

Examining the Light and Dark Sides of Emerging Adults' Identity: A Study of Identity Status Differences in Positive and Negative Psychosocial Functioning

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Abstract Identity is a critical developmental task during the transition to adulthood in Western societies. The purpose of the present study was to evaluate an empirically based, cluster-analytic identity status model, to examine whether all four of Marcia's identity statuses (diffusion, foreclosure, moratorium, and achievement) would emerge empirically, and to identify different patterns of identity formation among American college-attending emerging adults. An ethnically diverse sample of 9,034 emerging-adult students (73% female; mean age 19.73 years) from 30 U.S. universities completed measures of identity exploration (ruminative, in breadth, and in depth) and commitment (commitment making and identification with commitment), identity synthesis and confusion, positive and negative psychosocial functioning, and health-compromising behaviors. The identity status cluster solution that emerged provided an adequate fit to the data and

included all four of Marcia's original identity statuses, along with Carefree Diffusion and Undifferentiated statuses. Results provided evidence for concurrent validity, construct validity, and practical applicability of these statuses. Implications for identity research are discussed.

Keywords Identity · Cluster analysis · Psychosocial functioning · Well-being · Depression · Health-compromising behavior · Emerging adulthood

Introduction

According to Erikson (1950, 1968), developing a coherent and synthesized sense of identity is one of the primary developmental tasks of the transition to adulthood. Identity helps to guide the decisions of adulthood, such as whether

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(and whom) to marry, what career to choose, and how to raise one's children (Fadjuoff et al. 2005). A coherent and synthesized sense of identity is associated with a positive self-image (Luyckx et al. 2005), positive social relationships (Zimmer-Gembeck and Petherick 2006), and lowered degrees of internalizing (e.g., depression and anxiety) and externalizing (e.g., rule breaking, gossiping and lying, physical aggression) symptoms (Schwartz 2007). As a result, individuals who have a clear sense of who they are and where they are going in their lives are more likely to feel positive about themselves and to engage in enjoyable and caring relationships with other people, and less likely to be distressed and worried or to engage in behavior that is harmful to others. On the other hand, a confused sense of identity is associated not only with internalizing symptoms (Schwartz et al. 2009a), but also potentially with externalizing symptoms, illicit drug use, and sexual risk taking (Schwartz et al. 2005c, 2008). As a result, for Erikson, successful identity development is represented as a preponderance of identity synthesis over identity confusion.

As Erikson foresaw more than 60 years ago, developing a sense of identity is a critical task during the transition to adulthood. The increasingly unstructured and “everyone for themselves” nature of many Western societies has placed a premium on possessing a sense of identity. People who know who they are and where they are going are likely to capitalize on the opportunities presented by the de-structuring of Western society, whereas those young people who struggle to make their way into adulthood may experience difficulties in a number of life areas, such as self-esteem and well-being, depression and anxiety, and personally and socially destructive activities (Côté and Bynner 2008; Côté and Levine 2002). Erikson's writings were characterized by rich clinical descriptions of identity processes and their precursors and outcomes, but his goal was not to provide precise, detailed operational definitions. Erikson (1950) himself wrote that “at times, the reader will find me painting contexts and backgrounds where he would rather have me point to facts and concepts” (p. 16). As a result, although some attempts have been made to directly measure identity synthesis and confusion (e.g., Rosenthal et al. 1981), commonly used identity measures do not capture the full richness of Erikson's theory of identity.

Marcia (1966, 1980) was one of the first theorists to develop an empirical model based on Erikson's theoretical and clinical writings by extracting the independent dimensions of *exploration* and *commitment*. Exploration refers to consideration of a diverse array of potential identity alternatives (Grotevant 1987), and commitment refers to having adopted one or more such alternatives (Bosma and Kunnen 2001). Marcia divided both exploration and commitment into “high” versus “low” levels to yield four identity statuses, each of which represents a way

of addressing (or not addressing) identity issues. There is a rich literature detailing the personality and behavioral profiles of individuals in each of these statuses (Kroger and Marcia 2011). *Achievement* represents establishing commitments following a period of exploration, and is associated with balanced thinking, mature interpersonal relationships, and thoughtful consideration of potential life options (Berzonsky 2004; Zimmer-Gembeck and Petherick 2006). *Moratorium* represents actively considering identity alternatives, in the absence of strong commitments. It is positively associated with openness and curiosity on the one hand (Luyckx et al. 2006c), and with anxiety, depression, and low self-worth on the other (Schwartz et al. 2009b). *Foreclosure* represents adopting commitments without prior exploration, and is associated with high self-worth but also with rigidity, closed-mindedness, and authoritarianism (Kroger and Marcia 2011). *Diffusion* represents either a lack of interest in identity issues or a confused and haphazard approach to identity, and tends to be associated with low self-esteem, delinquency, and drug or alcohol problems (Adams et al. 2005; Luyckx et al. 2005; Schwartz et al. 2005a).

Although the identity statuses have inspired more than 40 years of theoretical and empirical work (Kroger 2000; Kroger and Marcia 2011), the statuses have nonetheless been the target for a great deal of criticism. Most broadly, these criticisms characterized the status model as misrepresenting or underrepresenting Erikson's core principles (Côté and Levine 1988; van Hoof 1999). Specifically, Erikson (1950) posited identity as a dynamic between synthesis and confusion, where adaptive functioning was assumed to be predicated on a predominance of synthesis over confusion, and vice versa for maladaptive functioning. Thus, within the identity status model, the diffused status appears to roughly approximate identity confusion, and the achieved status may roughly approximate identity synthesis (Côté and Schwartz 2002; Schwartz et al. 2005a). However, the placement of moratorium and foreclosure within Erikson's synthesis-confusion dynamic is not entirely clear. Although moratorium was originally posited as a route to achievement (Marcia 1966, 1980), the adjustment profiles of these two statuses are nearly opposing: the uncertainty of moratorium is associated with anxiety, depression, and poor well-being (Kidwell et al. 1995; Schwartz et al. 2009b), whereas the security of achievement is associated with high self-esteem, low levels of internalizing symptoms, and avoidance of health-compromising behaviors (Bishop et al. 2005; Luyckx et al. 2005). Although moratorium may represent the identity crisis as posited by Erikson (1950, 1968), the transition from the uncertainty of moratorium to the security of achievement may be difficult to complete successfully (Côté and Schwartz 2002; Meeus et al. 2010). The

foreclosed status has also been a point of contention between the Erikson and Marcia models (Côté and Levine 1988; van Hoof 1999). Because foreclosure represents commitments that are adopted from others without thoughtful consideration, it has been considered as a “less mature” status compared to achievement (e.g., Marcia 1980). However, foreclosure and achievement have been found to be virtually indistinguishable on many indices of positive (e.g., self-esteem) and negative (e.g., internalizing symptoms) psychosocial functioning (Waterman 1999a). This presents a challenge for identity status theory, in that foreclosure—supposedly a less mature status—appears to provide many of the same benefits as achievement. Does foreclosure, then, also represent identity synthesis? Given Erikson’s (1950, 1968) definition of identity synthesis as a self-directed resolution to the task of developing a sense of identity, the equivalence of foreclosure with identity synthesis seems to be a logical impossibility.

Generally, the neo-Eriksonian identity field has responded to these criticisms either through attempts to derive alternative understandings of identity from an Eriksonian perspective (e.g., Côté 1997, 2002; Crocetti et al. 2008; Luyckx et al. 2005; Schwartz 2007) or through attempts to “unpack” exploration and commitment into a larger set of specific processes from which to derive identity statuses (e.g., Crocetti et al. 2008; Luyckx et al. 2006b). These attempts have generally resulted in a more nuanced understanding of the identity statuses, rather than a complete rejection of them, and this understanding has served to bolster the construct validity of the identity status model. Whereas Marcia viewed exploration as the process underlying identity development and viewed commitment as the outcome of that process, newer models view *both* exploration *and* commitment as processes. These newer models have also been used to empirically extract identity statuses that strongly resemble (and extend) those proposed by Marcia (e.g., Crocetti et al. 2008; Luyckx et al. 2005; Luyckx et al. 2008a, b, c). Demonstrating that the identity statuses can be empirically derived from continuous measures of identity processes provides strong evidence that the status model does indeed capture the process of identity development.

A recent example is the work of Luyckx et al. (2005, 2006a, b) who have proposed a “dual-cycle” identity model that includes both commitment formation and commitment evaluation as separate but interrelated processes. In this model, individuals *form* commitments through exploring various options in breadth (or by “borrowing” identity elements from parents or other significant people in one’s life) and adhering to one or more of the options selected. Individuals then *evaluate* their commitments by exploring them in depth (e.g., thinking carefully about them, talking with others about them). Provided that

individuals continue to view their commitments positively, they will identify with these commitments and will incorporate them into their overall sense of self. Luyckx et al. therefore subdivide exploration into exploration in *breadth* and exploration in *depth*, and they subdivide commitment into *commitment making* and *identification with commitment* (see Sneed and Whitbourne 2001, 2003, for a similar model applied to middle and later adulthood). More recently, Luyckx et al. (2008a, b, c) have proposed a third form of exploration, *ruminative* exploration, through which individuals become “stuck” in the exploration process, continuously obsessing over and questioning their choices and not allowing themselves the intrapersonal space necessary to make commitments. Ruminative exploration represents an impediment to identity development in emerging adulthood, because the individual is so concerned with making a “perfect” choice that she or he often does not make a choice at all (Luyckx et al. 2008e).

In several studies, using the identity processes proposed in the Luyckx et al. model, empirically based cluster analytic procedures have been used to derive identity statuses (Luyckx et al. 2005, 2008a, b, c, d). In all of these studies, Marcia’s original four statuses emerged from analysis, along with new statuses: a carefree form of diffusion and an undifferentiated status. The carefree form of diffusion represents individuals who are happily uncommitted, whereas the undifferentiated status represents individuals whose scores for all statuses were relatively close to their respective sample means (cf. Adams et al. 1989). These new statuses capitalize on the work of Archer and Waterman (1990), who proposed that some of the identity statuses have multiple variants characterized by different demographic, adjustment, and risk-behavior correlates.

