

Testing New Identity Models and Processes in French-speaking Adolescents and Emerging Adults Students

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Abstract Developing a sense of identity is a crucial psychosocial task for young people. The purpose of this study was to evaluate identity development in French-speaking adolescents and emerging adults (in France and Switzerland) using a process-oriented model of identity formation including five dimensions (i.e., exploration in breadth, commitment making, exploration in depth, identification with commitment, and ruminative exploration). The study included participants from three different samples (total $N = 2,239$, 66.7 % women): two samples of emerging adult student and one sample of adolescents. Results confirmed the hypothesized five-factor dimensional model of identity in our three samples and provided evidence for convergent validity of the model. The results also indicated that exploration in depth might be subdivided in two aspects: a first form of exploration in depth leading to a better understanding and to an increase of the strength of current commitments and a second form of exploration in depth leading to a re-evaluation and a reconsideration of current commitments. Further, the identity status cluster

solution that emerged is globally in line with previous literature (i.e., achievement, foreclosure, moratorium, care-free diffusion, diffused diffusion, undifferentiated). However, despite a structural similarity, we found variations in identity profiles because identity development is shaped by cultural context. These specific variations are discussed in light of social, educational and economic differences between France and the French-speaking part of Switzerland. Implications and suggestions for future research are offered.

Keywords Adolescence · Emerging adulthood · Exploration in depth · Identity processes · Identity statuses

Introduction

In his classic theory, Erikson (1968) posited that identity development is a dynamic life-long process, which becomes especially central during the adolescents years. In our late modern Western societies, several authors (e.g., Arnett 2000, 2007) have suggested that the task of developing a sense of identity has been extended to the period of *emerging adulthood* (i.e., age period from the late teens through the mid-to late 20 s), which represents a time of identity explorations to clarify what one wants out of life. In fact, the decline of traditional social markers of adulthood (e.g., full-time employment, marriage, parenthood) has amplified the importance of individual identity explorations and reflections on adult commitments that one will endorse (Schwartz et al. 2012), and young people “are [now] expected to carve out major of their own adulthoods by means of self-directed maturational processes” (Côté 2000, p. 31).

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Marcia's Identity Status Model

Inspired by Erikson's theory, a large number of empirical studies on identity formation have been conducted (for a review see Schwartz 2001). The great majority of these studies are based on Marcia's identity status model, which is the most important paradigm in the neo-Eriksonian personal identity research (Marcia 1966, 1989). In an attempt to elaborate Erikson's (1968) fifth psychosocial stage (*identity vs. role confusion*), Marcia described four qualitatively different identity statuses that arise from the processes of *exploration* and *commitment* (Kroger and Marcia 2011). *Exploration* refers to a period of active questioning and consideration of alternative goals, values and beliefs, whereas *commitment* refers to the choice and the adoption of one or more of such alternatives (Côté 2009). Crossing these two dimensions generates four identity statuses: *identity achievement* (individuals have experienced a phase of exploration before establishing firm commitments), *moratorium* (individuals are currently in a state of exploration, but have not made strong commitments), *foreclosure* (individuals have adopted commitments without prior explorations) and *diffusion* (individuals have not gone through a proactive exploratory period and have not established firm commitments).

A New Five-Dimensional Process Oriented Model

Several authors have extended Marcia's conceptualizations and proposed process-oriented models of personal identity formation (for a review, see Meeus 2011), which led recently to the introduction of new empirically derived statuses. These new models are important elaborations of Marcia's conceptualization (1966), more able to capture the richness and the complexity of Erikson's writings (1968) on identity (Klimstra et al. 2012). Within this renewed line of research, Luyckx et al. (2006, 2005, 2008) proposed a heuristic five-dimensional identity model, in which they unpacked classical commitment and exploration dimensions, but also introduced a new dimension (*ruminative exploration*) that aims to capture explicitly the maladaptive side of identity formation.

