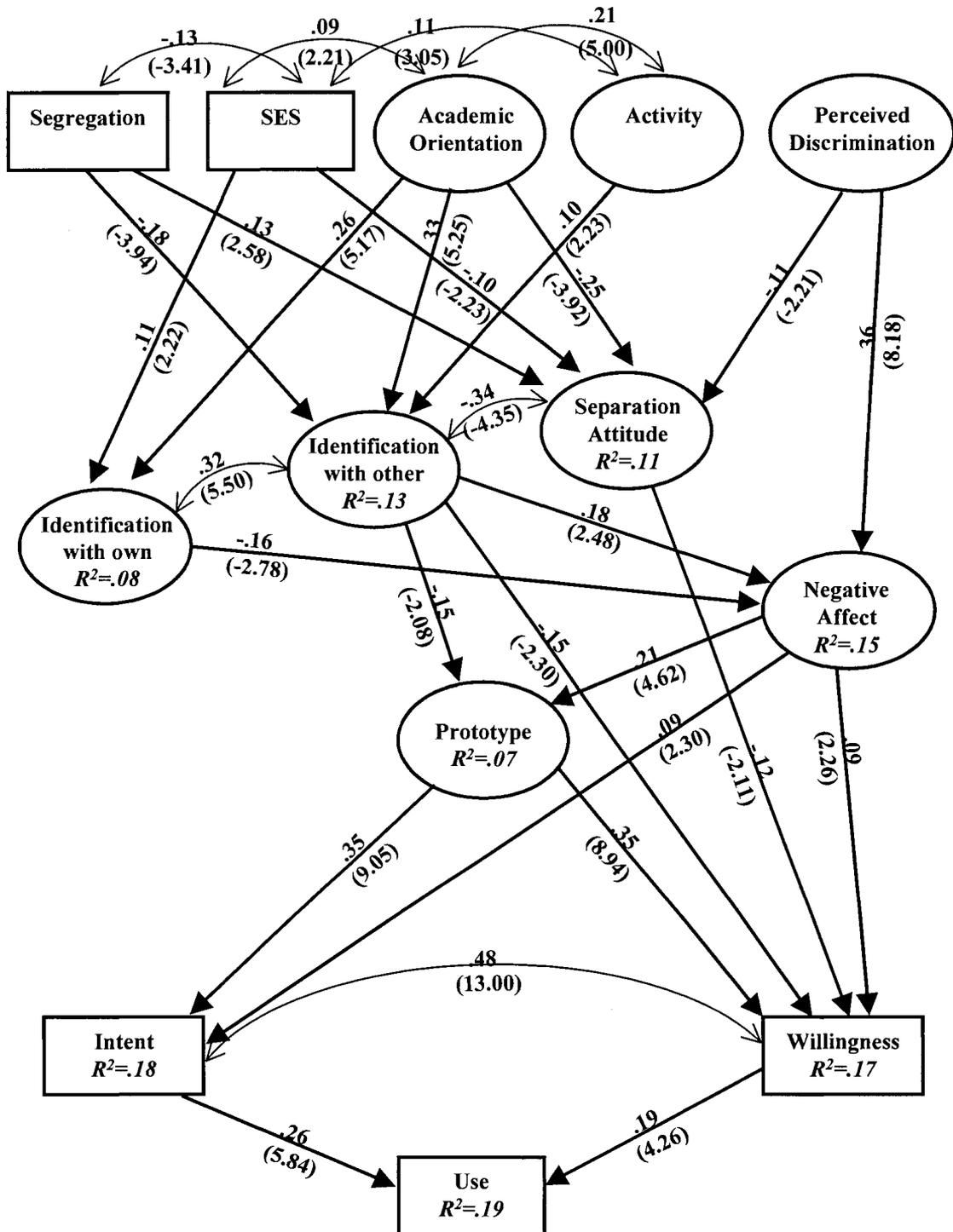
The model fit the data relatively well, especially considering the limitations of the measurement model. Results of the analyses are displayed in figure 6 and in table 3. Although the chi-squared statistic was high ( $\chi^2_{(230)} = 353.56$ ), it is sensitive to sample size. Hoelter's Critical N, however, is larger than 200 (CN=578.53), indicating adequate fit. The Goodness of Fit Index (GFI=0.96), which neutralizes the effect of sample size, and Adjusted Goodness of Fit Index (AGFI=0.95), which neutralizes the complexity of the model, are similar, indicating that there aren't too many parameters in the model. Both of the values are within the parameter of the generally accepted critical value of 0.95. Furthermore, the Non-Normed Fit Index, which has the ability to detect models that exclude interesting variables, is well above the critical value of 0.90 (NNFI=0.94). Finally, the Root Mean Square Error of Approximation is below the critical .05 level (RMSEA=0.03). The model was compared to a model that eliminated the paths to and from the identification variables. Using the normed fit index as described above, results indicated that the mediation of the identification variables improved the model fit by 25% ( $\Delta\chi^2_{(3)} = 126.10$ ,  $NFI_{(10,11)} = .25$ ).