However, empirically derived identity status models have been validated only with a limited range of correlates, largely limited to self-esteem, internalizing symptoms, self-reflection, and perceived parenting (Crocetti et al. 2008b; Luyckx et al. 2005, 2008a, b, c). Although we know that foreclosed and achieved individuals have higher self-esteem and fewer internalizing symptoms compared to individuals classified into other statuses, much less is known about status differences in well-being, externalizing symptoms, and health-compromising behavior. At least four important steps have not been taken in research on these empirically derived identity statuses—steps that are important in further validating, exploring, and advancing these models (and the identity status approach in general). Foremost, thus far, empirically based identity status models have been proposed and examined exclusively in Europe—specifically Belgium, Italy, and the Netherlands. To ensure that these statuses are appropriate for use in the United States, it is essential to validate them using an American sample. If empirically derived identity status models were

to be empirically valid in the United States, then this would bolster confidence in the model within North American contexts. Such a finding would suggest that—despite mean differences in identity processes between North American and European samples (Schwartz et al. 2006; Taylor and Oskay 1995)—the structure of the status model is equivalent between these two contexts. Moreover, it is important to use samples that capture regional diversity within the United States (e.g., Northeast, Southeast, Midwest, Southwest, and West), given documented differences in identity-related variables between and among these regions (Vandello and Cohen 1999).

The second step would involve establishing concurrent validity by linking these empirically derived identity status models with measures of Erikson's notions of identity synthesis and confusion. A finding that the statuses differ as expected on measures of identity synthesis and confusion, especially if individuals in achievement score higher on synthesis compared to individuals in foreclosure, would suggest that "expanded" identity status models have the potential to address the criticism that the identity statuses misrepresent Erikson's work. Validating the statuses with regard to indices taken from Erikson's (1950) theory of identity is therefore an important step.

The third step would involve exploring links with an expanded set of psychosocial correlates, including externalizing as well as internalizing symptoms, general well-being, and sense of purpose. The inclusion of an expanded array of indices of positive and negative psychosocial functioning would also provide a more expansive evaluation of the empirically derived identity status model. Positive functioning is a multifaceted construct (cf. Waterman 2008), with some components that refer to self-evaluation (e.g., self-esteem), others that refer to one's assessment of how one's life has proceeded thus far (e.g., life satisfaction), and still others that involve growth and purpose (e.g., psychological well-being, meaning in life, and eudaimonic well-being). Although foreclosure and achievement have not been found to differ in terms of self-esteem (e.g., Kroger and Marcia 2011; Luyckx et al. 2005), they have been found to differ in terms of indices of eudaimonic well-being (e.g., Schwartz et al. 2000). The literature on identity status differences in various forms of well-being is sparse and scattered, and research is needed to ascertain status differences in multiple forms of well-being in a single study. Establishing the extent to which emerging adults in various identity statuses might differ in terms of multiple forms of well-being and positive functioning is important for understanding how individuals in each status are likely to function and adapt.

The fourth step would involve establishing public health relevance of the statuses through links with health-compromising behaviors such as hazardous alcohol use,

illicit drug use, unsafe sexual behavior, and impaired driving. The existing research base on identity status differences in externalizing and health-compromising behaviors is small (see Bishop et al. 2005; Jones et al. 1989, for examples of such work). Erikson (1950) contended that adolescents and young adults may engage in these behaviors as a way of compensating for severe difficulties with identity development. This suggests that diffusion may represent a risk, at least in some individuals, for behaviors such as rule breaking, aggression, hazardous drinking, illicit drug use, unsafe sexual activity, and impaired driving (i.e., driving while intoxicated or riding with an intoxicated driver). Luyckx et al. found that individuals in "diffused diffusion" (the type of diffusion that Marcia originally proposed) were prone to low self-esteem and elevated internalizing symptoms, but that individuals in the "carefree diffusion" status (corresponding to the "playboy" type of diffusion that was later proposed by Marcia 1989; and by Archer and Waterman 1990) did not evidence compromised psychosocial functioning. However, it is not known whether carefree diffusion may be associated with other problems, such as externalizing behavior and health-compromising activities. A more complete assessment of the Luyckx et al. status model, with a much broader set of potential correlates, is needed.

The Present Study

The present study utilized Luyckx et al.'s (2006a, 2008a, b, c, d, e) five-process model of identity formation, including the three variants of exploration (breadth, depth, and ruminative) and two variants of commitment (commitment making and identification with commitment). We first sought to examine the extent to which the six-status model extracted from the Belgian studies (e.g., Luyckx et al. 2008a, b, c) would also emerge in the United States. We did so using two-step cluster-analytic procedures (Gore 2000; Steinley and Brusco 2007) conducted on a large American sample. We then compared the statuses on Eriksonian indices of synthesis and confusion; on well-being and positive functioning, internalizing symptoms, and externalizing problems; and on engagement in health-compromising behaviors. These comparisons were intended to establish empirical convergence between the identity statuses and Erikson's theory (cf. Côté and Levine 2002; Waterman 1988), and to examine the psychosocial and health-risk profiles of each status.

We advanced four hypotheses for the present study. These hypotheses correspond to the study objectives enumerated above. Our first hypothesis was that the same six-cluster solution that emerged in the Belgian studies would also emerge in the present American sample. Our second hypothesis was that, given the conceptualization of

achievement as reflecting Erikson's concept of identity synthesis, and of diffusion as reflecting identity confusion (Côté and Schwartz 2002; Schwartz et al. 2009a), individuals classified into achieved statuses would score highest on identity synthesis, and individuals classified into diffused statuses would score highest on identity confusion. Given the disequilibrium involved in active identity exploration (Luyckx et al. 2008a, b, c; Schwartz et al. 2009b), we expected that individuals in moratorium would score close to those in diffusion on our measure of identity confusion. However, given that individuals in moratorium are assumed to be progressing toward identity synthesis, we hypothesized that moratorium statuses would be associated with higher levels of identity synthesis compared to diffused statuses.

Our third hypothesis was that, given that commitment is linked positively to well-being and positive functioning, and negatively to psychological distress (Luyckx et al. 2008c, 2010b), individuals classified into achieved and foreclosed statuses would score highest, and those in diffusion and moratorium statuses lowest, on indices of self-esteem, meaning in life, and well-being. We anticipated that the reverse would be the case with regard to internalizing symptoms. Additionally, we hypothesized that diffused individuals would score highest, and that achieved persons would score lowest, on measures of externalizing problems (cf. Adams et al. 2005; Schwartz et al. 2005c).

Our fourth hypothesis was that, given the protective role of identity commitments against health-compromising behaviors (e.g., hazardous alcohol use, illicit drug use, unsafe sexual behavior, and impaired driving; Schwartz et al. 2010), the diffused and moratorium statuses would score higher on risk behavior engagement compared to the foreclosed and achieved statuses.

Method

Sample and Procedures

The present sample consisted of 9,034 emerging-adult students (73% women) from 30 colleges and universities around the United States. The overrepresentation of women in the sample is consistent with the disproportionate representation of women among college students in general (USA Today 2010). Participants' mean age was 19.76 years ($SD = 1.61$ years). Given Arnett's (2000) definition of emerging adulthood, only participants between 18 and 25 years of age, and who provided valid data for the Dimensions of Identity Development Scale, were included in the present sample. Moreover, 10 univariate or multivariate outliers on the clustering variables were removed, resulting in a final sample of 9,024 emerging adults (cf. Gore 2000).

Thirty-seven percent of participants were in their first year of college, 24% were in their second year, 21% were in their third year, 13% were in their fourth year, and 5% had been in college for more than 4 years. Regarding ethnicity, 62% of participants identified as White, 8% as Black, 15% as Hispanic, 11% as East Asian, 3% as South Asian, 1% as Middle Eastern, and less than 1% as other ethnicity. The vast majority of participants (88%) and their mothers (68%) and fathers (69%) were born in the United States. Six of the data collection sites were located in the Northeast, seven in the Southeast, seven in the Midwest, three in the Southwest, and seven in the West. Seventeen of the sites were large state universities, six were smaller state universities, four were major private universities, and three were private colleges. In all, 20 U.S. states were represented in the study. At all sites, the study was approved by the site's Institutional Review Board.

Classes were surveyed in the disciplines of psychology, sociology, business, family studies, education, and human nutrition. At each site, participants were directed through printed or emailed announcements to a website developed specifically for the present study. Students participated as part of a course research requirement or received extra course credit for their participation. Average completion time ranged from 1 to 2 h. Of participants who logged on to the study website, 85% completed all six survey pages. Data were collected between September 2008 and October 2009.

Of all data, 7.6% were missing due to scale or item nonresponse. Careful inspection of the patterns of missing data on all study variables, using Little's (1988) MCAR test indicated that data were missing completely at random, $\chi^2(385,432) = 395,727.76$, $\chi^2/df = 1.03$. Therefore, missing values were estimated using maximum likelihood estimation (Schafer 1997) and using the expectation maximization algorithm available in SPSS.

Measures

All alpha coefficients reported here were calculated using the present dataset. Unless otherwise specified, all measures used a five-point Likert response scale.

Identity

The Dimensions of Identity Development Scale (Luyckx et al. 2008a, b, c) consists of five-item scales for each of the five identity dimensions proposed by Luyckx et al. (2006a, b, 2008a, b, c): commitment making ($\alpha = .91$), identification with commitment ($\alpha = .93$), exploration in breadth ($\alpha = .84$), exploration in depth ($\alpha = .81$), and ruminative exploration ($\alpha = .85$). These alpha coefficients are extremely similar to those reported on the Belgian datasets.