Following previous propositions, Luyckx et al. (2011) subdivided commitment and exploration into respectively two and three processes. First, based on the work and ideas of Bosma (1985), commitment was subdivided into *commitment making* (Marcia's original commitment dimension) and *identification with commitment*, which refers to the degree to which individuals feel certain or identify with commitment. Second, in accordance with Meeus's ideas and work (Meeus 1996; Meeus et al. 2002), exploration was subdivided into *exploration in breadth* (Marcia's original exploration dimension) and *exploration in depth*,

which refers to the careful consideration of current commitments and corresponds as a way to evaluate the choice being made. This conceptualization of exploration resembles the distinction between *exploration in depth* and *reconsideration of commitment* that has been recently proposed by Crocetti, Meeus and colleagues in their alternative three-dimensional model (Crocetti et al. 2008, 2010); however, *exploration in breadth*, which refers to the weighing up of various identity alternatives in the absence of current commitments (as originally stated by Marcia), differs from *reconsideration of commitment* of the Meeus, Crocetti and colleagues's alternative model, which is *exploration in breadth* that starts from the evaluation of the current commitments (Crocetti et al. 2008; Meeus et al. 2010). Based on the study of the changes of these identity dimensions in Belgian-Dutch college students, Luyckx et al. (2006) proposed a "dual cycle" model of identity formation including a commitment-formation cycle and a commitment-evaluation cycle. The commitment-formation cycle refers to the formation of stable commitments (i.e., *commitment making*) following exploration of various alternatives and options in important life domains (i.e., *exploration in breadth*) (Klimstra et al. 2012). The commitment-evaluation cycle refers to actively thinking about the current commitments (i.e., *exploration in depth*) and to embracing commitments if they fulfill one's internal standards (i.e., *identification with commitment*). In this dual-cycle model, identity formation is an iterative dynamic process, as initially described by Erikson (1950/1980), involving intertwined dimensions of exploration and commitment. Finally, Luyckx et al. (2008) extended their original model by introducing an additional type of exploration, *ruminative exploration*, conceptualized as a dimension that aims to capture the maladaptive side of the identity formation process (Luyckx et al. 2011). *Ruminative exploration* refers to continually mulling over identity choices without being able to decide, and as such is a threat to identity development because it leads to be "stuck" in endless explorations with an inability to make firm commitments (Klimstra et al. 2012; Schwartz et al. 2012).

From Five-Dimensional Processes to Empirically Derived Identity Statuses

In several studies, the identity processes of the dual-cycle model have been used to empirically derived identity statuses (e.g., Luyckx et al. 2006; Schwartz et al. 2011) and the four original Marcia's statuses have emerged repeatedly along with new statuses. In a series of Belgian studies including various samples (i.e., adolescents, student emerging adults, young adult employees or emerging adults with type 1 diabetes), Luyckx and colleagues identified repeatedly through cluster analysis six identity

statuses, which expand and refine original Marcia's classification model (Luyckx et al. 2008a, b, 2009, 2010). Globally, Achievement was characterized by high scores on commitment dimensions (i.e., *commitment making* and *identification with commitment*), moderate to high scores on exploration in breadth and in depth, and low score on ruminative exploration. Foreclosure generally was characterized by high scores on commitment dimensions and low scores on all exploration dimensions. Of particular interest, the new empirically derived statuses included additional variants of Diffusion (Carefree Diffusion and Diffused Diffusion), as well as an Undifferentiated status characterized by moderate scores on all identity dimensions, and some specifications concerning the Moratorium status. Whereas Carefree and Diffused Diffusion were both characterized by low scores on commitment dimensions and low to moderate scores on *exploration in breadth* and *in depth*, they differed regarding *ruminative exploration* with respectively a high score observed in Diffused Diffusion and a low score observed in Carefree Diffusion. The Carefree form of diffusion represents individuals who have no interest or failed to engage in any meaningful identity activity, and who are untroubled by the absence of strong commitments (Luyckx et al. 2011; Schwartz et al. 2011). In contrast, the Diffused form of diffusion represents individuals somewhat trying to develop a sense of identity, but through nonproductive and ruminative explorations (Schwartz et al. 2012). Finally, regarding Moratorium, frequently described in the literature as the transitional "crisis" and/or anxiety provoking status (e.g., Erikson 1968; Kroger and Marcia 2011; Stephen et al. 1992), Luyckx and colleagues found that a moderate to high score on ruminative exploration characterized this identity status, frequently labeled Ruminative Moratorium (Luyckx et al. 2008a, b, 2009, 2010).

