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Identity Statuses Based Upon Four Rather Than Two Identity Dimensions:

Extending and Refining Marcia's Paradigm

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## Abstract

Four identity dimensions (Commitment Making, Identification with Commitment, Exploration in Depth, and Exploration in Breadth) were used to derive identity statuses by means of cluster analysis in a sample of late adolescents. This strategy resulted in both a qualitative refinement and a quantitative extension of Marcia's (1966) model. Five clusters were retained. Four of those (the Achievement, Moratorium, Foreclosure, and Diffused Diffusion Cluster) bore a striking resemblance to Marcia's original identity statuses in terms of their definition and their associations with criterion variables. Adolescents in the fifth cluster, the Carefree Diffusion Cluster (low to moderate on both commitment dimensions and low on both exploration dimensions), scored as high as the two high Commitment Making clusters (i.e., the Achievement and Foreclosure Cluster) on several indicators of adjustment. Personality characteristics further differentiated these clusters in accordance with theory. The advantages of extending the identity status paradigm, through additional distinctions that pertain to both commitment and exploration, are discussed and practical implications are outlined.

## Introduction

The most important developmental task for adolescents is the formation of a stable identity (Erikson, 1968). Marcia's (1966) identity status paradigm is the most commonly used paradigm for research on identity formation (Schwartz, 2001). Marcia distinguishes between four prototypical ways of dealing with the identity crisis of late adolescence, referred to as identity statuses. These statuses are based upon the combination of two underlying dimensions, that is, exploration and commitment. Exploration refers to the adolescent's active questioning and weighing up of various identity alternatives. Commitment refers to the presence of strong convictions or choices. Adolescents who have arrived at clear commitments after exploring various alternatives are assigned to the Achievement Status. Adolescents in the Foreclosure Status also have made strong commitments but without going through a period of exploration. Adolescents in the Moratorium Status are exploring various alternatives without arriving at firm commitments. Finally, adolescents in the Diffusion Status also have not made any clear commitments. Moreover, they are not exploring thoroughly the different options at hand.

Inspired by authors such as Bosma (1985), Grotevant (1987), and Meeus (1996), Luyckx, Goossens, Soenens, et al. (in press) unpacked both commitment and exploration each into two dimensions. As a consequence, they distinguished between four distinct but interrelated identity dimensions. These identity dimensions were labeled Commitment Making, Identification with Commitment, Exploration in Breadth, and Exploration in Depth. Commitment Making refers to the making of choices. Identification with Commitment refers to the degree of identification with these choices. Exploration in Breadth refers to the gathering of information about different alternatives to guide the choices one makes. Finally, Exploration in Depth refers to the gathering of information about current choices to guide the maintenance and evaluation of these choices.

A focus on these continuous dimensions of commitment and exploration allows for a data-driven, descriptive approach to identity formation (Matteson, 1977). However, this line of research primarily deals with main effects of these separate dimensions (Luyckx, Goossens, Soenens, et al., in press). The status approach, on the other hand, deals with how these dimensions interact and how these different interactions relate to certain variables. The problem with the latter approach, however, is how these statuses are derived. The commonly used median-split procedure has major disadvantages (MacCallum et al., 2002) and only allows a theory-based approach.

The present study expanded and further differentiated the identity status paradigm in a number of ways (Archer, 1992; Goossens, 1995; Kroger, 1995). First, identity statuses were derived in a data-driven manner. Cluster analysis was found to be the most appropriate procedure to reach this objective. It is designed to discover classifications within complex data sets based on multivariate observations. Its purpose is to group participants into relatively homogeneous clusters in such a way that participants within one cluster have more in common than they do with participants assigned to other clusters (Gore, 2000). Cluster-analyses were performed both on the classical two identity dimensions (i.e., Commitment Making and Exploration in Breadth) and on the new model containing four identity dimensions (i.e., Commitment Making, Exploration in Breadth, Exploration in Depth, and Identification with Commitment). Both solutions were cross-tabulated in order to compare the old and the new approach to identity formation. Second, to discriminate between these empirically derived identity statuses, they were related to various components of adjustment and to two distinct personality characteristics, that is, Openness and Conscientiousness. Earlier research has demonstrated that Marcia's four identity statuses could be reliably differentiated on the basis of these criterion variables (Clancy & Dollinger, 1993; Marcia, 1980). Before discussing the recent advancements in the conceptualization of exploration and commitment in more detail, this research will be briefly summarized because it guided the formulation of hypotheses in the present study.

#### *External Validity of Marcia's Statuses*

Marcia (1980, 1993) reviewed the available research on the relationship between the statuses and adjustment. He concluded that adolescents in the Achievement Status, and to a lesser extent in the Foreclosure Status, showed the best profile of adjustment, followed by those in the Moratorium Status and, finally, the Diffusion Status. The latter two statuses were, as mentioned before, characterized by low commitment. It appears, therefore, that being high on commitment is the key to happiness. In sum, measures of adjustment and well-being were optimal to distinguish between high and low commitment statuses.

In addition to adjustment, it has been shown that adolescents in the four identity statuses can be reliably distinguished on the basis of personality characteristics such as Openness and Conscientiousness. Openness refers to the tolerance and exploration of the unfamiliar, and is characteristic of persons high in intellectual curiosity (McCrae, 1994). It has been hypothesized by a number of authors that this personality dimension would have a pronounced influence on

the exploration of alternatives in identity relevant domains (Berzonsky, 1990; Grotevant, 1987). Several studies indicated that Openness was low in the Foreclosure Status compared to the Moratorium Status and the Achievement Status, suggesting that Openness indeed distinguishes between the low and high exploration statuses. Confirming this idea, a number of studies have demonstrated that Openness was positively related to continuous measurements of exploration of alternatives as well as to measurements of an information-oriented identity style (Clancy & Dollinger, 1993; Dollinger, Leong, & Ulicni, 1996; Dollinger & Orf, 1991; Kroger & Green, 1996; Soenens, Duriez, et al., 2005).