Sample items include “I know what I want to do with my future” (commitment making), “My future plans give me self-confidence” (identification with commitment), “I think a lot about the direction I want to take in my life” (exploration in breadth), “I think a lot about the future plans I have made” (exploration in depth), and “I keep wondering which direction my life has to take” (ruminative exploration).

Identity Synthesis and Confusion

The Erikson Psychosocial Stage Inventory (Rosenthal et al. 1981) assesses identity synthesis and confusion, the two poles within Erikson’s (1950) theory of identity. Synthesis ($\alpha = .81$) and confusion ($\alpha = .79$) are each measured using six-item scales. Sample items include “I’ve got it together” (identity synthesis) and “I feel mixed up” (identity confusion).

Positive Psychosocial Functioning

Seven subscales were used as indicators of positive psychosocial functioning: self-esteem, internal locus of control, meaning in life (both search for and presence of meaning), life satisfaction, psychological well-being (behavioral indicators of positive functioning, such as maintaining satisfying relationships and giving to others), and eudaimonic well-being (being guided by a desire to live in accordance with one’s innermost talents and potentials). We measured *self-esteem* using the 10-item Rosenberg Self-Esteem Scale ($\alpha = .88$; Rosenberg, 1965). A sample item is “I have a number of good qualities.” We assessed *internal locus of control* using Côté’s (1997) five-item adaptation of the Rotter (1966) Locus of Control Scale ($\alpha = .63$), with a five-point response scale used in place of the traditional ipsative format. We assessed *meaning in life* using the Meaning in Life Scale (Steger et al. 2006). Two 5-item subscales are included: search ($\alpha = .87$) and presence ($\alpha = .87$). Sample items include “I am looking for something that makes my life meaningful” (search) and “I understand my life’s meaning” (presence). We measured *life satisfaction* using the five-item Satisfaction with Life Scale ($\alpha = .87$; Pavot and Diener 1993). A sample item is “If I could live my life over again, I would change almost nothing.” We measured *psychological well-being* using the shortened 18-item version of the Scales for Psychological Well-Being (Ryff and Keyes 1995). The total score was used ($\alpha = .81$). Sample items include “I have confidence in my opinions, even if they are contrary to the general consensus.” We measured *eudaimonic well-being* using the newly developed Questionnaire for Eudaimonic Well-Being (Waterman et al. 2010). This measure consists of 21 items ($\alpha = .86$) assessing the extent to which one is

oriented toward discovering one’s life purpose, living according to one’s innermost talents and potentials, and willing to take on challenging tasks that facilitate personal growth. Sample items include “I feel that I have discovered who I really am.”

Negative Psychosocial Functioning

Negative psychosocial functioning was assessed in terms of internalizing (depressive symptoms, general anxiety, and social anxiety) and externalizing (rule-breaking, social aggression (e.g., name calling, gossiping), and physical aggression) symptoms. We assessed *depressive symptoms* using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977). This scale consists of 20 items ($\alpha = .86$) assessing symptoms of depression occurring during the past week. A sample item reads “This week, I felt like crying.” We assessed symptoms of *general anxiety* during the week prior to assessment using an adapted version of the Beck Anxiety Inventory (Beck et al. 1988). This adapted version consists of 18 items ($\alpha = .95$), such as “I have been worrying a lot this week.” We assessed *social anxiety* symptoms, such as being hesitant to talk to an attractive person of the opposite sex, using the Social Interaction Anxiety Scale (SIAS; Habke et al. 1997). This measure consists of 19 items ($\alpha = .94$), including “When mixing socially, I am uncomfortable.”

We measured *rule breaking*, *social aggression*, and *physical aggression* using items from the Adult Self-Report (Achenbach and Rescorla 2003), as selected and modified by Burt and Donnellan (2008). These items asked how often (1 = *never*; 5 = *nearly all the time*) participants had engaged in a number of behaviors during the 6 months prior to assessment. The rule-breaking subscale includes 11 items ($\alpha = .95$), including “Broke into a store, mall, or warehouse.” The social aggression subscale consists of 11 items ($\alpha = .85$), including “Made negative comments about someone else’s appearance.” The physical aggression subscale consists of 10 items ($\alpha = .85$), including “Got into physical fights.”

Health-Compromising Behaviors

Under the heading of health-compromising behaviors, we included hazardous alcohol use, as well as a number of single-item scales asking participants to report the number of times in which they had engaged in a range of health-compromising behaviors during the 30 days prior to assessment. We assessed hazardous alcohol use with the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al. 1993) to assess respondents’ level of hazardous alcohol use. Three AUDIT items assess alcohol use quantity and frequency (e.g., “How many drinks containing

alcohol do you have on a typical day when you are drinking?”), three items assess frequency of alcohol-dependent behaviors (e.g., “How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?”), and four items assess problems caused by alcohol (e.g., “Have you or someone else been injured as a result of your drinking?”). AUDIT scores are derived by summing participants’ responses across the 10 AUDIT items. In the present study, the Cronbach’s alpha coefficient for scores on the AUDIT was .79.

With regard to other risk behaviors, we asked about use of illicit drugs, including marijuana, hard drugs (e.g., cocaine, ecstasy, methamphetamines), inhalants, injecting drugs, and misuse of prescription drugs (any use not specifically prescribed by a doctor) in the month prior to assessment. We also asked about unsafe sexual behaviors, including oral sex, anal sex, casual sex (sexual relations with someone whom the participant knew for less than a week), unprotected sex, and sex while drunk/high. Additionally, we asked about driving while drunk or high, and about riding with a driver who was drunk or high. The response scale consisted of five choices: 0 (*never*), 1 (*once/twice*), 2 (*3–5 times*), 3 (*6–10 times*), and 4 (*more than 10 times*). We also asked about the number of sex partners in the past 30 days, with a free response field provided.

Results

Analytic Strategy

Analyses for the present study consisted of five steps. First, we used a multi-step process to create the identity clusters. Second, we used identity synthesis and confusion to validate the cluster solution. If the cluster solution were to possess adequate concurrent validity, clusters identified as diffusion or moratorium should be lower in identity synthesis, and higher in identity confusion, compared to clusters identified as foreclosure or achievement. Third, provided that the clusters appeared to possess adequate concurrent validity, we cross tabulated the clusters against gender and ethnicity, to explore the extent to which identity status membership would differ across these demographic variations. This is important given prior literature on gender and ethnic differences in identity processes and statuses (Lewis 2003; Schwartz and Montgomery 2002). Fourth, we compared the clusters on positive and negative psychosocial functioning. Evidence for construct validity of the cluster solution would be present if profiles of the statuses obtained in prior research—using a priori categorization methods—were to be replicated using the clusters extracted here using empirical classification methods. For example,

achieved and foreclosed clusters should score higher on self-esteem and well-being, and lower on internalizing symptoms, than diffused and moratorium clusters. Finally, we compared the clusters on recent (past 30 days) health-compromising behavior participation. The clustering variables were not included in any of these validation analyses.

In the comparisons of identity synthesis and confusion, positive and negative psychosocial functioning, and health-compromising behaviors across clusters, we used a sandwich estimator (Kauermann and Carroll 2001) to adjust the standard errors to account for the nesting of participants within data collection sites. This adjustment prevents the Type I error inflation that can result from ignoring multilevel nesting (Bliese and Hanges 2004). This was done using the `TYPE = COMPLEX` command in Mplus (Muthén and Muthén 2006). We created dummy variables for the identity status clusters and entered all of these dummy variables (except for one, which was used as a reference category) as predictors of each of the outcomes in question. A series of analyses, one apiece with each status used as the reference group, was conducted to ascertain pairwise differences between status clusters on each continuous variable. These analyses were parameterized as linear regressions for identity synthesis and confusion, for positive and negative psychosocial functioning, and for hazardous alcohol use; and as logistic regressions for the other health-compromising behavior variables. We report overall *F*-ratios and chi-square statistics for each variable, but pairwise comparisons were conducted using the sandwich estimator.

Creation of the Identity Status Clusters

To create the identity status clusters, we used a variation of the two-step process used in the Belgian studies (Luyckx et al. 2005, 2008), using the Ginkgo software (De Caceres et al. 2007). We first standardized each variable based on its placement along the range of possible scores (Steinley and Brusco 2008). For example, a score falling exactly in the middle of the range of possible scores would receive a range-standardized value of .50. Next, we split the sample by odd versus even case numbers, and we conducted the clustering procedure within both half-samples. Following Gore (2000), within each half-sample, we first conducted a hierarchical cluster analysis, using Ward’s method with squared Euclidean distances (Steinley and Brusco 2007), on the five identity dimensions, requesting a six-cluster solution as obtained by Luyckx et al. (2008a, b, c). The cluster centers from this hierarchical analysis were then used as nonrandom starting points in an iterative *k*-means cluster analysis. We then compared this six-cluster solution to four-, five-, and seven-cluster solutions, using three criteria (Milligan and Cooper 1985): (a) the Calinski-Harabasz index (CH; Steinley 2006); (b) the stepsize criterion, which

is similar to the scree plot generated by exploratory factor analysis; and (c) the F ratio, which indicates the percentage of variance in the clustering variables that is explained by the cluster solution. Finally, we used the cross-validation procedure described by Breckenridge (1989, 2000) to validate the final cluster solution. We clustered the data in each half-sample again, but this time with non-random starting values taken from the final centroids from the other half-sample. We compared the two solutions within each half-sample using the Hubert-Arabie Adjusted Rand Index (Steinley 2004). Values for this index range from 0 to 1, with higher values indicating greater agreement between the two cluster solutions and underscoring the conclusion that the obtained clustering does not depend on the specific sample involved. A similar cross-validation procedure was used to test the consistency of the clusters across gender.