Subsequent studies conducted in Italy (Crocetti et al. 2011) and in the United States (Schwartz et al. 2011) evidenced the same *structure* of the status model—meaning that the set of identity clusters that emerged globally resemble to those extracted in Belgian-Dutch samples by Luyckx et al. (2008a, b, 2009, 2010). However, some subtle and specific differences deserve to be mentioned. For example, Crocetti et al. (2011) indicated that, compared to Belgian-Dutch and North-American individuals in the Achievement status, Italian achieved emerging-adult students displayed *ruminative exploration*, due to the specific context (e.g., high rates of unemployment, job insecurity, etc.) in which Italian students deal with their identity formation (for an extended discussion of particularities of identity formation in Italy, see Crocetti et al. 2012). In the United States, based on the results of a large-scale study (>9,000 emerging-adult students from thirty U.S. universities), Schwartz et al. (2011) observed that

moderate levels of *commitment making* and *identification with commitment* characterized the Moratorium status. The authors consequently suggested that the pattern of this status was more similar to what (Meeus et al. 2010; Crocetti et al. 2008) have called Searching Moratorium, which is characterized by exploration of new alternatives while still maintaining prior commitments. This pattern was not observed in Italy (Crocetti et al. 2011) and less clearly in Belgian-Dutch samples (Luyckx et al. 2008a, b, 2009, 2010); Belgian-Dutch, and especially Italian samples, observed patterns corresponding more to Marcia's classical Moratorium characterized by exploration with no current commitments. Globally, these results suggest that the structure of identity formation may present strong similarities at least across western countries, "but that identity processes (i.e., forms of exploration and commitment) are endorsed to different extents between and among countries" (Schwartz, et al. 2012, p. 8).

The Current Study

Drawing from an ecological perspective (Bronfenbrenner 2005), most contemporary scholars acknowledge that identity formation occurs through continuous dynamic interactions between individuals and their physical and social environments. All humans are in fact embedded in multiple interconnected systems including families, social institutions (e.g., schools, work places) and socio-politico-cultural contexts that exert influences on identity formation. We assume that identity is plural, and may take diverse form across cultures. It is then important to explore the specificities of identity statuses or identity processes in the so-called 95 % neglected national contexts (Arnett 2008). Identity research in the neo-Eriksonian tradition using new process models of identity formation is unfortunately rare in cultural French-speaking contexts (e.g., France or French-speaking part of Switzerland). To fill this gap, and as a first step, we applied in this study the Luyckx's five-dimensional model of identity formation in the French-speaking context.

We hypothesized that this model, originally developed with Belgian-Dutch adolescents and emerging adults as well as examined in Italian and North American samples, could be replicated in French and Swiss adolescents and emerging adults students. More specifically, we hypothesized, first, that the five-factor structure of the dimensional identity model could be confirmed in our French-speaking samples. Second, we tested convergent validity of the five identity dimensions (i.e., that is, how these dimensions relate to common construct they are supposed to be related to). Third, we expected that the six identity statuses also could be extracted empirically in a French-speaking context. Despite a structural similarity, we expected, however, to find

variations in identity profiles because identity development is shaped and constrained by cultural context (Bosma and Kunnen 2001). France and Switzerland share 372 miles of border, and relationships between the two countries are very intensive and close, particularly with the French-speaking part of Switzerland (an area with approximately two millions inhabitants). Thus, the French part of Switzerland is greatly influenced by French culture (i.e., television, newspaper, cinema and literature), and Swiss French share generally numerous cultural values with French. However, they also differ in many respects. Of particular interest for this article, and the sample examined in our study (adolescents and emerging adult students who spend much of their waking times in educational activities), the educational systems differ between the two countries (Lannegrund-Willems et al. 2011; Nakamura et al. 2007). In France, since the end of 19th century, school that is free and mandatory “has been seen as a *republican* instruments to educate peasants, the working class, and immigrants, and as a means of integration” (Lannegrund-Willems et al. 2011, p. 264). Additionally, the French educational system is highly centralized, and in 1984, for example, the French government planned that 80 % of youth should get the “Baccalauréat” (i.e., highly valued high school diploma that gives right to enter to university) because a competitive modern society needs highly qualified and flexible people (Lannegrund-Willems et al. 2011). By contrast, in Switzerland, despite federal guidelines, the school and educational system is organized on a cantonal (i.e., state) level. Furthermore, contrary to France, most of Swiss youth undertake vocational training (apprenticeship) after mandatory secondary school. There is only a minority of adolescents (approximately a fifth of them) who attend Gymnasium and get a “Maturité/Abitur” providing unconditioned entry to Swiss and many foreign universities (Nakamura et al. 2007).