### *Correlations between identification measures*

In the model, the identification measures were allowed to correlate with each other. The strongest relationship between the latent variables was between identification with other and separationist attitude ( $\Psi = -.34$ ,  $t = -4.35$ ), followed by identification with other and with own ethnic groups ( $\Psi = .32$ ,  $t = 5.50$ ). The fact that the magnitude of the correlation between identification with other ethnic groups and separation attitude is not noticeably greater than the magnitude of the correlation between the former construct and identification with own ethnic group reiterates the results of factor analysis and the measurement model, which presented separation attitude as a third construct. In addition, identification with own ethnic group was not related to withdrawal ( $\Psi = .01$ ,  $t = 0.19$ ), lending further support to the use of this attitude as a separate construct in the model.



Figure 6: Structural model.



n=723  $\chi^2_{(230)} = 353.56$  CN=578.53 GFI=0.96 AGFI=0.95 NNFI=0.94 RMSEA=0.03

Insignificant paths have been deleted from the figure. See table 3 for all estimates and t values

Table 3: Path estimates, correlations and T values for the SEM.

Outcome Variables:	1	2	3	4	5	6	7	8	9	10	11	12
1. Segregation												
2. SES	-0.13 (-3.41)											
3. Academic Orientation	0.03 (0.71)	0.09 (2.21)										
4. Activity Level	0.05 (1.20)	0.11 (3.05)	0.21 (5.00)									
5. Perceived Discrimination	-0.06 (-1.66)	0.01 (0.23)	-0.06 (-1.44)	0.07 (1.73)								
6. Identification Own	0.02 (0.57)	0.11 (2.22)	0.26 (5.17)	-0.02 (-0.39)	0.02 (0.46)							
7. Identification Other	-0.18 (-3.94)	0.04 (0.78)	0.33 (5.25)	0.10 (2.23)	-0.01 (-0.29)	0.32 (5.50)						
8. Separation Attitudes	0.13 (2.58)	-0.10 (-2.23)	-0.25 (-3.92)		-0.11 (-2.21)	0.07 (1.24)	-0.34 (-4.35)					
9. Negative Affect					0.36 (8.18)	-0.16 (-2.78)	0.18 (2.48)	0.06 (0.91)				
10. Prototype						0.01 (0.10)	-0.15 (-2.08)	0.05 (0.78)	0.21 (4.62)			
11. Behavioral Willingness						0.03 (0.51)	-0.15 (-2.30)	-0.12 (-2.11)	0.09 (2.26)	0.35 (8.94)		
12. Behavioral Expectation/ Intention						-0.08 (-1.59)	-0.12 (-1.86)	-0.05 (-0.92)	0.09 (2.30)	0.35 (9.05)	0.48 (13.00)	
13. Substance Use								0.15 (3.69)	0.11 (2.88)		0.19 (4.26)	0.26 (5.84)

*n*=723.

*Bold values indicate values associated with correlations ( $\Psi$ ). T-values are indicated in parentheses.*

### *Predictors of racial identification*

As anticipated, segregation had a negative effect on identification with other racial groups ( $\beta=-.18$ ,  $t=-3.94$ ). SES predicted both identification with own ethnic group ( $\beta=.11$ ,  $t=2.22$ ) and separation ( $\beta=-.10$ ,  $t=-2.23$ ), positively for the former but negatively for the latter. That is, the more educated adolescents' parents were, and the higher the families' incomes, the more the adolescents identified with their own group and the less they tended to avoid other groups, even when controlling for general social activity level. As predicted, the level of social activity predicted identification with other racial groups ( $\beta=.10$ ,  $t=2.23$ ), and not the other two identification variables. Perceived racial discrimination, however, did not predict racial identification as expected. As a matter of fact, the only effect this variable had in the model was in discouraging separationism ( $\beta=-.11$ ,  $t=-2.21$ ) and promoting negative affect ( $\beta=.36$ ,  $t=8.18$ ). Negative affect further corresponded to positive perceptions of the substance user prototype ( $\beta=.21$ ,  $t=4.62$ ), behavioral willingness ( $\beta=.09$ ,  $t=2.30$ ), and behavioral intention ( $\beta=.09$ ,  $t=2.26$ ).

### *Academic orientation and ethnic identification*

Academic orientation was the most consistent predictor of ethnic identification. It predicted all three identification variables, identification with own racial group ( $\beta=.26$ ,  $t=5.17$ ) and with other racial groups directly ( $\beta=.33$ ,  $t=5.25$ ), and separation attitudes inversely ( $\beta=-.25$ ,  $t=-3.92$ ). Indeed, if academic orientation is left out of the model, the amount of explained variance in the identification variables ( $R^2$ ) falls to 5% or below, compared to the present levels of 8% to 13%.

### *Identification with other racial groups*

In the structural model, identification with other racial groups proved to be related to the prototype/willingness theory. However, the identification was in the opposite direction of what was expected. First of all, identification with other racial groups was inversely related to prototypes ( $\beta=-.15$ ,  $t=-2.08$ ), such that high identification with other racial groups was associated with more negative prototypes. The direct path between identification with other groups and willingness was also

negative ( $\beta=-.15$ ,  $t=-2.30$ ). Identification with other groups was directly related to negative affect, as well ( $\beta=.18$ ,  $t=2.48$ ), which further predicted components of the prototype/willingness theory, but in the opposite direction as the identification construct itself. This relation to negative affect diminished or cancelled out some of the total effect of identification with other racial groups on prototype. Thus, in the model, the total effects of identification with other ethnic groups on the outcome variables were as follows: prototype,  $-.12$  ( $t=-1.78$ ); willingness,  $-.18$  ( $t=-2.70$ ); intent  $-.15$  ( $t=-2.30$ ); substance use,  $-.08$  ( $t=-2.64$ ).