The Calinski-Harabasz indices were 14,165.48 for the six-cluster solution, 12,542.80 for the four-cluster solution, 12,847.97 for the five-cluster solution, and 14,821.22 for the seven-cluster solution. Although the seven-cluster provided the best fit according to the CH index, one of the clusters represented only 2% of the sample and was extremely similar to another cluster. The stepsize plot leveled off after six clusters, and the proportion of explained variance increased by 8% when moving from four to five clusters, by 6% when moving from five to six clusters, and by only 2% when moving from six to seven clusters. The addition of a seventh cluster did not appear to provide much new information, and as a result we concluded that a six-cluster solution provided the best and most parsimonious fit to the data.

The Hubert-Arabie Adjusted Rand Index was .98 in both half-samples, and .97 for both men and women, indicating that the six-cluster solution was highly internally reliable and consistent across gender. The six clusters also supported theory and differed in a number of important ways, as presented in Fig. 1 and in Table 1. In the figure and in the table, for each identity status, each identity dimension is presented as a standardized z -score for ease of presentation.

Based on the standardized scores for the five identity dimensions within each cluster, and following the labels used by Luyckx et al. (2008a, b, c) and Meeus et al. (2010), we named the clusters Achievement ($n = 1,560$), Diffused Diffusion ($n = 1,278$), Carefree Diffusion ($n = 1,061$), Searching Moratorium ($n = 1,225$), Foreclosure ($n = 1,215$), and Undifferentiated ($n = 2,685$). The Achieved cluster was above the mean on exploration in breadth, exploration in depth, commitment making, and identification with commitment, but below the mean on ruminative exploration. The Diffused Diffusion cluster was well below the mean on commitment making and identification with commitment and well above the mean on ruminative exploration, as would be expected. Exploration in breadth

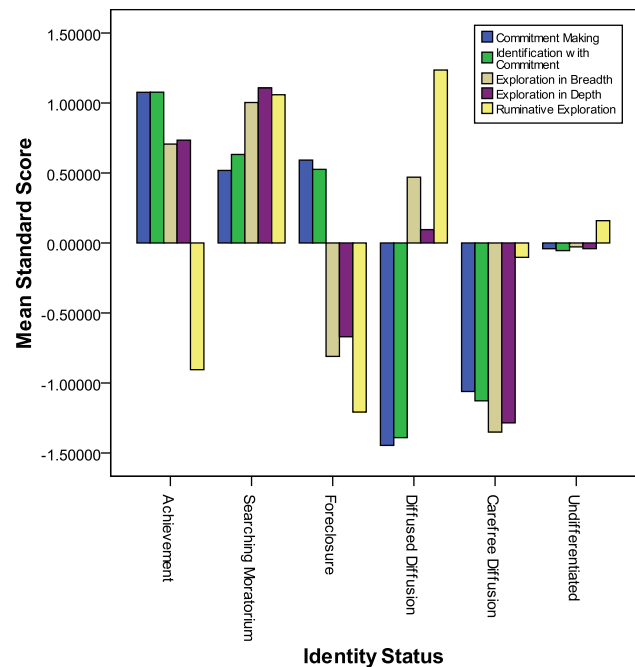


Fig. 1 Cluster solution

was also somewhat elevated within the Diffused Diffusion cluster, suggesting that these individuals do attempt to engage in some productive identity exploration (cf. Schwartz et al. 2005a). The Carefree Diffusion cluster was below the mean on all five identity processes, suggesting little interest in any kind of identity work. The Searching Moratorium cluster was approximately 1 SD above the mean on all three exploration dimensions, and somewhat elevated on commitment making and identification with commitment. The profile of this status appears similar to what Meeus et al. (2010; Crocetti et al. 2008a) have called “reconsideration of commitment,” which refers to exploring in breadth while still maintaining a set of commitments—although the individual is likely thinking of discarding these current commitments in favor of exploring new possibilities. The Foreclosed cluster was high on both commitment dimensions and low on all three exploration dimensions, suggesting a rigid and strongly held identity structure. The Undifferentiated cluster was very close to the sample mean on all five identity processes, resembling what Adams et al. (1989) labeled “low profile moratorium” and used to classify cases that could not be safely classified into one of the other statuses. By and large, the present cluster solution was similar to that reported by Luyckx et al. (2008a, b, c).

Validating the Cluster Solution: Identity Synthesis and Confusion by Cluster Membership

Our next step of analysis was to validate the cluster solution by examining the extent to which the clusters would be

Table 1 Mean standardized scores for the DIDS variables by identity status cluster

Variable	Achievement (<i>n</i> = 1,560)	Searching moratorium (<i>n</i> = 1,225)	Foreclosure (<i>n</i> = 1,215)	Diffused diffusion (<i>n</i> = 1,278)	Carefree diffusion (<i>n</i> = 1,061)	Undifferentiated (<i>n</i> = 2,685)
Exploration in breadth	0.71 (0.57)	1.00 (0.43)	−0.81 (0.73)	0.47 (0.70)	−1.35 (0.75)	−0.03 (0.55)
Exploration in depth	0.73 (0.64)	1.11 (0.51)	−0.67 (0.75)	0.10 (0.87)	−1.29 (0.72)	−0.04 (0.51)
Commitment making	1.08 (0.40)	0.52 (0.64)	0.59 (0.51)	−1.45 (0.73)	−1.06 (0.64)	−0.04 (0.44)
Identification with commitment	1.08 (0.35)	0.63 (0.58)	0.53 (0.53)	−1.39 (0.77)	−1.13 (0.63)	−0.05 (0.43)
Ruminative exploration	−0.91 (0.62)	1.06 (0.59)	−1.21 (0.54)	1.24 (0.52)	−0.10 (0.60)	0.16 (0.51)

Standard deviations are in parentheses

Table 2 Identity synthesis and confusion by identity status cluster

Variable	Achievement (<i>n</i> = 1,560)	Searching moratorium (<i>n</i> = 1,225)	Foreclosure (<i>n</i> = 1,215)	Diffused diffusion (<i>n</i> = 1,278)	Carefree diffusion (<i>n</i> = 1,061)	Undifferentiated (<i>n</i> = 2,685)	<i>F</i> ratio	η^2
Identity synthesis	27.16 _a (2.76)	25.42 _b (3.27)	25.46 _b (2.96)	20.27 _c (3.84)	19.21 _d (3.51)	23.09 _e (2.58)	1,386.32***	.44
Identity confusion	12.08 _a (3.53)	18.18 _b (5.24)	12.05 _a (3.20)	20.95 _c (3.83)	17.61 _b (3.39)	16.69 _d (3.67)	1,081.55***	.38

Pairwise comparisons were conducted using the sandwich estimator (Kauermann and Carroll 2001) to adjust for multilevel nesting. Overall *F* ratios and effect sizes are not adjusted for nesting

Within each row, means with the same subscript do not differ significantly at *p* < .01

*** *p* < .001

differentiated by identity synthesis and confusion. A multivariate analysis of variance (MANOVA) on identity synthesis and confusion by cluster yielded a significant multivariate effect, Wilks' $\lambda = .42$, $F(10, 18,036) = 987.49$, $p < .001$, $\eta^2 = .34$. Both univariate effects were significant: identity synthesis, $F(5, 9,018) = 1,386.32$, $p < .001$, $\eta^2 = .44$; and identity confusion, $F(5, 9,018) = 1,081.55$, $p < .001$, $\eta^2 = .38$. As shown in Table 2, pairwise comparisons conducted using the sandwich estimator indicated that all six statuses differed significantly from one another on identity synthesis, with Achievement scoring highest and Carefree Diffusion scoring lowest. Identity confusion was highest in Diffused Diffusion and lowest in Foreclosure and Achievement (which were not significantly different from one another on this variable). These patterns of differences are highly consistent with identity status theory (see Kroger and Marcia 2011; Marcia 1993, for reviews), and as a result, we concluded that the current cluster solution possessed adequate concurrent validity.

Gender and Ethnic Differences in Identity Status Clusters

Having established concurrent validity and replicability of the cluster solution, we next conducted chi-square analysis to examine the extent to which the clusters would differ by gender and ethnicity. Significant gender differences emerged, $\chi^2(5, N = 7,914) = 76.81$, $p < .001$, $\phi = .10$. A greater percentage of women (18.3%) than men (14.5%)

were classified as Achieved, whereas a greater proportion of men (19.5%) than women (12.2%) were classified into the Carefree Diffusion status. Using only the four largest ethnic groups in the sample, and combining East Asians and South Asians into a single Asian group, significant ethnic differences emerged in cluster membership, $\chi^2(15, N = 8,637) = 149.24$, $p < .001$, $\phi = .13$. Pairwise comparisons conducted using the sandwich estimator indicated that, with regard to percentages within each ethnic group, Asians were least likely (10.4%) to be Achieved and most likely to be classified into Diffused Diffusion; and Blacks were least likely (8.8%) to be classified into Carefree Diffusion. No significant differences emerged involving Whites or Hispanics.