To sum up, this study has three objectives. The first objective of the study was to translate and assess factorial and convergent validity as well as reliability of the French versions of the Dimension of Identity Development Scale (DIDS). The second aim was to test if empirically derived identity statuses previously observed in the Dutch part of Belgium, Italy, and the United States are valid in French-speaking contexts. Third, an additional aim of this article is to explore and discuss the particularities of identity processes and statuses in French-speaking contexts.

Method

Participants

Emerging adult students for the present study were recruited from different universities in France and the

French-part of Switzerland. Adolescents were recruited from public high schools in three different regions of France. All participants were informed about the purpose of the study, and no signed consent was required. Sample 1 and sample 2 consisted respectively of 1,088 (71.7 % women) and 687 (66.5 % women) emerging-adult undergraduate students recruited at three large universities in France (sample 1) and at one university in the French-speaking part of Switzerland (sample 2). Mean age for the sample 1 was 18.99 ($SD = 1.32$), with 95 % of the sample between the ages of 18 years and 10 months and 19 years and 2 months. Mean age for the sample 2 was 20.50 ($SD = 1.99$), with 95 % of the sample between the ages of 20 years and 4 months and 20 years and 8 months. Students participants took part in this study on a voluntary basis and completed anonymously self-report questionnaire during a class period. Sample 3 consisted of 464 volunteer adolescents (61.8 % women) from seven high schools in the Bordeaux, Grenoble and Toulouse area. Mean age for this adolescent sample was 16.84 ($SD = 0.87$), with 95 % of the sample between the ages of 16 years and 9 months and 16 years and 11 months. Self-report questionnaires were anonymously administered during a class period in the presence of one research assistant to provide help if necessary.

Measures

Dimension of Identity Development Scale (DIDS)

The DIDS is a 25-item questionnaire (5 items for each dimensions) rated on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*) that assesses five identity processes (CM: commitment making, IC: identification with commitment, EB: exploration in breadth, ED: exploration in depth, and RE: ruminative exploration). The items of the DIDS were translated from English to French by the second author according to the recommendations of the International Test commission (Hambleton 2001). This translation was then discussed between the co-authors until a consensus was reached to develop a final single version of the DIDS. A bilingual translator then back translated the French version to English. This back translation procedure provided English versions identical in content with the original items of the DIDS.

Short Form of the Ego Identity Process Questionnaire (EIPQ-SF)

Derived from the EIPQ (Balistreri et al. 1995), the EIPQ-SF is a 16-item questionnaire rated on a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly*

agree) that assesses identity exploration and identity commitment in the ideological and interpersonal areas (French validation by Zimmermann et al. 2010).

Identity Style Inventory (ISI-3)

The ISI-3 is a 40-item scale rated on a 5-point Likert scale ranging from 1 (*not at all like me*) to 5 (*very much like me*) that assesses three identity styles (informational, 11 items; normative, 9 items; diffuse-avoidant, 10 items) and identity commitment (10 items) (Berzonsky 1992; French validation by Zimmermann et al. 2012). Identity styles represent differences in strategies used by individuals to deal with life choices and identity issues. Specifically, people with an informational identity style are self-reflective and they actively seek out and evaluate identity-related relevant information. Individuals who have a normative style mainly adopt values and norms of significant others and conform to their expectations. Finally, persons with a diffuse-avoidant style procrastinate and tend to avoid dealing with identity issues as long as possible (Berzonsky 1989).

Results

Factorial Validity and Reliability of the DIDS

To test the factor structure of the French adaptation of the DIDS in each sample, Confirmatory Factor Analyses (CFAs) were conducted on the variance–covariance matrix using maximum likelihood estimation through R-software 2.11.1 (R Development Core Team 2010). We evaluated the measurement of the model fit with the data with different standard fit indices. The Satorra-Bentler Chi square index ($SBS-\chi^2$) should be as small as possible; the comparative fit index (CFI) should be equal or greater than .90; and the root mean square error of approximation (RMSEA) that should be lower than .08 (Bentler and Bonnett 1980; Brown 2006; Hu and Bentler 1999). Results are summarized in Table 1.