In addition to the total effects, Lisrel 8.30 also calculates the indirect effects in a model and the t-values associated with the effect coefficients (see table 4). For this model, tests of the indirect effects showed that the relation between identification with other ethnic groups and prototype was significantly mediated by negative affect ( $\beta=.04$ ,  $t=2.16$ ). That is, identification predicts negative affect ( $\beta=.18$ ,  $t=2.48$ ), and negative affect further predicts prototype ( $\beta=.21$ ,  $t=4.62$ ). This indirect effect was in the opposite direction than the direct effect, accounting for the reduced total effect of identification with other racial groups on prototype.

Table 4: Total and indirect effects of identification variables on outcome variables.

	<u>Indirect Effects</u>			<u>Total Effects</u>		
	Ident. with Own	Ident. with Other	Separation Attitude	Ident. with Own	Ident. with Other	Separation Attitude
Prototype	-0.04 (-2.38)	0.04 (2.16)	0.01 (0.90)	-0.03 (-0.05)	-0.11 (-1.54)	0.06 (0.97)
Willingness	-0.03 (-1.13)	-0.02 (-0.76)	0.03 (1.11)	0.00 (0.01)	-0.17 (-2.51)	-0.09 (-1.55)
Intent	-0.03 (-1.14)	-0.06 (-0.76)	0.03 (1.12)	-0.11 (-1.98)	-0.14 (-2.09)	-0.02 (-.04)
Use	-0.05 (-1.84)	-0.05 (-1.55)	-0.02 (-0.64)	-0.05 (-1.84)	-0.05 (-1.55)	-0.02 (-0.64)

*Values in parentheses indicate T-values.*

A shortcoming of Lisrel 8.30 is that it does not isolate the effects of individual mediation paths when there are multiple mediating variables in a model. Therefore, the effects tables produced

by the computer program were supplemented by hierarchical regression analyses and the Sobel procedure (Kenny, Kashy, & Bolger, 1998) in order to further track mediation. Using these methods to supplement the SEM, it was determined that identification with other groups predicted behavioral willingness ( $\beta=-.12$ ,  $t=-3.00$ ), but that negative affect did not mediate this relationship—entering negative affect into the regression model did not reduce the effect of identification on willingness, a requirement for determining mediation. The mediation by prototype favorability was statistically significant ( $z=-4.88$ ,  $p<.001$ ): identification with other predicted prototype ( $\beta=-.15$ ,  $t=-2.08$ ), which further predicted willingness ( $\beta=.35$ ,  $t=8.94$ ). That is, the more an adolescent identified with other racial groups, the less favorable the prototype and the more identification, and the less favorable the prototype, the less willingness the adolescent indicated. Thus, the effect of identification with other ethnic groups on willingness was partially direct and partially mediated through prototype, but not through negative affect.

#### *Identification with own racial group*

Contrary to the hypothesis, identification with own racial group was not directly related to the prototype/willingness theory in the SEM. Only negative affect was related to this identification measure ( $\beta=-.15$ ,  $t=-2.58$ ), mediating the effect identification with own had on elements of the prototype/willingness model. As the effect tables showed, identification with own racial group had an indirect effect on prototype through negative affect ( $\beta=-.04$ ,  $t=-2.38$ ): identification with own predicted less negative affect ( $\beta=-.16$ ,  $t=-2.78$ ), and negative affect predicted more positive user images ( $\beta=.21$ ,  $t=4.62$ ), so that in the end, identification with own predicted less favorable user images.

#### *Separation attitudes*

Although Berry does not comment on withdrawal attitudes as a separate dimension, the ethnic identity development work of Cross and the stress and coping with racism literature do. In the measurement model of the present study, the two items reflecting an separationist attitude from the

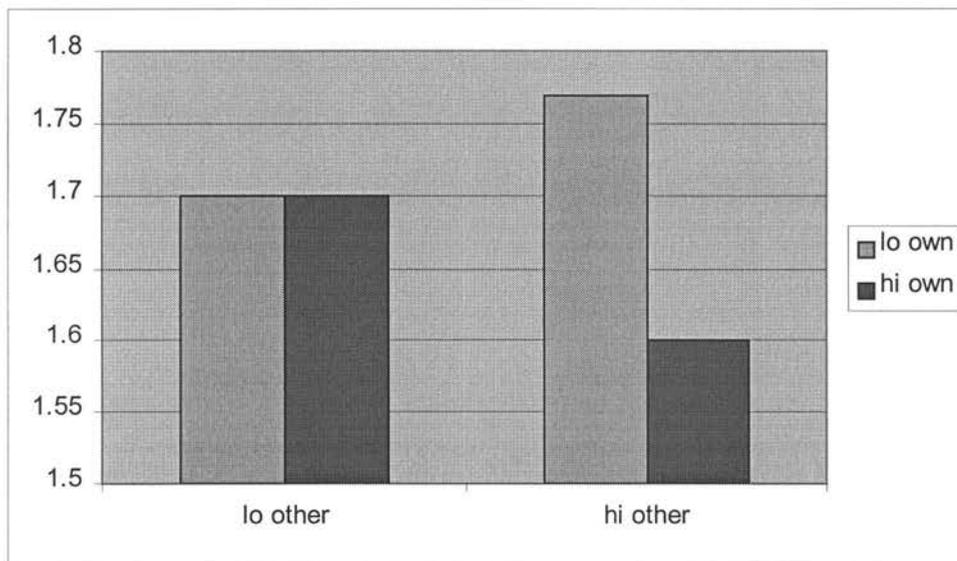
majority culture were shown to be a separate construct relating social factors to the precursors of substance use, and were therefore treated separately. In the structural model, this item did have an interesting effect. Even though the items were worded in a negative, hostile tone, the construct was not related to negative affect ( $\beta=.04$ ,  $t=0.63$ ). Since coping is a strategy employed to reduce stress, measured in this study by the measure of negative affect, the separation attitude cannot be considered to be a coping strategy. The only outcome variable predicted by the separation attitude was behavioral willingness ( $\beta=-.14$ ,  $t=-2.57$ ), such that wanting to stay away from other ethnic groups was a protective factor in relation to openness to trying illicit substances.