Positive Psychosocial Functioning Variables by Identity Status Cluster

A MANOVA on the positive psychological functioning variables produced a significant multivariate effect of cluster membership, Wilks' $\lambda = .53$, $F(35, 36,285) = 167.25$, $p < .001$, $\eta^2 = .12$. We conducted univariate tests, and pairwise comparisons conducted using the sandwich estimator, to determine which statuses scored highest, and which scored lowest, on each variable. The full patterns of scores and pairwise differences are displayed in Table 3 and in Fig. 2. Results indicated that self-esteem was highest in Achievement and Foreclosure and lowest in the two diffused statuses; internal locus of control was highest in

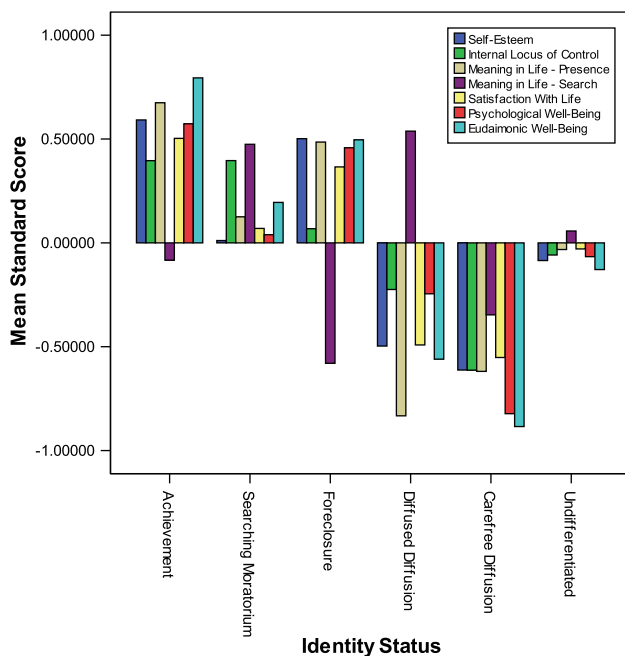
Table 3 Positive psychosocial functioning variables by identity status cluster

Variable	Achievement (<i>n</i> = 1,560)	Searching moratorium (<i>n</i> = 1,225)	Foreclosure (<i>n</i> = 1,215)	Diffused diffusion (<i>n</i> = 1,278)	Carefree diffusion (<i>n</i> = 1,061)	Undifferentiated (<i>n</i> = 2,685)	<i>F</i> ratio	η^2
Self-esteem	41.85 _a (6.46)	37.71 _b (7.12)	41.22 _c (6.04)	34.20 _d (6.07)	33.34 _e (5.97)	37.07 _f (7.23)	377.31***	.18
Internal locus of control	18.70 _a (2.95)	18.70 _a (3.30)	17.71 _b (2.90)	16.86 _c (2.59)	15.65 _d (2.81)	17.32 _e (2.86)	207.22***	.11
Meaning in life (search)	19.56 _a (5.56)	22.56 _b (5.00)	16.86 _c (5.03)	22.90 _b (4.54)	18.13 _d (5.42)	20.30 _e (4.74)	253.87***	.13
Meaning in life (presence)	24.27 _a (4.02)	21.46 _b (4.68)	23.30 _c (4.42)	16.64 _d (4.07)	17.75 _e (4.03)	20.68 _f (5.16)	582.56***	.25
Satisfaction with life	23.16 _a (4.52)	20.83 _b (5.31)	22.44 _c (5.39)	17.89 _d (4.61)	17.59 _d (4.68)	20.36 _b (5.36)	265.53***	.13
Psychological well-being	86.17 _a (9.36)	79.96 _b (11.16)	84.91 _c (11.61)	76.68 _d (10.69)	69.94 _e (9.71)	78.75 _f (9.71)	394.24***	.19
Eudaimonic well-being	83.54 _a (9.88)	77.18 _b (9.52)	80.49 _c (7.64)	69.32 _d (8.16)	65.83 _e (9.25)	73.80 _f (8.22)	739.94***	.30

Pairwise comparisons were conducted using the sandwich estimator (Kauermann and Carroll 2001) to adjust for multilevel nesting. Overall *F* ratios and effect sizes are not adjusted for nesting

Within each row, means with the same subscript do not differ significantly at $p < .01$

*** $p < .001$

**Fig. 2** Positive psychosocial functioning by identity status cluster

Achievement and Searching Moratorium and lowest in Carefree Diffusion; search for meaning in life was highest in Diffused Diffusion and lowest in Foreclosure; and presence of meaning in life was highest in Achievement and Foreclosure and lowest in Diffused Diffusion. Among the well-being variables, satisfaction with life was highest in Achievement and Foreclosure and lowest in the two diffusion statuses; psychological well-being was highest in Achievement and Foreclosure and lowest in Carefree Diffusion; and eudaimonic well-being was highest in Achievement and lowest in Carefree Diffusion. Further

equating the Undifferentiated status with Adams et al.'s (1989) low profile moratorium, which was conceptualized as a variant of moratorium, the Undifferentiated and Searching Moratorium statuses were quite similar on most of the positive psychosocial functioning variables.

Negative Psychosocial Functioning Variables by Identity Status Cluster

A MANOVA on the negative psychosocial functioning variables yielded a significant multivariate effect, Wilks' $\lambda = .82$, $F(30, 36,054) = 61.48$, $p < .001$, $\eta^2 = .04$. Univariate effects (see Table 4; Fig. 3) were strongest for the internalizing scales and for rule breaking, and weaker for social and physical aggression. Pairwise comparisons were conducted using the sandwich estimator. On depressive symptoms and general anxiety, the two diffused statuses and Searching Moratorium scored highest, and Foreclosure lowest. On social anxiety, the two diffused statuses scored highest, and Foreclosure and Achievement scored lowest. For all three externalizing scales (rule breaking, social aggression, and physical aggression), Carefree Diffusion scored highest, and Foreclosure and Achievement scored lowest.

Health-Compromising Behaviors by Identity Status Cluster

Hazardous Alcohol Use

An analysis of variance (ANOVA) on AUDIT scores by identity status cluster was significant only at the .05 level (likely because of sample size), and was associated with a trivial effect size ($\eta^2 = .01$). This effect was not considered meaningful.

Table 4 Negative psychosocial functioning variables by cluster

Variable	Achievement (n = 1,560)	Searching moratorium (n = 1,225)	Foreclosure (n = 1,215)	Diffused diffusion (n = 1,278)	Carefree diffusion (n = 1,061)	Undifferentiated (n = 2,685)	F ratio	η^2
Depression	51.19 _a (11.84)	59.28 _b (14.36)	49.29 _c (10.41)	57.33 _d (11.19)	55.97 _e (10.68)	55.56 _e (10.97)	136.21***	.07
General anxiety	36.60 _a (15.29)	46.28 _b (17.99)	34.80 _c (13.24)	45.13 _b (15.21)	45.39 _b (14.16)	42.52 _d (15.04)	134.27***	.07
Social anxiety	44.26 _a (14.12)	51.53 _b (15.77)	44.17 _a (12.60)	54.96 _c (14.12)	53.64 _c (11.28)	50.72 _b (12.82)	154.39***	.08
Rule breaking	15.88 _a (5.51)	19.09 _b (9.05)	15.75 _a (5.18)	17.44 _c (5.98)	22.34 _d (8.91)	18.26 _b (7.48)	147.06***	.08
Social aggression	23.77 _a (7.44)	26.81 _b (9.03)	23.14 _a (7.42)	25.70 _c (7.64)	26.86 _b (7.65)	25.56 _b (7.63)	50.38***	.03
Physical aggression	17.74 _a (6.21)	20.94 _b (8.56)	17.48 _a (6.13)	19.29 _c (6.64)	22.61 _d (7.68)	19.80 _e (7.23)	94.81***	.05

Pairwise comparisons were conducted using the sandwich estimator (Kauermann and Carroll 2001) to adjust for multilevel nesting. Overall F ratios and effect sizes are not adjusted for nesting

Within each row, means with the same subscript do not differ significantly at $p < .01$

*** $p < .001$

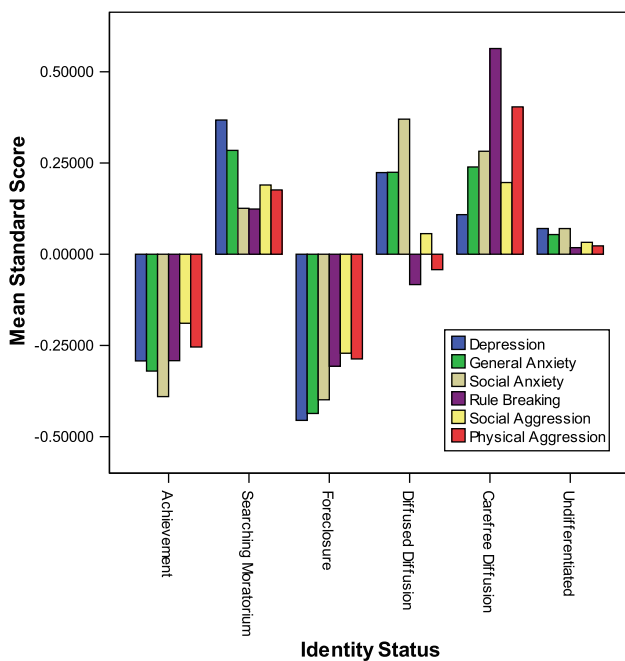


Fig. 3 Negative psychosocial functioning by identity status cluster

Illicit Drug Use, Unsafe Sexual Behavior, and Impaired Driving

To report results for the other health-compromising behaviors in the most interpretable fashion, we recoded each health-compromising behavior variable according to whether the participant had engaged in that behavior during the month prior to assessment. For the number of sexual partners, we dichotomized responses as two or fewer versus three or more. For each behavior, the percentages of participants reporting any engagement during the 30 days prior to assessment, by identity status cluster, are presented in Table 5. In many cases, the patterns of results were

highly similar across most of the behaviors within each category of health-compromising behaviors (see Figs. 4, 5, 6). Pairwise comparisons on rates of these health-compromising behaviors between and among statuses were conducted using the sandwich estimator. Because percentages, rather than means, were being compared, these analyses were parameterized as logistic comparisons. We also report an overall chi-square value and effect size (φ) for status differences in rates of each behavior.

Regarding illicit drug use, the Carefree Diffusion, Diffused Diffusion, and Searching Moratorium statuses were most likely to report smoking marijuana. For the more dangerous and less common substances—hard drugs, inhalants, injecting drugs, and misusing prescription drugs—the rates of use within the Carefree Diffusion status were 2–3 times larger than those in any of the other statuses, with the Diffused Diffusion, Searching Moratorium, and Undifferentiated statuses next (in varying sequences) in terms of prevalence. Foreclosed and Achieved participants reported the lowest prevalence rates for all of the illicit drug categories.