Our results indicated that the original five-factor model (model 1, see Table 1) had CFI below the recommended cut-off in each sample, suggesting a questionable fit. Further analysis of the modifications indices (MI) was therefore used to suggest potential enhancements to the model. High MI were found in each sample between three pairs of items, which were repetitive and conceptually very similar in content: (a) exploration in breadth items 6 and 7 (“I think actively about different directions I might take in my life” translated into “Je réfléchis activement aux différentes directions que je pourrais prendre dans ma vie” and “I think about different things I might do in the future”

Table 1 Fit indices for the five-factor model of the DIDS in the three samples

Model	df	SBS- χ^2	RMSEA	CFI
Sample 1 (N = 1,088)				
Five-factor model (model 1)	265	2,162.76	.087	.84
Five-factor model + error cov (model 2)	262	1,364.18	.067	.91
Sample 2 (N = 687)				
Five-factor model (model 1)	265	1,484.88	.084	.84
Five-factor model + error cov (model 2)	262	1,023.91	.070	.91
Sample 3 (N = 464)				
Five-factor model (model 1)	265	1,197.22	.095	.81
Five-factor model + error cov (model 2)	262	848.50	.076	.88

Error cov. = errors of items 6 and 7, 13 and 14, and 17 and 18 are allowed to covary

df degrees of freedom, $SBS-\chi^2$ Satorra-Bentler scaled Chi square, RMSEA root mean square error of approximation, CFI comparative fit index

translated into “Je réfléchis aux différentes choses que je pourrais faire à l’avenir”), (b) ruminative exploration items 13 and 14 (“I keep looking for the direction I want to take in my life” translated into “Je continue à rechercher la direction que je veux prendre dans ma vie” and “I keep wondering, which direction my life has to take” translated into “Je continue à me demander quelle direction ma vie doit prendre”), and (c) identification with commitment items 17 and 18 (“My future plans give me self-confidence” translated into “Mes projets d’avenir me donnent confiance en moi” and “Because of my future plans, I feel certain about myself” translated into “En raison de mes projets d’avenir, je me sens sûr(e) de moi”). Such a high degree of overlap in item content can trigger correlated errors (Byrne 2001), suggesting that it is justified, based on the modification index analysis, to let the pairs of error-terms to correlate. Allowing error covariances between the three pairs of items led thus to an improved and overall acceptable fit (see Table 1, model 2). Finally, our results indicated that this final five-factor model provided a statistically significant better fit than any alternative four-factor model (e.g., combining EB and ED, EB and RE or CM and IC in one single factor).

Cronbach’s alphas and item-total correlations for each sample are reported in Table 2. Reliability indices for EB, CM, IC, and RE were excellent and comparable to those reported in previous studies (e.g., Crocetti et al. 2011; Luyckx et al. 2008; Schwartz et al. 2011). However, reliability indices for ED were poor (alphas ranging from .57 to .62 and item-total correlations between .19 and .51) and lower than the previously reported. Further investigations

Table 2 Cronbach’s alpha and item-total correlations of the five DIDS subscales in three samples

	Sample 1 (N = 1,088)		Sample 2 (N = 687)		Sample 3 (N = 464)	
	α	Item-total r 's	α	Item-total r 's	α	Item-total r 's
CM	.89	.66–.79	.88	.63–.77	.88	.61–.79
IC	.86	.49–.73	.85	.52–.73	.88	.59–.78
EB	.81	.55–.64	.80	.54–.66	.83	.59–.70
ED	.62	.23–.51	.59	.22–.48	.57	.19–.43
RE	.84	.39–.78	.85	.44–.78	.87	.51–.82