Conscientiousness refers to the individual's degree of organization, persistence, and motivation in goal-directed behavior (McCrae & Costa, 1990). Therefore, it could be expected that it would have a pronounced influence on the making of commitments (Clancy & Dollinger, 1993). In line with this hypothesis, research has shown that adolescents in the Achievement Status and in the Foreclosure Status score higher on Conscientiousness than adolescents in the Moratorium Status and in the Diffusion Status (Clancy & Dollinger, 1993). Similarly, Conscientiousness has been found to relate positively to continuous measures of commitment (Clancy & Dollinger, 1993).

In sum, each status could be described by a unique pattern of associations with these variables. Individuals in the Achievement Status are characterized by high Openness, high Conscientiousness, and the highest scores on adjustment. Individuals in the Foreclosure Status are characterized by low Openness, high Conscientiousness, and high adjustment. Adolescents in the Moratorium Status display a moderate to high Openness and low Conscientiousness, and are not well adjusted. Adolescents in the Diffusion Status are characterized by low Openness, low Conscientiousness, and the lowest adjustment scores.

#### *Unpacking Commitment and Exploration Into Four Dimensions*

The present study made use of a recently developed identity formation model that encompasses four dimensions instead of the classical two. Bosma (1985) made a distinction between commitment and the extent to which one identifies with that commitment by means of exploratory factor analysis on the Groningen Identity Development Scale (GIDS). This distinction between commitment and identification with commitment, however, was not pursued in further empirical research and both dimensions were systematically labeled as commitment. The distinction between the two exploration dimensions dates back to the work of Grotevant (1987) and Matteson (1977). Initially, both exploration in-depth and exploration in-

breadth were viewed as part of one encompassing dimension of exploration guiding the formation of commitments (Grotevant & Cooper, 1985; Marcia & Archer, 1993). Meeus (1996) stated that they represent separate constructs, each having its own function (Meeus, Iedema, et al., 2002).

Only recently, these four identity dimensions were identified empirically within one and the same model (Luyckx, Goossens, Soenens, et al., in press). Using Confirmatory Factor Analysis (CFA), this model was shown to be superior to simpler models of identity formation. These dimensions had a different pattern of associations with criterion variables that proved theoretically meaningful. When controlling for the other three dimensions, Commitment Making was unrelated to adjustment and Identification with Commitment was related positively to adjustment (Luyckx, Goossens, Soenens, et al., in press). This indicated that the latter component was a more powerful determinant of adjustment than the mere fact of making a commitment (Grotevant, 1987). Again with similar controls, Exploration in Depth was related positively to and Exploration in Breadth negatively to various indicators of adjustment. Finally, Luyckx, Soenens, et al. (in press) demonstrated that Openness was a predictor of Exploration in Breadth. Conscientiousness, on the other hand, was a predictor of Commitment Making and Identification with Commitment.

### *Objectives of the Present Study*

The main purpose of the present study was to empirically derive identity statuses through cluster analysis using four instead of two identity dimensions. The present study also aimed at determining the external validity of these data-driven clusters. Based on the research reviewed in the preceding paragraphs, adolescents in the different identity statuses were expected to exhibit different patterns of adjustment and personality features. In addition to commonly used adjustment variables, such as self-esteem, depressive symptoms, and substance use, relatively understudied variables were included in the present study, such as social and academic adjustment at university. Two distinct personality characteristics, that is, Openness and Conscientiousness, were also measured to discriminate among the clusters.

Identity statuses were also derived through cluster-analysis using Marcia's two classical dimensions, that is, Commitment Making and Exploration in Breadth. These statuses were related to the same adjustment variables and personality indicators. Cross-tabulation of the "classical" status clusters (based upon Exploration in Breadth and Commitment Making) and the "new" status clusters (based upon Exploration in Breadth, Commitment Making,

Exploration in Depth, and Identification with Commitment) would generate important information with regard to what degree the various statuses – and their relationships with external variables – would differ depending on the identity framework one is using (i.e., four versus two identity dimensions). Thus, this cross-tabulation would explicitly demonstrate the usefulness of extending Marcia's paradigm with two new identity dimensions. Both a qualitative refinement and a quantitative extension of Marcia's paradigm were expected to emerge.

#### *Qualitative Refinement: Defining the Identity Statuses More Precisely*

Marcia's four statuses were expected to emerge through the use of cluster analysis on the four identity dimensions. Table 4.1 presents an overview of Marcia's statuses in terms of the two classical dimensions (Exploration in Breadth and Commitment Making) and the two new dimensions (Exploration in Depth and Identification with Commitment). First, the Achievement Status would be characterized by high Exploration in Breadth and high Commitment Making. Moreover, it would be characterized by high Exploration in Depth (Valde, 1996) and the highest Identification with Commitment. Second, the Foreclosure Status would be characterized by low Exploration in Breadth and high Commitment Making. Individuals in this status were expected to exhibit low to moderate Exploration in Depth due to their rigid approach to identity issues. They would identify themselves to a certain degree with their current commitments, although to a lesser extent than in the Achievement Status. Third, for the Moratorium Status, it was expected that especially Exploration in Breadth but not Exploration in Depth would be elevated. Individuals in this identity configuration experiment with various social roles and explore various ideologies without really focusing on one particular option. They would exhibit a low (to moderate) score on Commitment Making and Identification with Commitment due to the transitional nature of this identity configuration. Finally, the Diffusion Status as described in the paradigm of Marcia would be characterized by low to moderate Exploration in Breadth and low Commitment Making. These adolescents would also be characterized by low Exploration in Depth and the lowest Identification with Commitment.

Concerning the relationship between these four statuses and external variables, the Achievement Status, and to a lesser extent the Foreclosure Status, would be accompanied by the best pattern of adjustment due to their high score on Identification with Commitment (Grotevant, 1987). The Diffusion Status, and to a lesser extent the Moratorium Status, were expected to be accompanied by the poorest profile of adjustment. As mentioned before, the

Achievement Status, and to a lesser extent the Moratorium Status, would be characterized by high Openness. Whereas the former would be accompanied by high Conscientiousness, the latter would be associated with low Conscientiousness. Both the Foreclosure and the Diffusion Status would be characterized by low Openness. Again, whereas the former would be accompanied by high Conscientiousness, the latter would be associated with low Conscientiousness. In sum, each identity status cluster would be accompanied by a unique pattern of associations with these criterion variables.