As an additional check into the role of gender in these results, we conducted Status \times Gender MANOVAs on each set of external correlates. In all cases, the interaction term was statistically significant but was associated with an effect size (η^2) below .01. As a result, we concluded that the associations of the identity statuses with identity synthesis and confusion, with positive and negative psychosocial functioning, and with health-compromising behaviors were not moderated by gender.

Discussion

We conducted the present study to estimate the viability of an empirically based identity status solution on a large, diverse sample of college-attending American emerging

Table 5 Rates of health-compromising behavior engagement by identity status cluster

Behavior	Achievement (n = 1,560)	Searching moratorium (n = 1,225)	Foreclosure (n = 1,215)	Diffused diffusion (n = 1,278)	Carefree diffusion (n = 1,061)	Undifferentiated (n = 2,685)	$\chi^2(5)$	ϕ
<i>Illicit drug use</i>								
Marijuana use	15.4% _a	20.6% _b	17.4% _a	26.4% _c	27.9% _c	20.3% _b	94.67***	.10
Hard drug use	2.2% _a	4.9% _b	2.9% _a	5.2% _b	12.3% _c	4.7% _b	173.67***	.14
Inhalant use	1.9% _a	4.2% _b	2.2% _a	3.3% _{a,b}	11.3% _c	4.3% _b	182.55***	.14
Injecting drug use	1.6% _a	3.9% _b	1.6% _a	1.5% _a	12.7% _c	4.2% _b	290.44***	.18
Prescription drug misuse	4.4% _a	6.8% _b	3.3% _a	6.9% _b	12.0% _c	6.2% _{a,b}	95.59***	.10
<i>Unsafe sexual behavior</i>								
Three or more sex partners	1.8% _a	3.0% _{a,b}	1.8% _a	2.9% _a	5.9% _b	3.0% _{a,b}	49.43***	.07
Oral sex	56.3%	55.8%	53.7%	51.1%	51.0%	53.1%	13.33	.04
Anal sex	8.2% _a	11.7% _b	6.0% _a	5.9% _a	17.8% _b	9.2% _a	142.19***	.13
Unprotected sex	39.9% _a	38.3% _a	39.8% _a	33.8% _a	37.7% _b	36.1% _b	15.40**	.04
Casual sex	7.2% _a	14.1% _b	5.9% _a	7.2% _a	23.6% _b	11.4% _b	274.43***	.17
Sex while intoxicated	23.7% _a	27.0% _a	23.0% _a	25.4% _a	28.5% _b	25.7% _a	14.15	.04
<i>Impaired driving</i>								
Driving while intoxicated	16.7% _a	25.5% _b	14.9% _a	19.7% _a	31.3% _b	22.6% _b	138.42***	.12
Riding with drunk driver	19.0% _a	27.3% _b	18.9% _a	28.2% _b	33.5% _b	24.9% _b	111.63***	.11

Pairwise comparisons were conducted using the sandwich estimator (Kauermann and Carroll 2001) to adjust for multilevel nesting. Overall chi-square values and effect sizes are not adjusted for nesting

Within each row, percentages with the same subscript do not differ significantly at $p < .01$

** $p < .01$; *** $p < .001$

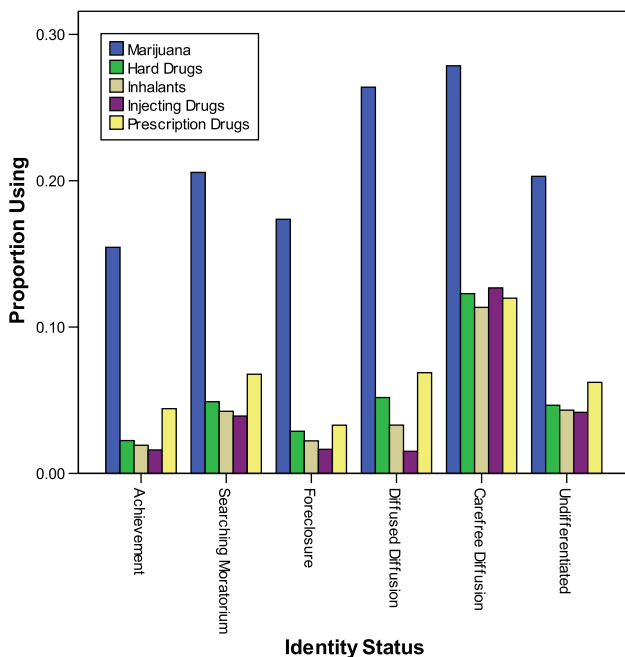


Fig. 4 Rates of illicit drug use by identity status cluster

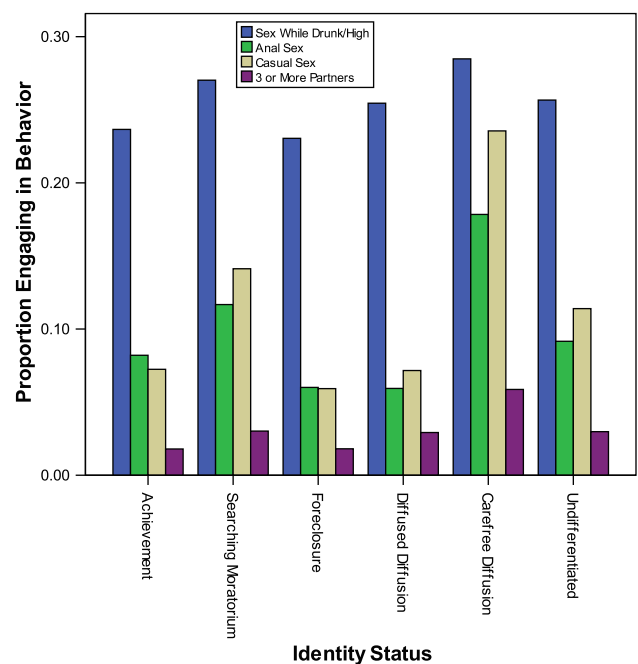


Fig. 5 Rates of sexual risk taking by identity status cluster

adults. As detailed in the introduction, validating empirically based status solutions—which were created and tested in Europe—in the United States is an important step

towards bolstering the validity of this model for use in the American context. The study also provided us with the opportunity to characterize the various identity

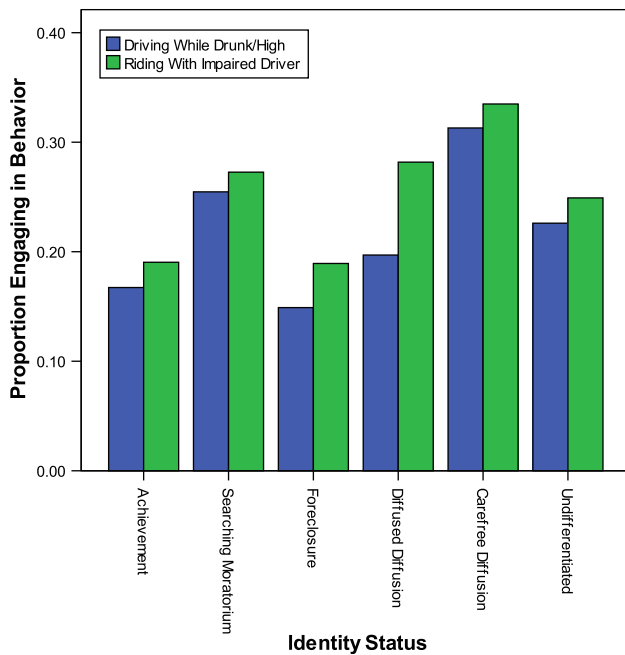


Fig. 6 Rates of impaired driving by identity status cluster

configurations that may appear in emerging-adult college students, as well as to map the psychosocial and public health implications of the identity status model. Much of the history of neo-Eriksonian identity research has focused on validating the statuses with regard to theoretically salient correlates such as personality profiles, coping styles, and other developmental processes (Schwartz 2001). Less attention has been paid to the well-being, internalizing, externalizing, and health-compromising behaviors that may or may not accompany each status (Schwartz 2005). For neo-Eriksonian identity theory and research to fulfill the applied and public health promise that Erikson (1950, 1968) proposed, and for identity to be fully acknowledged as one of the most important developmental tasks of emerging adulthood (Arnett 2000, 2006; Côté 2000; Côté and Levine 2002), research on important real-world outcomes is essential.

Validation and Profiles of the Cluster Solution

Structure of the Cluster Solution

Despite well-documented differences in means for identity processes (e.g., Schwartz et al. 2006) and in identity status distributions (e.g., Waterman 1999b) between American and European samples, the *structure* of the status model—that is, the number of status clusters extracted, and their profiles in terms of scores on the clustering variables—were strongly parallel between the present American sample and prior European samples (cf. Luyckx et al. 2005;

Luyckx et al. 2008a, b, c). As Erikson postulated, the task of identity development appears to be structured similarly across Western cultural contexts. The identity status model, both as originally proposed by Marcia (1966, 1980) and as empirically derived in the present study and in recent European research (Crocetti et al. 2008; Luyckx et al. 2005, 2008a, b, c), thus appears well suited for describing the patterns of identity development in both North American and European emerging adults.

The clusters that emerged are quite similar to those extracted by Luyckx et al. (2008a, b, c, e). Specifically, clusters emerged for foreclosure, achievement, and two types of diffusion, along with a variant of moratorium and an undifferentiated status similar to what Adams et al. (1989) have labeled as “low profile moratorium.” It should be noted, however, that the moratorium status that emerged in our results was more similar to the “searching moratorium” status reported by Meeus et al. (2010) than to the classical moratorium status proposed by Marcia and obtained by Luyckx et al. (2008a, b, c). Specifically, individuals in this moratorium status appeared to be exploring while retaining at least some of their prior commitments, whereas Marcia’s moratorium status (as well as the moratorium status found by Luyckx et al. 2005, 2008) would likely involve high levels of all three exploration processes and comparatively low scores on the two commitment processes. As Meeus et al. (2010) have found, the Searching Moratorium entails a willingness to change one’s existing commitments—regardless of whether or not these commitments have actually been suspended or discarded. Nonetheless, the similarity of the current clusters to those obtained by Luyckx et al. (2008a, b, c), along with the high internal consistency coefficients for the identity dimensions, speaks to the viability of the clusters obtained in the present study.