#### Acculturation Attitudes

The above analyses have isolated the individual effects of different types of identification on predictors of substance use according to the prototype/willingness theory. Conceptually, Berry combines the identification variables into specific strategies, and presents them in a diagram as depicted in figure 3. In order to test the specific hypotheses Berry's model presents—that the healthiest strategy is integration, the least healthy is marginalization, and separation and assimilation fall in between—participants were divided into four groups based on mean splits on the two main identification measures. ANOVAs were run in a 2(high vs. low identification with own) X 2(high vs. low identification with other) design on all of the elements in the prototype/willingness theory: risk prototype, behavioral willingness, behavioral intention, and use. Analyses were also run in a 2 X 2 X 2 with separation attitudes entered as a third dimension. On all measures, the main effects of the three independent variables were similar to the results above, although the analyses aren't as powerful as the SEM and they don't control for as many relations as the SEM does. Nonetheless, one of the analyses produced an interaction effect for identification with other and identification with own that partially supports the hypotheses based on Berry's work ( $F_{(1,715)}=4.22$ ,  $p<.05$ , see figure 7). For prototype images, the integration group had the least positive images ( $n=259$ ,  $M=1.60$ ). Simple contrasts showed that the integration group had scores that were significantly lower on the prototype

measure than the marginalization ( $t_{(723)}=2.07$ ,  $p<.02$ ), separation ( $t_{(723)}=2.09$ ,  $p<.02$ ), and assimilation groups ( $t_{(723)}=3.12$ ,  $p<.001$ ). The SEM also predicted this relation: both identification with own racial group and identification with other racial group predicted prototype in a negative direction, identification with own mediated through negative affect. In the ANOVA, the most positive images were held by those in the assimilation group ( $n=118$ ,  $M=1.77$ ), but not significantly different from the images reported by the separation and marginalization groups ( $n=175$ ,  $M=1.70$ ;  $n=171$ ,  $M=1.70$ ; simple contrasts:  $t_{(723)}=1.19$ ,  $p>.05$ ). The ANOVA shows that the combination of high identification with own racial group and high identification with other racial groups has a healthy effect on health risk cognitions, reducing the attractiveness of the substance user image.

Figure 7: Prototype as a function of identification with own and other racial group.



#### *Product term model*

Perhaps a more productive way of capturing the principles proposed by Berry is to combine the group identification measures into one variable such that high identification on both dimensions corresponds to a high score, and is conceptually similar to the integration strategy. Low identification,

or a marginalization strategy, corresponds to a low score. In order to examine this possibility, two mean scores were computed using all of the items on each of the identification with own and with other racial groups factors. These two scores were then multiplied together in order to form a new manifest variable, which replaced the original identification variables in the model. The purpose of creating this variable was to make it possible to measure how a high (or low) level on both identification dimensions affects the outcome variables in the model. So, this model is not directly comparable to the original model statistically, but it offers a different measure of the relations proposed by Berry.

The results of this model are shown in figure 8 and table 5. Once again, this SEM is not statistically comparable to the original SEM, but there are some conceptual comparisons that can be made. Although the amounts of variance explained in the outcome variables ( $R^2$ ) were slightly reduced by the product term SEM, as compared to the first SEM, the product term SEM produced a good fit, and it complimented the original model well. In the new model, high identification predicted a lower degree of intention to use substances ( $\beta=-.13$ ,  $t=-3.37$ ) and less favorable prototypes ( $\beta=-.09$ ,  $t=-2.20$ ) as compared to low identification. That is, integration strategies correspond to less positive risk cognitions, whereas marginalization strategies correspond to more positive risk cognitions.