Table 4.1

*Marcia's Statuses in Terms of two Classical and two new Dimensions*

Marcia's statuses	Achievement Status	Foreclosure Status	Moratorium Status	Diffusion Status
<b>Classical Dimensions</b>				
Exploration in Breadth	High	Low	High	Low to moderate
Commitment Making	High	High	Low to moderate	Low
<b>New Dimensions</b>				
Exploration in Depth	High	Low to moderate	Low to moderate	Low
Identification with Commitment	High	High	Low to moderate	Low

*Quantitative Refinement: Intra-Status Differentiations*

Several new statuses not included in the status paradigm but often described in the literature could also emerge. This literature on intra-status differentiations mainly focused on subgroups within the Diffusion Status and the Foreclosure Status but remained primarily a theoretical issue because of sheer lack of empirical research.

Within the Foreclosure Status, a distinction has been made between a firm and developmental approach to commitments (Archer & Waterman, 1990; Berzonsky, 1985; Kroger, 1995). This distinction delineated that individuals in the Foreclosure Status can differ significantly in their willingness to respond to changing environmental circumstances. In the former group, adolescents rigidly maintain to their beliefs and aspirations. In the latter group, however, the Foreclosure Status turns out to be a transient developmental phase (Berzonsky, 1985).



The most predominant intra-status differentiation, however, can be found within the Diffusion Status. Marcia (1976, 1989a) distinguished between the Diffused and Carefree Diffusion Status to indicate that there are both healthy and pathological aspects to this status (Waterman, 1992). He described the adolescent in the latter status as someone who is untroubled by the absence of strong commitments. Archer and Waterman (1990) made a distinction between similar identity subgroups in the Diffusion Status, that is, apathetic and commitment-avoiding individuals. Whereas the former display an “I don’t care” attitude to mask an underlying uncertainty or insecurity, the latter rather enjoy their current lack of commitments. Likewise, Berzonsky (1985) considered the same heterogeneity within the Diffusion Status. Some individuals may see their current lack of commitment as a hiatus (Diffused Diffusion), whereas others may be truly unconcerned about life (Carefree Diffusion).

If both subgroups would emerge as distinct clusters, it was expected that the Carefree Diffusion Cluster would be accompanied by a more adjusted profile than the Diffused Diffusion Cluster. In terms of the two personality characteristics, it was expected that the Carefree Diffusion Cluster would score as low as the Diffused Diffusion Cluster.

## Method

### *Participants and Procedure*

The sample consisted of 638 participants from the Faculty of Psychology and Educational Sciences from a large university in the Dutch-speaking part (Flanders) of Belgium. Seventy-three students refused to participate for reasons unknown. This resulted in a participation rate of approximately 89% ( $n = 565$ ). All participants were freshmen and a breakdown by gender yielded 482 women (85.3%) and 83 men (14.7%). In the Dutch-speaking part of Belgium, the female participation rate in Psychology and Educational Sciences for all universities combined is very high, that is, 79% (Goossens & Luyckx, in press). Apparently, in terms of gender, our sample was representative for the freshmen population who studied Psychology and Educational Sciences at this university, and for this student population in the Dutch-speaking part of Belgium.

All participants were Caucasian students with a middle-class background. Students from the department of Psychology participated during group sessions and received course credit for their participation. Following a detailed briefing in group, students from the department of Educational Sciences took the questionnaire home and were asked to return it as soon as possible. This data collection was part of a larger longitudinal study. Students were told that it

focused on identity development throughout adolescence, its predictors and consequences. Each student received a unique code to protect identity, and anonymity was guaranteed.

Mean age for the participating sample was 18 years and 8 months ( $SD = 7.6$  months) with a range from 17 years and 2 months to 22 years and 1 month, covering the entire range of late adolescence. Scale scores were computed when 80% of the items were completed. This resulted in 1.7% missing values at the level of the scale scores. These latter missing values were estimated with the EM-algorithm as found in SPSS 11.5.

### *Measures*

All measures were in Dutch, the native language of the participants.

*Commitment making and exploration in breadth.* The Ego Identity Process Questionnaire (EIPQ; Balistreri et al., 1995) was used to measure Commitment Making and Exploration in Breadth in the ideological (politics, religion, occupation, and value-orientation) and interpersonal (friendship, family, intimate relationships, and sex roles) area. All 32 items were answered on a 5-point Likert-type rating scale (ranging from “strongly disagree” to “strongly agree”). Sample items are “I have definitely decided on the occupation I want to pursue” (Ideological Commitment), “I have considered adopting different kinds of religious beliefs” (Ideological Exploration), “I am very confident about what kinds of friends are best for me” (Interpersonal Commitment), and “I have evaluated many ways in which I fit into my family structure” (Interpersonal Exploration). The EIPQ was translated using a modified parallel blind technique and proved to have a clear factor structure in a large European sample of late adolescents yielding the four expected content factors (Luyckx, Goossens, et al., 2006). Three items were dropped from the original scales because they had non-significant loadings on their hypothesized content factor. Cronbach’s alphas for Ideological Commitment (7 items), Ideological Exploration (7 items), Interpersonal Commitment (8 items), and Interpersonal Exploration (7 items) were .63, .68, .58 and .61, respectively. These internal consistencies were rather low. Luyckx, Goossens, et al. (2006) identified two important reasons that probably accounted for this lowered values: the direction-of-wording effect present in the EIPQ and the diversity in content being measured.

*Identification with commitment and exploration in depth.* The Utrecht-Groningen Identity Development Scale (U-GIDS; Meeus & Dekovic, 1995), a questionnaire originally developed for use with Dutch-speaking adolescents, was used to measure Identification with Commitment and Exploration in Depth in the domains of education and friendship. The two commitment-

subscales each contain eight items and the two exploration-subscales each five items answered on a 5-point Likert-type rating scale (ranging from “strongly disagree” to “strongly agree”). Sample items are “My education gives me certainty in life” (Ideological Commitment), “I think a lot about my education” (Ideological Exploration), “My best friend gives me self-confidence” (Interpersonal Commitment), and “I try to figure out regularly what other people think about my best friend” (Interpersonal Exploration). Meeus (1996; Meeus & Dekovic, 1995) showed that the U-GIDS had a clear and stable factor-structure in different groups, as confirmed in our sample. Cronbach’s alphas for Ideological Commitment (8 items), Ideological Exploration (5 items), Interpersonal Commitment (8 items), and Interpersonal Exploration (5 items) were .81, .62, .80 and .57, respectively.