CM Commitment making, IC Identification with commitment, EB Exploration in breadth, ED Exploration in Depth, and RE Ruminative exploration

of the ED inter-item correlation matrix revealed that items 21 and 22 were only slightly correlated or even not correlated with other items (23–25), suggesting that they are maybe two different aspects of exploration in depth (ED_a and ED_b, see also next two subsections). Additionally, the average inter-item correlations varied respectively from .26 to .34 and from .38 to .41 for ED_a (items 21 and 22) and ED_b (items 23–25), which is in the range of .15–.50 recommended by Clark and Watson (1995). Reliability indices for these two aspects, especially considering the small number of items, were satisfactory or even good (alphas ranging from .65 to .67 for the items 23–25 and from .42 to .50 for the items 21 and 22). In fact, alpha coefficients depend on the number of items in the scale and tend to decrease as the number of items decreases (Iacobucci and Duhachek 2003). For example, for a three-item or four-item scale an alpha coefficient of 0.50 might be considered as quite sufficient, but unsatisfactory for a ten-item scale where an alpha coefficient closer to 0.70 will be required (Todd and Bradley 2001).

Correlational Analyses

Table 3 provides the correlations among the five identity dimensions, including the two aspects of exploration in depth (ED_a and ED_b). First, as expected and as previously observed especially in Belgian-Dutch samples (Luyckx et al. 2008), the two commitment dimensions were highly positively correlated. Second, exploration dimensions were generally positively interrelated underlining their common focus on exploration of identity-relevant information. Third, ruminative exploration was strongly and negatively associated with commitment dimensions suggesting as expected that this type of exploration may be problematic to identity commitment. Fourth, exploration in breadth is positively but moderately associated with commitment dimensions indicating that exploration may facilitate commitment. Finally, and it was unexpected, exploration in depth was unrelated (or even slightly negatively in sample 2) with commitment dimensions. As previously mentioned in the reliability results (see *supra*), this latter result may reflect the fact that there are two sides or aspects of exploration in depth (ED_a regrouping items 21 and 22; ED_b regrouping items 23–25). The correlation patterns (see Table 3) observed between these two aspects of ED and the other identity dimensions seem to corroborate this interpretation. On one side, ED_a was positively related to commitment dimensions and unrelated or weakly negatively correlated with ruminative exploration. On the other side, ED_b was negatively related commitment dimensions and positively correlated with ruminative exploration.

Table 4 presents the correlations between DIDS identity dimensions, identity styles (ISI-3) and EIPQ-SF exploration and commitment dimensions. Taken as a whole, the patterns of correlations were consistent across the three samples, and in line with our expectations. Specifically, both commitment dimensions (CM and IC) were positively

Table 3 Correlations among the five identity dimensions (including two aspects of ED) in sample 1 (N = 1,088), sample 2 (N = 687) and sample 3 (N = 464)

	CM	IC	EB	ED	RE	ED _a	ED _b
CM	–	.69**/.67**	.16**/.18**	–.00/–.09*	–.55**/–.59**	.38**/.35**	–.23**/–.31**
IC	.66**	–	.15**/.15**	–.03/–.10**	–.52**/–.60**	.38**/.41**	–.26**/–.36**
EB	.18**	.15**	–	.40**/.35**	.23**/.17**	.37**/.32**	.29**/.24**
ED	.06	.04	.37**	–	.42**/.37**	.62**/.59**	.89**/.88**
RE	–.45**	–.45**	.25**	.37**	–	–.05/–.18**	.55**/.56**
ED _a	.37**	.41**	.40**	.67**	–.01	–	.21**/.13**
ED _b	–.15**	–.20**	.24**	.89**	.49**	.27**	–

CM Commitment making, IC Identification with commitment, EB Exploration in breadth, ED Exploration in Depth, RE Ruminative exploration, ED_a First aspect of Exploration in Depth (items 21 and 22), and ED_b Second aspect of Exploration in Depth (items 23–25). Sample 1 and 2 correlations above the diagonal and sample 3 correlations below the diagonal; in each cell above the diagonal, the first coefficient is from sample 1 and the second one from sample 2

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

Table 4 Correlations between DIDS dimensions, EIPQ-SF dimensions and ISI-3 identity styles in sample 1 (N = 1,088), sample 2 (N = 687) and sample 3 (N = 464)