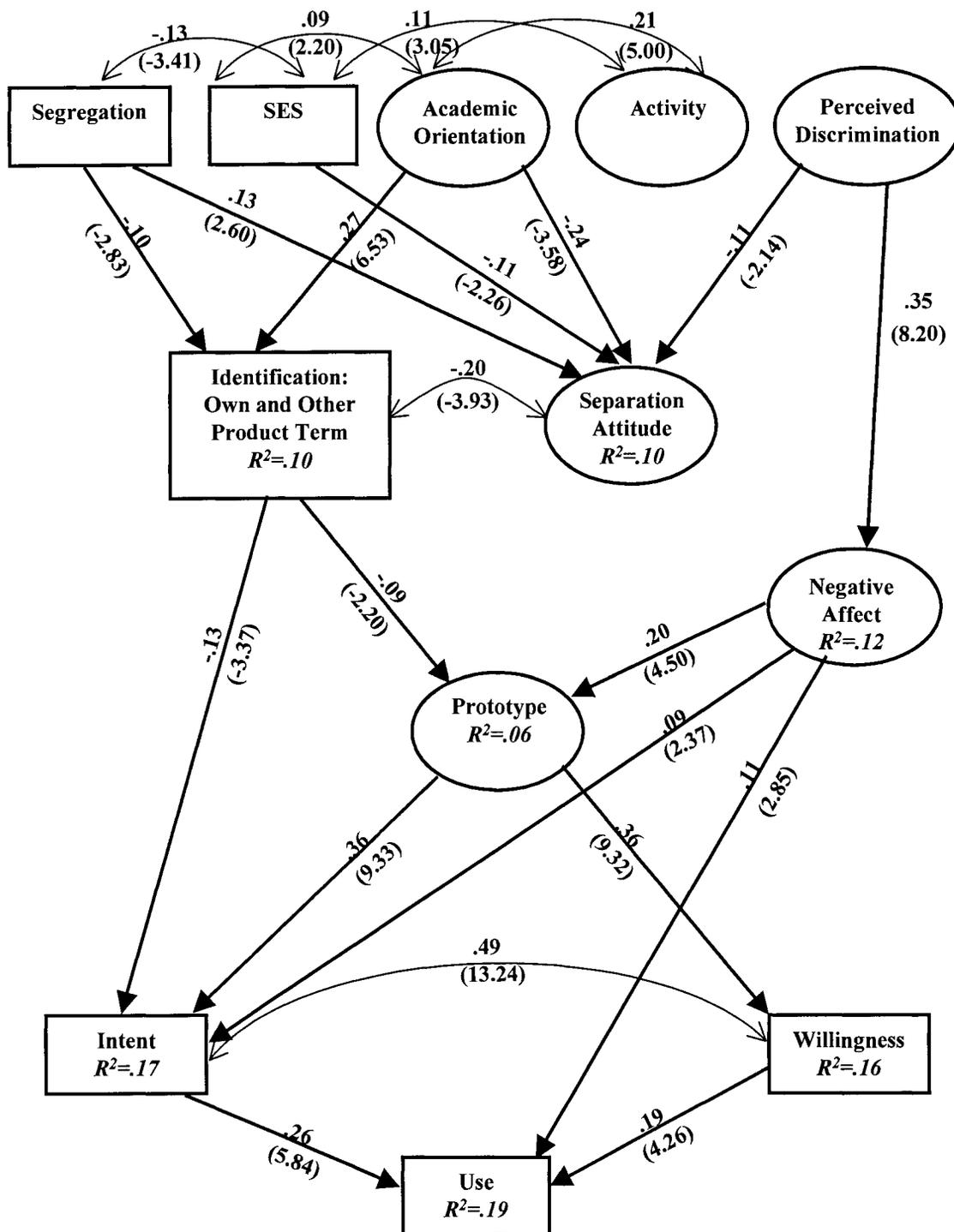
In this model, healthy identification did not predict negative affect, revealing that the conceptualization does not work well in predicting identification as a coping strategy. As a matter of fact, in this model, negative affect is only predicted by perceived discrimination. Once again, this product term SEM cannot be directly compared to the original SEM, but a conceptual comparison can be made. By combining the two dimensions of identification, their individual effects on negative affect apparently cancel each other out. Although it is more parsimonious, this model does not capture some nuances of the first SEM related to identification as a coping strategy. The differing effects

identification had on negative affect in the original model are hard to interpret, however, and so the product term model may be the best model theoretically.

An important aspect of the product term model is that it reiterates the importance of including separation attitude in the theoretical model. In the SEM, separation attitude is negatively correlated with identification, and is predicted by segregation ( $\beta=.13$ ,  $t=2.60$ ), SES ( $\beta=-.11$ ,  $t=-2.26$ ), academic orientation ( $\beta=-.24$ ,  $t=-3.58$ ), and perceived discrimination ( $\beta=-.11$ ,  $t=-2.14$ ). The attitude does not predict any of the outcome variables, however. Because this attitude is not a part of Berry's theory, and based on the results of the first product term model, another SEM was run, this time omitting the paths to and from the separation attitude variable. The variable itself was not omitted from the third model, so it was directly comparable to the first product term model. The third model produced a worse fit for the data ( $NFI_{(2,3)} = -0.05$ ). Also, the magnitudes of the path coefficients were reduced. These results indicate that the separation attitude is an important construct that reduces the effects of the identification constructs, and should at least be included as a covariate in future models.



Figure 8: SEM with identification product term.



$n=723$   $\chi^2_{(139)} = 226.33$   $CN=577.45$   $GFI=0.97$   $AGFI=0.95$   $NNFI=0.98$   $RMSEA=0.03$

Insignificant paths have been deleted from the figure. See table 3 for estimates and t values.

Table 5: Path estimates, correlations and T values for the product term SEM.