*Self-esteem.* Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). This well-established scale contains 10 items scored on a 4-point Likert-type rating scale (ranging from “does not apply to me at all” to “applies to me very well”). Participants were asked to indicate how they felt about themselves in general. Cronbach’s alpha was .91.

*Depressive symptoms.* A brief 12-item version of the Center for Epidemiologic Studies Depression Scale (CESD; Radloff, 1977) was used. This questionnaire is the most frequently used measure of depressive symptoms in survey research on non-clinical samples. Items were scored on a 4-point Likert-type rating scale (ranging from “seldom” to “most of the time or always”) and refer to cognitive, somatic and psychological symptoms of depression, such as depressed mood, and sleep disturbance. Participants were asked to indicate how often they experienced these symptoms during the past week. Cronbach’s alpha was .88.

*Substance use.* Participants were asked if they had used soft-drugs or if they had drunk too much during the past six months. These items were scored on a 5-point Likert-type rating scale (ranging from “does not apply to me at all” to “applies to me very well”). The scores on both questions were added to get a global substance use score. The inter item-correlation was .46 ( $p < .001$ ).

*Social and academic adjustment at university.* Social and academic adjustment at university was assessed with a brief 20-item version of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Items were answered on a 5-point Likert-type rating scale (ranging from “strongly disagree” to “strongly agree”). Academic adjustment (10 items) refers to the educational demands of the university experience. Social adjustment (10

items) refers to how well students deal with the interpersonal experiences at the university. Cronbach's alphas were .87 and .85, respectively.

*Openness and conscientiousness.* Both personality characteristics were assessed with the Dutch authorized version of the well-established NEO-FFI (Hoekstra, Ormel, & De Fruyt, 1996). This 60-item instrument measures Costa & McCrae's (1992) Five Factor Model of personality. Cronbach's alphas for Openness and Conscientiousness, both measured by 12 items, were .72 and .79, respectively.

### *Confirmatory Factor Analytic Model of Identity Formation*

The eight identity subscales described above were parceled and used as indicator variables in CFA. In the present data-set, a model containing four factors (Commitment Making, Identification with Commitment, Exploration in Depth, and Exploration in Breadth) proved to be superior to models including 2 or 3 factors (Luyckx, Goossens, Soenens, et al., in press). The correlations among these four identity dimensions indicated that these were distinct but interrelated dimensions. Both commitment factors and both exploration factors were positively interrelated, that is, .42 and .23, respectively ( $p < .001$ ). As expected, both commitment factors and both exploration factors had something in common (with 17.64 % and 5.29 % shared variance, respectively). However, as indicated by the superior fit of the final four-factor model ( $df = 98$ ; Satorra-Bentler Scaled [SBS]  $\chi^2 = 50.74$  [*ns*]; RMSEA  $< .01$ ; CFI = .92; SRMR = .06) in comparison to the two-factor model ( $df = 103$ ; SBS  $\chi^2 = 203.09$ ; RMSEA = .04; CFI = .73; SRMR = .16), they could not be treated as unitary constructs. Whereas Exploration in Depth was positively related to Commitment Making (.23;  $p < .001$ ) and Identification with Commitment (.54;  $p < .001$ ), Exploration in Breadth was negatively related to Commitment Making (-.44;  $p < .001$ ) and unrelated to Identification with Commitment (-.03). These results indicated that Exploration in Depth is associated with the strengthening and evaluation of commitments. Exploration in Breadth, on the other hand, is associated with a period of crisis which precedes the actual formation of commitments. Standardized factor scores of these four dimensions were used in the present study.

## Results

### *Analytical Procedure*

After removal of 12 multivariate outliers (i.e., adolescents with high values for Mahalanobis distance statistic), cluster analysis on the remaining adolescents ( $n = 553$ ) was

conducted using a two-step procedure (Gore, 2000). In the first step, a hierarchical cluster analysis was carried out using Ward's method on squared Euclidian distances. Based on the stepsize criterium and the Calinski and Harabasz index (Calinski & Harabasz, 1974), both recommended by Milligan and Cooper (1985), the appropriate number of clusters was selected. K-means clustering was used to form the final groups. This procedure uses the results from the preliminary hierarchical clustering as nonrandom starting partitions in an iterative procedure. The latter procedure remedies one of the major shortcomings of the hierarchical method, namely that once an object is clustered using this method, it cannot be reassigned to another cluster at a subsequent stage. Iterative clustering, however, minimizes within-cluster and maximizes between-cluster variability, allowing reassignments to "better fitting" clusters and thus optimizing cluster membership of the different objects (Gore, 2000). Finally, tests of omission – one leaves out one cluster, reclusters the remaining cases into k-1 clusters and checks the overlap with the original solution – were performed to investigate if the solution obtained proved to be a stable one.

Table 4.2

*Correlations Among the Various Adjustment and Personality Variables*

	2	3	4	5	6	7
1. Social Adjustment	.35***	-.50***	.02	.50***	.04	.21***
2. Academic Adjustment		-.47***	-.28***	.38***	.02	.57***
3. Depressive Symptoms			.13**	-.62***	.01	-.26***
4. Substance Use				-.08*	.08*	-.27***
5. Self-esteem					.08*	.26***
6. Openness						.01
7. Conscientiousness						-

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

To investigate possible cluster differences in adjustment and personality, a MANOVA was conducted including all criterion variables as dependent variables and the cluster solution as independent variable. Table 4.2 provides the correlations among all criterion variables. Post-hoc tests of group differences were used to determine which group means differed significantly from others on the criterion variables.