It is worthy of note that nearly a third of the sample was classified into the Undifferentiated status. Although this number might seem disproportionately high, it is actually considerably *lower* than the corresponding percentages obtained in studies using Adams et al.’s (1989) Extended Objective Measure of Ego Identity Status (EOM-EIS). The original scoring criteria for the EOM-EIS indicated that only individuals whose scores on continuous measures of the four identity statuses were all more than one standard deviation away from their respective sample means could be classified into one of Marcia’s original statuses; the remainder would be classified into an undifferentiated status, low profile moratorium. In two studies conducted by Jones and colleagues (Jones et al. 1994; Jones and Hartmann 1988) using the EOM-EIS, more than half of the sample was classified as undifferentiated, and less than half of participants were classified into one of Marcia’s original statuses.

Cluster-analytic methods, however, do not require using “if-then” methods with multiple scales to assign

participants to identity statuses. Indeed, in emerging adulthood, some individuals may evidence characteristics of more than one identity status (Pastorino et al. 1997), such as exploring career issues while remaining foreclosed in other life domains; and other individuals may be transitioning from one status into another (cf. Meeus et al. 2010). These individuals cannot be safely categorized into one of the original identity statuses and are therefore classified as undifferentiated. The proportion of undifferentiated individuals in the present sample is equivalent to that found in the Belgian college sample reported by Luyckx et al. (2008a, b, c), also using a cluster-analytic method of deriving and assigning identity statuses. It is likely, then, that the representation of undifferentiated individuals in the present sample is more accurate than the larger percentages found in earlier studies.

Validation with Eriksonian Measures

The association of the cluster solution with identity synthesis and confusion—direct measures of Erikson’s theory—indicated that these identity statuses mapped well onto Erikson’s original identity dimension. As would be expected, the Achieved status was highest on identity synthesis. Achieved individuals, who have explored different options, made commitments, considered the personal significance of these commitments, and integrated these commitments into their overall sense of self (Luyckx et al. 2006b), should have a firm but flexible self-definition. Foreclosed individuals, who maintain strong commitments but have not explored options in breadth (or explored their commitments in depth), scored somewhat lower than Achievers on identity synthesis. Similarly, individuals in Searching Moratorium scored only slightly lower than Foreclosed individuals on identity synthesis, possibly because the moratorium individuals in this sample did maintain some degree of commitment while they were sorting through other potential alternatives (cf. Meeus et al. 2010). Foreclosed and Achieved individuals, who both maintain strong commitments, scored lowest on identity confusion.

Individuals in the two diffused statuses scored lowest on identity synthesis, with the Carefree Diffusion status scoring lower than the Diffused Diffusion status. Likewise, individuals in Carefree Diffusion, like those in the Searching Moratorium, reported elevated levels of identity confusion compared to the other statuses. Given that individuals in moratorium must discard at least some of their current commitments so that they can explore new options (Kidwell et al. 1995; Meeus 1996), the discarding or suspending of commitments may induce some confusion (Schwartz et al. 2009b). Similarly, Carefree Diffused individuals appear to be largely uninterested in identity issues,

and the resulting lack of commitments may create confusion. Diffused Diffusion individuals do appear to engage in some identity work, albeit a ruminative and counterproductive form of exploration that is linked with internalizing symptoms (Luyckx et al. 2008a, b, c, e). Although the Diffused Diffusion cluster was above the sample mean on exploration in breadth, it is this haphazardness that identifies this cluster as diffusion rather than as moratorium. These patterns of differences across status clusters on identity synthesis and confusion are strongly consistent with identity status theory (Marcia 1966, 1980) and with Erikson’s (1950, 1968) conception of the identity stage.

Associations with Positive and Negative Psychosocial Functioning

We evaluated the identity status clusters vis-à-vis an array of positive and negative psychosocial functioning measures. Not surprisingly, the two diffused statuses scored lowest on self-esteem, internal locus of control, and all three forms of well-being (satisfaction with life, psychological well-being, and eudaimonic well-being). Diffused-Diffusion participants were more likely to search for meaning in life, but tended to report lower levels of meaning in life, compared to their Carefree-Diffusion counterparts. This suggests, again, that the diffused status can be subdivided into those individuals who are actively trying to develop a sense of self (but are not able to explore systematically or coherently) and those who are not interested in identity or self-definitional issues (cf. Archer and Waterman 1990; Marcia 1989; Schwartz 2001).

However, important differences emerged between the two diffusion statuses on negative psychosocial functioning. These statuses were not significantly different on internalizing symptoms—both were comparatively high on depression, general anxiety, and social anxiety—but the Carefree Diffusion status scored highest on scales indexing externalizing problems. Whereas Luyckx et al. (2005, 2008) characterized this status as happy to be uncommitted and labeled them as “Carefree Diffusions,” the present results suggest that these individuals may have antisocial tendencies—perhaps associated with an “I don’t care” attitude. Given these antisocial tendencies, it is not surprising that men were more heavily represented in the Carefree Diffusion status compared to the other statuses. Although the “carefree diffusion” label has been established in the literature, the term “alienated diffusion” might actually be more appropriate for this status.

Achieved individuals scored highest on all of the positive psychosocial functioning indices. Individuals in the Achieved and Foreclosed statuses scored equivalently on measures of general well-being, whereas Achievers scored significantly higher than Foreclosures on measures of life

purpose (meaning in life and eudaimonic well-being). This suggests that high levels of commitment making are associated with feelings of satisfaction and contentment with oneself and with one's life (cf. Luyckx et al. 2008b; Meeus et al. 1999; Schwartz 2007), but that individuals who explore before making commitments may be most likely to ascribe meaning to their lives. Foreclosure, in which only one alternative is seriously considered, may be less likely to involve self-discovery and a sense of personal meaning. At the same time, however, Foreclosed individuals were significantly lower than Achievers on symptoms of general anxiety and depression, perhaps suggesting that the search for an individualized sense of self may also create some distress. It is also possible that the defensiveness often observed in Foreclosed individuals (Kroger and Marcia 2011) may be associated with unwillingness to report internalizing symptoms. In any case, the present results suggest that the Foreclosed and Achieved statuses may be more empirically distinguishable than has been suggested in earlier identity status studies.

Interestingly, the Searching Moratorium and Undifferentiated statuses were generally similar on many of the positive well-being indices. In line with previous research (Crocetti et al. 2008b; Luyckx et al. 2008a, b, c), however, individuals in Searching Moratorium generally scored somewhat higher on these scales. It is noteworthy, however, that participants in the Searching Moratorium status also scored higher on depression and general anxiety compared to those in the Undifferentiated status. The increased ruminative exploration in the Searching Moratorium status, relative to the Undifferentiated status, may carry the association with these increased levels of internalizing symptoms (cf. Luyckx et al. 2008a, b, c, e). Even though the Searching Moratorium status likely involves less suspension of commitments compared to the classical moratorium status proposed by Marcia (cf. Meeus et al. 2010), it is nonetheless associated with some degree of uncertainty.

Another important observation regarding the Searching Moratorium status is that it clearly reflects the “double-edged sword” of exploration in breadth. Individuals in this status report fairly high levels of emerging self-knowledge—especially meaning in life and eudaimonic well-being—which may explain their somewhat elevated commitment scores. However, these individuals' scores on identity confusion, depression, general anxiety, and social and physical aggression are also somewhat high. These patterns suggest that developing a sense of self involves entering into a state of confusion that is likely to bring a considerable amount of discomfort. As Meeus et al. (2010) have found, this discomfort may prevent some individuals from completing the identity exploration process—and such individuals may be likely to return to diffusion or foreclosure.

Associations with Health-Compromising Behaviors

Foreclosure and Achievement tended to be associated with the lowest levels of most of the health-compromising behaviors, especially illicit drug use and impaired driving. This suggests that making and identifying with commitments may be protective against engagement in hazardous behavior (cf. Schwartz et al. 2010). However, the health-compromising behavior analyses provided further evidence for the antisocial tendencies of the Carefree Diffusion status. Self-reported rates of dangerous drug use (hard drugs, inhalants, injecting drugs, and misuse of prescription drugs) were between two and three times greater in the Carefree Diffusion status than in any of the other statuses. Compared to the other statuses, Carefree-Diffuse participants were also significantly more likely to ride with a drunk driver, to have sexual relations with a stranger, and to engage in anal sex. The Diffused Diffusion status, on the other hand, was not generally different from the Searching Moratorium and Undifferentiated statuses on most of the health-compromising behavior indices. Therefore, failing to engage in any meaningful identity activity—which defines the Carefree Diffusion status and differentiates it from Diffused Diffusion (in which some exploration, albeit ruminative and nonproductive, is taking place)—may pose serious health hazards that can place the person at risk for serious injury, illness, or death.

It appears from these results that engaging in *no* identity activity is associated with the highest likelihood of engaging in many health-compromising behaviors. Indeed, lack of consideration for the future may predispose Carefree-Diffused individuals toward present-oriented, hedonistic, and dangerous behaviors (e.g., Luyckx et al. 2010a; Zimbardo et al. 1997). Engaging in productive identity *exploration* is associated with somewhat lower, but still elevated, likelihood of risk behavior participation. Being *committed* to identity alternatives is associated with the lowest likelihood of risk behaviors. The effects of commitment on health-compromising behaviors may occur for different reasons in foreclosure versus achievement: conformity and obedience in foreclosed individuals versus advanced moral reasoning and decision making in achieved individuals (Krettenauer, 2005). Nonetheless, it appears that either type of commitment (foreclosed or achieved) is sufficient to protect against health-compromising behaviors.