Outcome Variables:	1	2	3	4	5	6	7	8	9	10	11
1. Segregation											
2. SES	<b>-0.13</b> (-3.41)										
3. Academic Orientation	<b>0.03</b> (0.71)	<b>0.09</b> (2.20)									
4. Activity Level	<b>0.05</b> (1.36)	<b>0.11</b> (3.05)	<b>0.21</b> (4.99)								
5. Perceived Discrimination	<b>-0.07</b> (-1.68)	<b>0.01</b> (0.22)	<b>-0.06</b> (-1.44)	<b>0.07</b> (1.74)							
6. Identification	-0.10 (-2.83)	0.06 (1.68)	0.27 (6.53)	0.05 (1.40)	0.01 (0.14)						
7. Separation Attitudes	0.13 (2.60)	-0.11 (-2.26)	-.24 (-3.59)		-0.11 (-2.14)	<b>-0.20</b> (-3.47)					
8. Negative Affect					0.35 (8.20)	0.03 (0.64)					
9 Prototype						-0.09 (-2.20)	0.08 (1.55)	0.20 (4.50)			
10. Behavioral Willingness						-0.07 (-1.95)	-0.08 (-1.79)	0.08 (1.93)	0.36 (9.33)		
11. Behavioral Expectation/ Intention						-0.12 (-3.37)	-0.03 (-0.70)	0.09 (2.37)	0.36 (9.32)	<b>0.49</b> (13.42)	
12. Substance Use								0.11 (2.85)		0.19 (4.27)	0.26 (5.83)

*n*=723.

*Bold values indicate correlations.*

## Discussion

Although there is evidence of the importance of Berry's acculturation strategies in predicting health risk cognitions, the literature from other areas as well as the findings related to the withdrawal construct suggest that Berry's conceptualization of these strategies may be too simple, at least in describing the African American situation in relation to health risk behaviors.

Overall, identification processes are nonetheless an interesting addition to the investigation of the special circumstances in which African American adolescents are placed as they navigate through a society dominated by a culture that is not their own. The model presented in this study produced surprising results. The relations between racial identification and images of and attitudes toward substance use were in the opposite direction than expected based on the research on social norms, but stand in support of Berry's main postulation, that a high level of identification with both own ethnic group and other ethnic groups leads to more healthy behavior. Both sets of path coefficients in the model showed this relation. The follow-up analyses related to Berry's model further supported his theory.

### Identification with Own Group

According to the SEM, the prediction was not supported that identification with own racial group acts as a protective factor in mediating the effect of social factors on health cognitions in the prototype/willingness theory. The only way in which identifying with own ethnic group acts as a protective factor is by decreasing negative affect. Although the relation speaks positively for identification with own ethnic group as a coping mechanism, the findings suggest that identification with the African American cultural group may not be as important to the health of African Americans as may be expected by applying the ethnic identity literature to the area. The only way that this study has been able to track identification with own ethnic group as a predictor of health status is through

its relation to negative affect, or stress. Since stress is also a major predictor of health status, the idea of identifying with one's own ethnic group is most likely important to health.

#### Identification with Other Ethnic Groups

Although the hypothesis was that identification with other ethnic groups would lead to less restrictive images and attitudes, the prediction did not hold in this case. A reasonable explanation could be that the image of the typical substance user is in fact Black, and identification with other groups includes distancing from this image. This could be a case of pluralistic ignorance (thinking that everyone else in the in-group, in this case African Americans, has more liberal attitudes than oneself) leading to health promotion. A second explanation would be that individuals who identify with people who are different have a more positive outlook on life and that this translates into more healthy attitudes and behaviors. However, identification with other racial groups was related to more anxiety and depression, not less, and negative affect did not mediate the relation between the identification variable and the outcome variables, except in the case of prototype.

#### Separation Attitudes

In spite of the surprising results produced by the model, the identification measure used in this study produced an interesting construct that warrants further investigation. The items related to separation attitude did not fit well in the measurement model as indicators of the two identification variables. They were important covariates in the SEM where the two identification constructs were combined in a product term. In the original SEM, the separation construct proved to have an interesting effect on behavioral willingness, but this relation did not show up in the product term SEM. Furthermore, the attitude was strongly predicted by academic orientation, evidence of the "acting White" effect discussed above. Although Berry's model does not treat withdrawal as a separate construct, other literature related to racial identity does mention withdrawal from the majority culture.

For Cross, withdrawal is described as a phase in the development of ethnic identity, which he calls immersion. Witherspoon et al. (1997) found that students with low academic achievement were associated with this stage of identity development, and the researchers attributed the finding to the “acting White” effect. Contrary to earlier findings, however, the present study did not find that withdrawal increased substance use. As a matter of fact, separation attitudes predicted less willingness to engage in substance use. The robustness of this relationship, as well as the breadth of the influence of withdrawal attitudes should be tested by developing a better measure.

### The Driving Force

One of the main hypotheses of the study was that identification with other racial groups would be related to more positive prototypes and more willingness and intent to use substances. The hypothesis was based on research found in the assimilation literature, as described above, and on previous research related to health risk images in the African American population compared to the European American population. The results indicate that this is not the case; on the contrary, identification with other racial groups predicts more negative prototypes and less willingness and intent to use. In relation to the assimilation literature, however, it is interesting to note the predictive power of identification with other groups as opposed to identification with own racial group: Does one of these two constructs drive the relation between identification and health risk cognitions?