*Clustering of Adolescents Using Four Identity Dimensions*

Using the four identity dimensions, five clusters were selected. The final five-cluster solution explained 56% of the variance in Commitment Making, 53% in Identification with Commitment, 52% in Exploration in Depth, and 60% in Exploration in Breadth, thus exceeding the threshold of 50% as stipulated in the absolute  $F$ -ratio test. The five clusters are represented in Figure 4.1. Chi-square analyses indicated that there were no sex differences<sup>1</sup> in the classification of male and female participants among the various clusters ( $\chi^2 = 2.87$  with  $df = 4$ ,  $p = .58$ ).

The Achievement Cluster ( $n = 88$ ) consisted of adolescents relatively high on Commitment Making and Exploration in Breadth. As expected, they displayed high Identification with Commitment and high Exploration in Depth. The Foreclosure Cluster ( $n = 162$ ) consisted of adolescents high on Commitment Making and low on Exploration in Breadth. Both Identification with Commitment and Exploration in Depth were moderately high. The Moratorium Cluster ( $n = 128$ ) consisted of adolescents low on Commitment Making and high on Exploration in Breadth. These adolescents also had a moderately low score on Identification with Commitment and a moderately high score on Exploration in Depth. The Diffused Diffusion Cluster ( $n = 68$ ) consisted of adolescents low on Commitment Making and moderate on Exploration in Breadth. In comparison to the other clusters, they evidenced the lowest score on Identification with Commitment and a low score on Exploration in Depth. The Carefree Diffusion Cluster ( $n = 107$ ) consisted of adolescents scoring moderate on Commitment Making and low on Exploration in Breadth. In comparison to the other clusters, they evidenced the lowest score on Exploration in Depth and a low to moderate score on Identification with Commitment.

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<sup>1</sup> An anonymous reviewer suggested using only the females in the cluster-analysis to prevent the confounding of the results by the unbalanced distribution of gender. Results, however, demonstrated that the exclusion of males did not change the interpretation of the clusters, nor did it significantly alter the relationships between the clusters and the various criterion variables. Therefore, all analyses were performed on the whole mixed-gender sample to retain a representative sample with regard to the Flemish population of students in this subject.

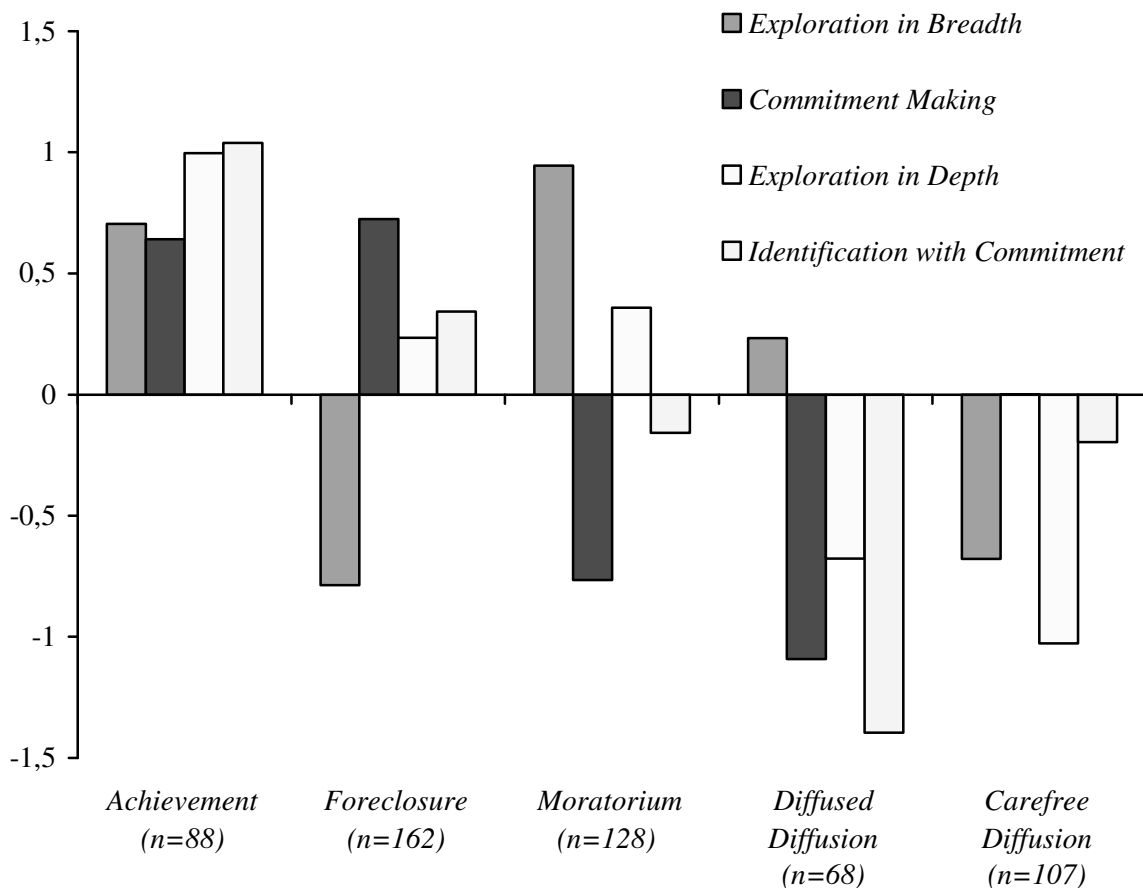


Figure 4.1. Z-scores for exploration in breadth, commitment making, exploration in depth, and identification with commitment for five clusters.

Based upon Wilks' Lambda, statistically significant cluster differences were found ( $F(28, 1955.63) = 6.82, p < .0001, \eta^2 = .08$ ). Subsequent univariate ANOVAs revealed significant cluster differences for all variables. The univariate F-values, eta squared ( $\eta^2$ ), and the multiple pairwise comparisons with the Tukey HSD Test are shown in Table 4.3. Most effect sizes were medium (Cohen, 1988). Effect sizes for social adjustment at university and substance use were small (less than 5.9% of the variance explained), and the effect size for academic adjustment at university was large (more than 13.8% of the variance explained).