Implications for Emerging Adult and College Student Development

Beyond providing supportive evidence for the identity cluster solution in an American sample, the present results may also be informative regarding identity development in emerging adults in general. Most broadly, the results

largely support Arnett's (2000, 2006) contention that emerging adulthood represents an extension of Erikson's (1950) psychosocial moratorium, which refers to time that is "set aside" for young people to develop a sense of identity. Additionally, the present results suggest that emerging adulthood presents different degrees of difficulty for different groups of individuals (cf. Schwartz et al. 2005a), and that emerging adults are a heterogeneous group. Indeed, some of the individuals in the present sample appeared to be experiencing few difficulties with identity development, as evidenced by high self-esteem and well-being, low levels of internalizing and externalizing symptoms, and little or no engagement in health-compromising behavior. Other individuals, on the other hand, experienced considerable difficulties developing a sense of identity (Côté 2000). The present results therefore provide support for Arnett's (2007) contention that emerging adulthood is a time of opportunity, as well as for Côté's (2000) argument that this time of life may be challenging for individuals who lack the necessary agency and support to navigate the unstructured Western transition to adulthood.

Moreover, the correlates of the various statuses appear to be similar across Western contexts and suggest that diffusion represents a maladaptive response to the task of developing a sense of identity in emerging adulthood, whereas achievement represents the most self-directed and favorably adjusted identity configuration in emerging adulthood. Indeed, in Western societies, albeit to varying degrees, young people are challenged with finding their own way into adulthood (Arnett 2000, 2006; Côté and Bynner 2008). Those who adopt a self-directed approach to identity development are much more likely to be able to handle the shifting nature of career and relationship roles and commitments in the twenty-first century (Vignoles et al. 2011). In contrast, although foreclosed individuals appear to be well-adjusted, their rigidly held commitments and lack of flexibility may not hold up in the face of changing life circumstances (Kroger and Marcia 2011). This appears to be the case both in North America (Côté and Levine 2002) and in Europe (Fadjukoff et al. 2005). In our results, the increased internal locus of control, eudaimonic well-being, and meaning in life in achieved versus foreclosed individuals suggests a greater ability to use internal standards to adapt when necessary. Although foreclosed and achieved commitments provide similar degrees of contentment and self-esteem, achieved commitments provide a sense of purpose, direction, and autonomy that may not be present in foreclosed individuals. Achievement may therefore be a more "adaptive" response to the challenges of emerging adulthood in an unstructured Western society.

Similarly, compared to those classified into the foreclosed and achieved statuses, individuals classified as

undifferentiated, into searching moratorium, and into the two types of diffusion are all likely to be relatively uncommitted. However, these statuses are characterized by sharp differences in developmental "adequacy." Individuals in searching moratorium may be making their way toward achievement (Meeus et al. 2010), and individuals in the undifferentiated status may be making progress in some identity domains (cf. Pastorino et al. 1997). Emerging adults in the two diffused statuses are likely to be those who require the most help in transitioning successfully to full adulthood. Specifically, individuals in carefree diffusion likely correspond to what Côté (2000) has labeled as "youthhood"—a perpetually uncommitted lifestyle characterized by a purposeful reluctance to settle down and enact adult commitments. Youthhood represents a desire to extend the emerging adult life stage well beyond its normative boundaries—sometimes into the 30s and 40s (Côté 2006). On the other hand, individuals in diffused diffusion are struggling to make their way into adulthood but are unable to explore alternatives in a systematic way that would successfully facilitate the establishment of self-directed commitments. Based on the present findings, carefree-diffuse individuals may be *unwilling* to give up their youthful, risky lifestyles and settle down, whereas diffused-diffuse individuals may be *unable* to take the steps necessary to enact adult commitments.

It might therefore be stated that achieved and foreclosed individuals are in the most favorable position to move into adulthood—with the caveat that foreclosed commitments may not be sustainable or sufficiently adaptable in the event that one's life circumstances change suddenly and unexpectedly. Individuals in the searching moratorium and undifferentiated statuses may be preparing for adulthood, depending on whether their exploration is productive and leads to commitment making or whether the exploration is aborted prematurely. Indeed, Meeus et al. (2010), in a longitudinal study of Dutch adolescents, found that individuals in moratorium were equally likely to regress into diffusion or foreclosure as they were to progress into achievement. Individuals in the two diffused statuses appear to be the most worrisome, albeit for different reasons, and are not well prepared to transition into adult roles.

The university context can be both helpful and problematic in terms of preparing young people for adulthood. The constant flow of new ideas, social relationships, and potential career paths offered within the university context is likely to prompt identity exploration in some individuals (Montgomery and Côté 2003) but to prompt confusion in others (Luyckx et al. 2008b). Individuals who possess the necessary agency and self-direction to find their own way in an unstructured environment are likely to thrive in the unstructured university environment (and in the emerging

life stage in general; Schwartz et al. 2005a). However, those individuals who are overwhelmed by the array of available alternatives may find themselves exhibiting internalizing symptoms and low levels of well-being. Individuals who are not interested in exploring or committing, and who may have entered university to avoid having to face the challenges of adulthood, may be most at risk for externalizing problems and health-compromising behaviors. Indeed, some of these individuals may have antisocial tendencies that may be masked as a carefree lifestyle.

For students who are psychologically unable to capitalize on the opportunities presented by the university context, intervention programs may be necessary to help facilitate the agency and exploration necessary to identify and consider potential adult roles and commitments (Schwartz et al. 2005b). The university environment may not be equipped to help those who are unwilling to leave their carefree and risky lifestyles behind, given the purposeful engagement that is required to complete a degree and to obtain the skills and knowledge necessary to compete successfully in the labor market (cf. Côté 2002). The university environment may, however, be well equipped to facilitate continued exploration and growth among those individuals who are already engaged in some degree of purposeful exploration. Although active consideration of multiple alternatives is often accompanied by confusion, disequilibrium, and internalizing symptoms (Crocetti et al. 2008; Schwartz et al. 2009b), these symptoms are likely temporary and may be alleviated when commitments are enacted. Additionally, some participation in health-compromising behaviors may be normative among emerging adults (Arnett 2005)—but, again, making commitments is likely to reduce the person's extent of engagement in these behaviors (Schwartz et al. 2010). So the role of the university context is to provide opportunities for proactive identity exploration, and to offer services to help facilitate commitment making and evaluation in individuals who are willing to commit but are struggling to do so (Montgomery and Côté 2003).

Because the committed statuses were associated with the lowest levels of externalizing and health-compromising behavior, facilitating commitment making and evaluation is likely to help reduce risk for these personally and socially damaging behaviors. Promoting identity development and commitment making may therefore serve as a preventive strategy. However, such a strategy is least likely to be successful with carefree-diffuse individuals, who do not appear interested in exploring or committing to identity alternatives. Indeed, carefree-diffuse individuals are likely to require a different type of intervention altogether. In the present results, they were most likely to violate rules and to commit acts of physical aggression, and they reported the

highest levels of many of the highest-risk behaviors, including dangerous drug use, anal and casual sex, and impaired driving. Treatment-based interventions designed for individuals with externalizing or drug problems, such as those based on motivational or cognitive-behavioral principles (Carroll et al. 2006), may be required to reduce levels of health-compromising behavior among carefree-diffused individuals.

Limitations

The present results should be interpreted in light of several limitations. First, although the sample was fairly large and was recruited from a number of different sites around the United States, the sample was not randomly selected. Participants entered the study of their own volition in exchange for extra course credit or to satisfy a research requirement. Moreover, because we have no information about individuals from these same classes who chose not to participate, we do not know how representative (or not) the sample was of the classes from which participants were recruited (cf. Padilla-Walker et al. 2005). Second, and more generally, a college student sample does not include emerging adults who do not seek post-secondary education, a group often referred to as the “forgotten half” (Halperin 2001). Recent research conducted in Belgium suggests that college students are more likely than their working counterparts to engage in ruminative exploration, and less likely to have made or identified with commitments (Luyckx et al. 2008b). College samples are also likely to be disproportionately female, as was the case in the present study. As a result, it is necessary to replicate the current findings with gender-balanced samples of American non-student emerging adults. Third, the cross-sectional design used in the present study does not permit us to evaluate directionality in the associations tested. Although we proceeded from the assumption that identity processes and statuses preceded the psychosocial and risk outcomes, this cannot be evaluated empirically using the present dataset. What is most likely is that the associations of identity with psychosocial and risk variables are reciprocal (cf. Luyckx et al. 2010a, b). For example, committing to a set of alternatives might lead one to feel satisfied with one's life and to experience subjective and eudaimonic well-being, and in turn, these positive feelings might lead the person to maintain her/his commitments. These possibilities need to be examined in future research.

Conclusion

The present study has generated important knowledge concerning direct empirical support for the identity status

model and associations of identity with psychosocial and risk outcomes. The present findings also suggest that identity development may be characterized by similar processes and correlates in European and American emerging adults (cf. Waterman 1999b). This provides support for the cross-national generalizability (at least between Western countries) of Erikson's and Marcia's formulations. In terms of practical applicability, the present results underscore the importance of stimulating identity work in young people, especially those for whom identity does not appear to be important (Ferrer-Wreder et al. 2002; Forthun and Montgomery 2009). To promote well-being and self-discovery and to prevent antisocial activities and health compromising behaviors, it is important to stimulate identity exploration, commitment, or both. As suggested by Schwartz (2005), identity is therefore important in a number of ways, including theoretically, empirically, and for important public health outcomes. It is hoped that these results will stimulate more research and applied work on identity development, psychosocial functioning, and risk outcomes in young people. Such work is needed to better understand how identity underlies the transition to adulthood, how adaptive identity configurations can be promoted, and how maladaptive identity configurations can be avoided.

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