As noted above, identification with own and other ethnic groups are two processes that are important as predictors of health risk cognitions in African American adolescents. One important point, however, is that the relation between identification with own group was only related to the cognitions via negative affect, whereas identification with other group was directly related to the cognitions. Identification with other group promoted healthier cognitions. The coefficients in the table of total and indirect effects (table 4) suggest that identification with other ethnic groups has a greater impact on health risk cognitions than identification with own group. Furthermore, when the identification constructs were combined in the product term SEM, the relation between identification

and health cognitions remained, but the mediation by negative affect dropped out. The results of this study suggest that for health risk behaviors, the driving force behind the relation between racial identification and health risk cognition is found in identification with other racial groups. That is, although identifying with one's own group is a good coping strategy used to deal with social inequity, it is the individual's relation to the majority culture that affects health risk cognitions.

### Racial Identification as Coping

A second main purpose of this study was to determine if racial identification, otherwise referred to as acculturation strategy, mediates the relation between perceived discrimination and substance use. The proposed model did not show evidence of this mediation. There was some evidence of a relation, but the patterns were neither strong nor clear. The fact that the items of racial identification used here were not developed with the intent of testing the theories presented in this study may account for the lack of mediation. This proposal can be supported by the relatively low factor loadings associated with the measures. Nonetheless, there were several interesting effects that indeed are worth the effort put into this model.

Although identification processes are described by Berry as coping processes, it was only identification with own ethnic group that mediated the relation between the exogenous social variables (especially racial discrimination) and negative affect. Racial discrimination was expected to be the main stressor that elicited the coping strategies; this prediction was also refuted. Racial discrimination did elicit negative affect, and it did predict a separation attitude. However, neither of the identification variables was related to discrimination.

### The Importance of Academic Orientation

Although discrimination did not predict identification strategies, academic orientation did. As shown in the SEM, academic orientation led to more identification with both groups. The outcomes of the identification in relation to affect were different, however, as mentioned above. A small body of research has found that some Black students who do well in school and spend their time studying or

participating in class are actually ostracized by their peers. According to these studies, which tend to be qualitative rather than quantitative, these students are called names, excluded, and even harmed physically if they show interest in school, an institution that is considered to be the strong arm of the White majority society (Ducille, 2001; Fordham & Ogbu, 1986). The literature also relates that many adolescents are involved in a situation where they are bombarded with conflicting messages, because their parents are encouraging them to achieve while their peers are discouraging them from achieving (Datnow & Cooper, 1996; Witherspoon, Speight & Thomas, 1997). Furthermore, these students know that education is the way to move up in society, enabling them to make a positive impact on the same institutions they know have oppressed people of their race for three centuries (Fordham & Ogbu, 2001; Datnow & Cooper, 1996; Witherspoon, Speight, & Thomas, 1997).

In contrast to the negative impact identification with other racial group had on psychological well being, identification with own racial group had a positive effect. This is quite interesting, considering that academic orientation promotes ethnic pride with a similar magnitude as it promotes interest in other ethnic groups. Again, the literature on academic achievement can shine light on this relation. Modeling studies the studies mentioned above, most of which sampled from schools situated in low-SES neighborhoods, researchers also conducted studies with samples in high-achievement, traditionally White private upper and lower level secondary schools, similar to junior and senior high schools (Datnow & Cooper, 1996). In contrast to the former studies, however, the latter studies found that academic achievement was fostered by peers, and that these students felt that they had a greater understanding of their own culture than was afforded them while attending predominantly Black, lower or middle class schools. These students remembered a time when they were ridiculed for “acting White,” starting as early as in elementary schools. Here, however, the high-achieving students found peer groups—predominantly composed of African Americans—that valued both academic achievement and Black pride. Another important aspect of their experience at these schools is that they believed that they had more opportunities to learn about their culture, especially through their

exposure to better literature and history curricula than they had been afforded in public schools. This exposure, they believe, deepened their understanding of their own culture, an effect that may be evidenced in the findings of the present study.

The implications of the importance of academic orientation in this conceptualization of health risk behaviors in African Americans are very interesting. The school is already the main area of influence through which public health professionals work to influence adolescents to live healthy lives. Within this arena, the issues of race are particularly important, as evidenced by the influence of academic orientations on the mediators between societal factors and vulnerability to drug use.

#### Limitations of the Study

The most salient limitation of the present study is the weakness of the most important measures. The factor loadings on the identification variables were low, the highest only reaching 0.71(see table 2). This means that the latent construct accounted for only 49% of the variance in the measurement instrument. Not only should the measures be sharpened, they should also be balanced, so that there are similar numbers of items measuring each dimension of identification. As the factors are composed presently, inordinate weight is given to each item in the separation and identification with other group measures when either is combined in an interaction term with identification with own racial group for a regression. This difficulty, combined with the weakness of the measurement instrument as described above has made tests of interactions in hierarchical regression unreliable in this study, and the results have not been reported.

A second limitation of the study relates to the sample used. The participants were quite young, only beginning their journeys into discovering their identity and into the jungle of opportunities to experiment with substance use. Also, the data used for this study were cross-sectional, and did not test predictions over time. Hopefully, future waves of data in the FACHS will provide opportunities to describe how these journeys unfold in relation to ethnic identification. More

waves of data will also allow for more sophisticated analyses of reciprocal causation and development of the relations over time.