The Diffused Diffusion Cluster exhibited the poorest social and academic adjustment at university, followed by the Moratorium Cluster and the Achievement Cluster, and by the Moratorium Cluster and the two high Commitment Making clusters, respectively. The Carefree Diffusion Cluster did not differ significantly from the latter three clusters on both social and academic adjustment at university. Adolescents in the Diffused Diffusion Cluster and the Moratorium Cluster showed the highest number of depressive symptoms. The other three

clusters did not differ significantly from each other on this variable. The Moratorium Cluster evidenced a high score for substance use and the Foreclosure Cluster a low one. The scores of the other three clusters are not significantly different from either the Moratorium Cluster or the Foreclosure Cluster. Both the Diffused Diffusion Cluster and the Moratorium Cluster showed the lowest level of self-esteem, followed by the two Commitment Making clusters. The Carefree Diffusion Cluster did not differ significantly from the latter three clusters on this variable. Adolescents in the Foreclosure Cluster and the Carefree Diffusion Cluster had the lowest score on Openness. The Diffused Diffusion Cluster did not differ significantly from the Foreclosure Cluster and both the Achievement Cluster and the Moratorium Cluster. Finally, adolescents in both the Diffused Diffusion Cluster and the Carefree Diffusion Cluster scored the lowest on Conscientiousness. The Moratorium Cluster did not differ significantly from both the Carefree Diffusion Cluster and the Foreclosure Cluster. In turn, the Foreclosure Cluster did not differ significantly from the Achievement Cluster, with the latter cluster having a high score on Conscientiousness.

In sum, adolescents in the Achievement Cluster scored high on adjustment, Openness, and Conscientiousness. Adolescents in the Foreclosure Cluster scored high on adjustment and Conscientiousness, but low on Openness. Adolescents in the Moratorium Cluster scored low on adjustment and Conscientiousness, and high on Openness. Adolescents in the Diffused Diffusion Cluster scored low on adjustment, Openness, and Conscientiousness. Finally, adolescents in the Carefree Diffusion Cluster scored high on adjustment, but low on Openness and Conscientiousness.

### *Clustering of Adolescents Using the two Classical Identity Dimensions*

Using the two classical identity dimensions (i.e., Exploration in Breadth and Commitment Making), four clusters were selected bearing a striking resemblance to Marcia's theory-based statuses in terms of definition. The final four-cluster solution explained 71% of the variance in Commitment Making and 70% in Exploration in Breadth<sup>2</sup>. The first cluster ( $n = 130$ ), the Achievement Cluster, consisted of adolescents moderately high on Commitment Making and Exploration in Breadth. The second cluster ( $n = 139$ ), the Foreclosure Cluster, consisted of adolescents high on Commitment Making and low on Exploration in Breadth. The third cluster ( $n = 114$ ), the Moratorium Cluster, consisted of adolescents low on Commitment Making and

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<sup>2</sup> All detailed results from the additional analyses can be obtained from the first author.



Table 4.3

*Univariate ANOVA's and Post-hoc Cluster Comparisons Based Upon Tukey HSD Tests for the Five Adjustment Variables*

	Clusters					F (4, 548)	Eta <sup>2</sup>
	Achievement	Foreclosure	Moratorium	Diffused	Carefree		
				Diffusion	Diffusion		
Social adjustment	3.83 <sup>a</sup> (.56)	3.70 <sup>ab</sup> (.60)	3.59 <sup>b</sup> (.63)	3.31 <sup>c</sup> (.71)	3.62 <sup>ab</sup> (.51)	8.17***	.06
Academic adjustment	3.57 <sup>a</sup> (.59)	3.45 <sup>a</sup> (.57)	3.21 <sup>b</sup> (.64)	2.75 <sup>c</sup> (.69)	3.14 <sup>ab</sup> (.64)	22.40***	.14
Depressive symptoms	1.72 <sup>b</sup> (.55)	1.68 <sup>b</sup> (.48)	1.95 <sup>a</sup> (.56)	2.13 <sup>a</sup> (.53)	1.74 <sup>b</sup> (.45)	13.12***	.09
Substance use	1.90 (.94)	1.69 <sup>b</sup> (.90)	2.07 <sup>a</sup> (1.05)	1.90 (.98)	1.97 (1.13)	2.98*	.02
Self-esteem	3.24 <sup>a</sup> (.50)	3.12 <sup>a</sup> (.49)	2.89 <sup>bc</sup> (.58)	2.71 <sup>c</sup> (.69)	3.05 <sup>ab</sup> (.51)	12.03***	.08
Openness	3.60 <sup>b</sup> (.41)	3.35 <sup>a</sup> (.43)	3.60 <sup>b</sup> (.42)	3.48 <sup>ab</sup> (.42)	3.37 <sup>a</sup> (.44)	9.89***	.07
Conscientiousness	3.58 <sup>d</sup> (.41)	3.53 <sup>cd</sup> (.41)	3.37 <sup>bc</sup> (.49)	3.13 <sup>a</sup> (.47)	3.27 <sup>ab</sup> (.44)	16.31***	.11

*Note.* A cluster mean is significantly different from another mean if they have different superscripts. A mean without a superscript is not significantly different from any other mean. Standard deviations are in parentheses.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

high on Exploration in Breadth. The fourth cluster ( $n = 170$ ), the Diffusion Cluster, consisted of adolescents moderately low on Commitment Making and Exploration in Breadth.

Adolescents in the Diffusion Cluster and the Moratorium Cluster evidenced the poorest adjustment, while adolescents in the Foreclosure Cluster and the Achievement Cluster evidenced the best adjustment. On social adjustment at university and depressive symptoms, however, individuals in the Diffusion Cluster did not differ significantly from individuals in the two high Commitment Making clusters, meaning that individuals assigned to Marcia's Diffusion Cluster were not as distressed as could be expected. Furthermore, adolescents in the Achievement Cluster and the Moratorium Cluster scored the highest on Openness, while adolescents in the Achievement Cluster and the Foreclosure Cluster scored the highest on Conscientiousness.