### Future Directions

Besides developing the identification measures in future research, some important questions relating ethnic identification to health risk cognitions can be explored. The most burning question raised relates to the prototype image: Is the typical smoker/drinker/drug user Black? Is he/she White? Is race attached to the image at all? By answering these questions, the interpretation of identification's effects on the prototype would be clarified: Does identification with other racial groups promote distancing from the prototypical user, who Carter (1991) proposes is Black? A second question would probe how parents' perceptions of discrimination and socialization to race affect adolescent identification. Finally, the goal of research with ethnic identification processes in relation to health (risk) cognitions is to expand the model to other ethnic minorities in American society and worldwide.

### Conclusion

The results of the present study show that racial identification is an important factor in the lives of African American adolescents as they maneuver through their social worlds. Three factors of identification were identified, all of which affect the cognitions related to health risk behaviors in the prototype/willingness theory. Due to the influence of racial identification on these cognitions, future research and interventions would do well to consider racial identification as an important factor to incorporate when targeting American adolescents of African descent.

Appendix: Correlations, Means, and Standard Deviations of Manifest Variables

Appendix: Correlations, Means, Standard Deviations of Manifest Variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
<b>1 Seg</b>	1.00																									
<b>2 SES</b>	-.13	1.00																								
<b>3 AcadOr1</b>	.00	.05	1.00																							
<b>4 AcadOr2</b>	.03	.06	.66	1.00																						
<b>5 AcadOr3</b>	.03	.12	.55	.65	1.00																					
<b>6 Activity</b>	.05	.11	.20	.16	.15	1.00																				
<b>7 PerDisc1</b>	-.06	-.01	.03	-.05	-.05	.07	1.00																			
<b>8 PerDisc2</b>	-.02	.04	.00	-.10	-.07	.03	.75	1.00																		
<b>9 PerDisc3</b>	-.08	.00	.04	-.07	-.04	.06	.80	.75	1.00																	
<b>10 Depr</b>	-.01	.00	-.03	-.10	-.10	.01	.26	.27	.27	1.00																
<b>11 Anxty</b>	.01	-.06	.03	-.07	-.10	.07	.22	.24	.23	.64	1.00															
<b>12 IdOwn1</b>	.02	.02	.18	.18	.17	.07	.00	.03	-.02	-.01	-.01	1.00														
<b>13 IdOwn2</b>	.05	.09	.10	.10	.12	.02	.03	.07	.03	-.06	-.03	.41	1.00													
<b>14 IdOwn3</b>	-.03	.12	.13	.14	.14	.01	-.01	.06	-.04	-.05	-.08	.44	.44	1.00												
<b>15 IdOth1</b>	-.11	.08	.15	.11	.07	.06	-.01	.00	.00	.08	.05	.19	.12	.24	1.00											
<b>16 IdOth2</b>	-.07	.02	.22	.20	.17	.10	-.07	-.05	-.07	.00	.02	.18	.08	.19	.36	1.00										
<b>17 IdOth3</b>	-.14	.05	.18	.12	.10	.14	.04	.03	.05	.03	.07	.18	.09	.12	.43	.29	1.00									
<b>18 SepAt1</b>	-.09	.09	.09	.14	.13	.08	-.04	-.05	-.04	-.01	-.04	.03	-.13	.01	.15	.12	.14	1.00								
<b>19 SepAt2</b>	-.11	.11	.09	.15	.16	.07	.08	.09	.10	.08	.02	.03	-.04	.13	.23	.20	.18	.33	1.00							
<b>20 SmokProt</b>	-.02	-.06	-.13	-.12	-.13	-.07	.04	.08	.01	.14	.11	-.03	.03	-.03	-.08	-.07	-.06	-.06	-.05	1.00						
<b>21 AlcProt</b>	.00	-.09	-.12	-.14	-.14	-.05	.05	.09	.04	.15	.14	-.04	-.01	-.03	-.04	-.11	-.06	-.05	-.01	.76	1.00					
<b>22 DrugProt</b>	.02	-.11	-.13	-.12	-.16	-.08	.03	.06	.02	.13	.12	-.05	-.01	-.07	-.11	-.11	-.08	-.08	-.09	.68	.70	1.00				
<b>23 Will</b>	.00	-.05	-.11	-.22	-.16	-.05	.04	.06	.06	.12	.14	-.02	-.01	-.04	-.05	-.11	-.07	-.04	.06	.31	.36	.29	1.00			
<b>24 BeBi</b>	-.04	-.01	-.17	-.22	-.15	-.08	.08	.10	.08	.15	.10	-.08	-.05	-.12	-.09	-.11	-.10	-.08	.00	.33	.34	.32	.65	1.00		
<b>25 Use</b>	-.06	-.01	-.13	-.14	-.17	-.06	.08	.11	.11	.16	.12	-.05	-.04	-.06	-.06	-.03	.00	-.02	.04	.16	.19	.20	.37	.40	1.00	
<b>Mean</b>	46.81	0.00	3.02	3.14	3.38	12.49	1.68	1.57	1.65	1.29	1.30	3.55	3.55	3.61	3.30	3.49	3.34	3.06	3.42	1.74	1.67	1.63	1.08	0.08	0.05	
<b>SD</b>	28.04	0.84	0.48	0.48	0.40	4.06	0.63	0.57	0.61	0.21	0.21	0.55	0.61	0.48	0.64	0.67	0.83	1.00	0.86	0.54	0.55	0.56	0.23	0.21	0.14	

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