#### *Cross-Tabulation of the "new" and "Classical" Identity Statuses*

Table 4.4 displays the cross-tabulation of the status clusters based upon two identity dimensions and based upon four identity dimensions ( $\chi^2 = 572.85$  with  $df = 12$ ,  $p < .001$ ). This table demonstrates that - despite the fact that the on-diagonal values were substantial - there were significant differences in classifying individuals depending on the identity framework one is using, as indicated by the amount of individuals classified off-diagonal. For instance, of the 130 subjects classified in the Achievement Cluster based upon the two classical identity dimensions, 69 of them were again classified in the Achievement Cluster using the four identity dimensions. A quarter of this group (i.e., 33/130), however, was redirected to the Moratorium Cluster. Especially individuals classified in the Diffusion Cluster based upon the two classical dimensions of Marcia were divided among various status clusters based upon the four identity dimensions: 19.4% (i.e., 33/170) of them were classified in the Diffused Diffusion Cluster, 24.7% (i.e., 42/170) in the Foreclosure Cluster, and 41.8% (i.e., 71/170) in the Carefree Diffusion Cluster. Clearly, and as demonstrated in the results described above, the Diffusion Cluster as defined by Marcia needed unpacking.

#### Discussion

The merits of the present study were threefold. First, four instead of two identity dimensions were included to derive identity statuses empirically through cluster-analysis and this solution was compared to the identity status clusters based upon Marcia's (1966) classical two identity dimensions. Second, the use of a data-driven approach to derive statuses and the unpacking of both exploration and commitment made it possible that more than four statuses would emerge. Several new statuses not included in the status paradigm but often described in

the literature, such as the Carefree Diffusion Status and the Developmental Foreclosure Status, could emerge. Third, these empirically derived statuses were related to different adjustment and personality variables to differentiate among them. These relationships were compared to the vast literature on the external validity of Marcia's statuses.

Table 4.4

*Cross-Tabulation of the Identity Status Clusters Based Upon Marcia's two Identity Dimensions ("Classical" Status Clusters) and the Identity Status Clusters Based Upon Four Identity Dimensions ("new" Status Clusters)*

<i>"New" Status Clusters</i>	<i>"Classical" Status Clusters</i>				
	Achievement	Foreclosure	Moratorium	Diffusion	
Achievement Cluster	<b>69</b>	8	5	6	88
Foreclosure Cluster	13	<b>107</b>	0	42	162
Moratorium Cluster	33	0	<b>77</b>	18	128
Diffused Diffusion Cluster	3	1	31	<b>33</b>	68
Carefree Diffusion Cluster	12	23	1	<b>71</b>	107
	130	139	114	170	553

*Note.* Cells contain absolute numbers. Concordances are given in bold (the concordance between the Diffusion Cluster and Carefree Diffusion Cluster is given in bold and in italic).

Five clusters were retained using the new elaborated identity framework, four of which (the Achievement Cluster, the Moratorium Cluster, the Foreclosure Cluster, and the Diffused Diffusion Cluster) bore a striking resemblance to Marcia's theory-based statuses. These four clusters also bore a striking resemblance to Marcia's (1966) statuses in terms of their associations with adjustment and personality. The fifth cluster, the Carefree Diffusion Cluster, was already described in the literature on intra-status differentiations (Archer & Waterman, 1990; Berzonsky, 1985; Marcia, 1976, 1989a). Individuals in this cluster scored as high as individuals in the two high Commitment Making clusters (i.e., the Achievement Cluster and the Foreclosure Cluster) on several indicators of adjustment. This cluster, however, was clearly differentiated, in accordance with theory, from these high Commitment Making clusters on measures of Openness and Conscientiousness.

*Replicating and Refining Marcia's Statuses Using Four Identity Dimensions*

The two high Commitment Making clusters, the Achievement Cluster and the Foreclosure Cluster, replicated the statuses thus labeled by Marcia (1966). Whereas the Achievement Cluster was characterized by high Exploration in Breadth, the Foreclosure Cluster was characterized by low Exploration in Breadth. Both clusters were clearly distinguished on Exploration in Depth and Identification with Commitment. Individuals in the Foreclosure Cluster explored their current commitments to a moderately high degree and identified themselves with them to a moderately high degree. Individuals in the Achievement Cluster, however, were characterized by the strongest Exploration in Depth and the highest Identification with Commitment. Apparently, when one had strongly committed oneself after thoroughly exploring different alternatives, one was also eager to strengthen commitments through actively questioning and seeking out information about these commitments (Meeus, Iedema, et al., 2002; Valde, 1996). This could possibly lead to a higher Identification with Commitment. Apparently, this eagerness was less present when one had made a certain choice without exploring different alternatives (the Foreclosure Cluster). However, the moderately high score on Exploration in Depth still indicated that individuals in the Foreclosure Cluster did evidence some reflection on their current commitments (Berzonsky, 1985; Kroger, 1995; Marcia, 2001; Stephen et al., 1992).

The two low Commitment Making clusters, the Moratorium Cluster and the Diffused Diffusion Cluster, replicated the Moratorium Status and the Diffusion Status as put forward by Marcia (1966). Whereas the Moratorium Cluster was characterized by high Exploration in Breadth, the Diffused Diffusion Cluster was characterized by moderate Exploration in Breadth. Again, both clusters were clearly distinguished on Exploration in Depth and Identification with Commitment. The Moratorium Cluster was characterized by moderately high Exploration in Depth and moderately low Identification with Commitment. Clearly, the fact that one scored high on Exploration in Breadth - as in the Moratorium Cluster - did not automatically imply that one scored as high on Exploration in Depth. This indicated that both exploration dimensions were different processes probably serving different goals (Meeus, Iedema, et al., 2002). Finally, the Diffused Diffusion Cluster was characterized by low Commitment Making and moderate Exploration in Breadth, again in accordance with theory. It was also characterized by low Exploration in Depth and the lowest Identification with Commitment of all clusters. This indicated that this cluster probably was the most "problematic" cluster of all.

The results confirmed the well-established fact that adolescents in the Achievement Cluster and Foreclosure Cluster displayed a better profile of adjustment on various indicators than in the Moratorium Cluster and in the Diffused Diffusion Cluster (Cramer, 2000; Marcia, 1980, 1993). Again as expected, adolescents in both the Achievement Cluster and the Moratorium Cluster scored high on Openness, and adolescents in the Foreclosure Cluster scored low on this variable. The latter finding reflects the rigid approach of adolescents in the Foreclosure Cluster to identity relevant issues. Finally, adolescents in both the Achievement Cluster and the Foreclosure Cluster scored high on Conscientiousness, as could be expected by their relatively high scores on Commitment Making (Clancy & Dollinger, 1993). Conversely, adolescents in the Moratorium Cluster and especially in the Diffused Diffusion Cluster scored low on this variable.

#### *The Diffused and Carefree Diffusion Cluster: A Valuable Distinction*

The findings indicated the need to distinguish between two diffusion clusters, not only in terms of definition but also in terms of their associations with adjustment. In accordance with hypotheses, both clusters had similar scores on measures of Openness and Conscientiousness. The Carefree Diffusion Cluster was characterized by low Exploration in Breadth, moderate Commitment Making, low Exploration in Depth, and low to moderate Identification with Commitment. Contrary to the Diffused Diffusion Cluster, adolescents in this cluster evidenced higher scores on Commitment Making and on Identification with Commitment, indicating that this cluster probably was less problematic than the Diffused Diffusion Cluster.

Adolescents in the Carefree Diffusion Cluster displayed a more adjusted profile than adolescents in the Diffused Diffusion Cluster on four indicators of adjustment. Only on substance use there was no significant difference between the two statuses. Moreover, adolescents in the Carefree Diffusion Cluster even scored as high as both high Commitment Making clusters on social and academic adjustment at university, depressive symptoms, and self-esteem. In line with the status differentiation within the Diffusion Status discussed earlier, the adolescents in the Carefree Diffusion Cluster could not be described as an apathetic group masking previous developmental deficits resulting in maladjustment (Archer & Waterman, 1990). On the contrary, they seemed to be carefree and to cope rather well with their current lack of strong commitments. Importantly, they were differentiated on Openness and Conscientiousness from both high Commitment Making clusters in accordance with theory. Adolescents in the Carefree Diffusion Cluster were less open than those in the Achievement

Cluster, and they were less conscientious than individuals in both the Achievement and Foreclosure Cluster.

The empirical distinction between both diffusion clusters provides an explanation for the fact that, using only the two classical dimensions of Marcia to derive identity status, individuals classified in the Diffusion Cluster were found not to be as distressed as could be expected. On two indicators of adjustment, they were as adjusted as those in the high Commitment Making Clusters. Clearly, the Diffusion Cluster as defined by Marcia's identity framework needed unpacking in university students because this cluster may not constitute a homogeneous group (Archer & Waterman, 1990; Berzonsky, 1985). The inclusion of two new identity dimensions made it possible to empirically differentiate between two different diffusion status clusters. More than 40% of the individuals originally assigned to the Diffusion Cluster using Marcia's framework were assigned to the Carefree Diffusion Cluster using the new identity framework, which could have important practical implications. Furthermore, more than 24% of those originally assigned to the Diffusion Cluster using Marcia's framework, were assigned to the Foreclosure Cluster using the four identity dimensions' framework. This again indicated that the category of identity diffusion as defined by Marcia may not only be a too broad category in university students (Archer & Waterman, 1990), but also encompasses individuals that actually do not belong there (as an illustration, almost one third of our sample was assigned to this Diffusion Cluster). Thus, the inclusion of two new defining identity characteristics (i.e., Exploration in Depth and Identification with Commitment) enabled us to further refine this status cluster and to redirect individuals to other, possibly more appropriate status clusters.

### *Practical Implications*

Adolescents in the Carefree Diffusion Cluster were as adjusted as those adolescents in the high Commitment Making clusters. These results were in contrast with the commonly reported findings that adolescents in the Diffusion Status (and the Moratorium Status) were less adjusted and therefore adequate targets for counseling or therapeutic interventions (Marcia, 1982, 1987). The present findings however indicated that these individuals were not necessary a primary target for intervention because the majority of them appeared rather well adjusted in the early years of late adolescence (Archer & Waterman, 1990). This would probably imply that they would not demand psychological assistance. It can be expected, however, that if one progresses through late adolescence, these adolescents would consider their lack of commitments as more problematic. Hence, they will be better targets for intervention because they probably will be

more motivated to change (Marcia, 1976). Likewise, it can be expected that outside the college context (which provides a psychosocial moratorium for those who attend it) the ratio of late adolescents in the Carefree Diffusion Cluster to those in the Diffused Diffusion Cluster would be different. Therefore, therapists and student counselors should be sensitive to how adolescents deal with their current lack of commitments because this might indirectly influence their willingness to ask for help or to go into therapy. Thus, this attitude towards the lack of commitments could partly determine the success of possible interventions. Contextual factors, such as the university setting, could be important factors exerting an influence on this attitude.

### *Limitations*

One must keep in mind the limitations of the present study that provide avenues for further research. First, a more balanced sample in terms of gender would enable a systematic investigation of gender differences in the emergence of empirically derived identity statuses in late adolescence and their associations with adjustment and personality. Second, the sample used was not diverse and represented a Caucasian and middle class sample. Because cluster-analysis is a data-driven procedure, the nature of the sample is of paramount interest and limits the generalizations that can be made. However, the cluster analysis based upon Marcia's two classical dimensions partially replicated the statuses defined by Marcia and identified in numerous empirical contributions, hence demonstrating the a-specificity of our sample in comparison to previous university samples. Third, identity questionnaires were used in the present study. Identity interviews, however, can yield a different picture of identity (Goossens, 2001). Marcia (1966; Marcia & Archer, 1993) has always stressed the importance of using clinical judgment to arrive at status classification. This is not possible using questionnaire data because individuals are classified using a purely additive approach without the benefits of clinical judgment. Therefore it remains to be investigated if the present findings can be replicated using identity interviews instead of questionnaires. Fourth, all measures were self-administered questionnaires. Although questionnaires are most appropriate to gather information about internal and subjective processes such as identity development and well-being, future researchers are encouraged not to rely solely on these self-reported indices, but also on observational measures. Finally, the cross-sectional design of the present study did not allow a developmental perspective. Longitudinal research across a broad age range is recommended to investigate how these empirically derived statuses and their constituent dimensions develop over time.