	EIPQ-SF			ISI-3		
	Exploration	Commitment	Informational	Normative	Diffuse-avoidant	Commitment
CM	.11**/.15**/.03	.23**/.28**/.31**	.13**/.21**/.11*	.21**/.21**/.25**	-.31**/-.37**/-.20**	.60**/.59**/.61**
IC	.16**/.20**/.02	.26**/.29**/.34**	.19**/.21**/.18**	.19**/.24**/.27**	-.26**/-.33**/-.19**	.60**/.63**/.64**
EB	.30**/.31**/.36**	-.02/.01/-.01	.29**/.34**/.30**	.12**/.05/.09	-.08**/-.13**/-.12*	.05/.11**/.19**
ED	.25**/.27**/.30**	-.11**/-.03/-.01	.16**/.25**/.28**	.13**/.06/.10*	-.02/.05/-.05	-.14**/-.15**/.01
RE	.06/-.00/.24**	-.26**/-.20**/-.19**	.05/.00/.12**	-.06/-.11**/-.12*	.26**/.29**/.14**	-.52**/-.55**/-.41**
ED _a	.26**/.33**/.25**	.04/.20**/.17**	.23**/.30**/.29**	.17**/.14**/.22**	-.22**/-.25**/-.18	.22**/.30**/.33**
ED _b	.16**/.14**/.24**	-.16**/-.15**/-.11**	.07/.13**/.18**	.07/-.00/-.00	.15**/.22**/.04	-.31**/-.36**/-.19**

CM Commitment making, IC Identification with commitment, EB Exploration in breadth, ED Exploration in Depth, RE Ruminative exploration, ED_a First aspect of Exploration in Depth (items 21 and 22), and ED_b Second aspect of Exploration in Depth (items 23–25). In each cell the first coefficient is from sample 1, the second one from sample 2, and the third one from sample 3

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

related to commitment dimensions of the EIPQ-SF and ISI-3, positively associated to informational and normative styles, and negatively related to diffuse-avoidant style. Interestingly, commitments dimensions were moderately positively associated with EIPQ-SF exploration in sample 1 and 2 (i.e., emerging adult students), but unrelated to this dimension in the adolescent sample (sample 3). Exploration in breadth was, as expected, mainly positively associated with EIPQ-SF exploration and informational style. Ruminative exploration was negatively associated with commitment dimensions and positively related to diffuse-avoidant style. Furthermore, in adolescent sample only (sample 3), we found a moderate and a small correlation between ruminative exploration and respectively EIPQ-SF exploration and informational style. Concerning exploration in depth, based on previous correlational results (see *supra*), we generated correlation patterns for both hypothesized aspects of ED (ED_a and ED_b). The first aspect (ED_a) was positively associated with exploration and commitment dimensions, informative and normative styles, and negatively related to diffuse-avoidant style. By contrast, the second aspects of ED (ED_b) was generally negatively linked to commitment dimensions, unrelated to normative style, slightly positively associated with informational style, and, to a stronger extent, to diffuse-avoidant style (with the exception of sample 3, where there was no link between ED_b and diffuse-avoidant style). These differential associations of the two aspects of ED with EIPQ-SF dimensions and identity styles were consistent with the correlations observed between ED_a, ED_b and the other four DIDS identity dimensions.

Empirically Identity Derived Statuses

Cluster analyses were conducted separately on DIDS dimensions for each sample using a two-step procedure. In the first step, Z-scores for the 5 dimensions were subjected to hierarchical cluster analyses using Ward’s method and based on squared Euclidean distances. A 6-cluster solution was retained in all samples according to three criteria (the same ones used by Luyckx et al. 2008): theoretical predictions, parsimony of the cluster solution, and its explanatory power. The second step consisted in an iterative *k*-means clustering procedure using the initial cluster centres.

Figures 1, 2 and 3 present the final 6-cluster solution for samples 1, 2, and 3, respectively. These cluster solutions explained respectively 64, 59, and 58 % of the variance in commitment making, 57, 53 and 62 % of the variance in identification with commitment, 51, 55 and 47 % of the variance in exploration in breadth, 40, 55 and 53 % of the variance of exploration in depth, and finally 64, 66 and 50 % of the variance in ruminative exploration. In each

Fig. 1 Final cluster solution in French emerging adult sample (N = 1,088). Z scores for Commitment making (CM), Identification with commitment (IC), Exploration in breadth (EB), Exploration in depth (ED) and Ruminative exploration (RE)

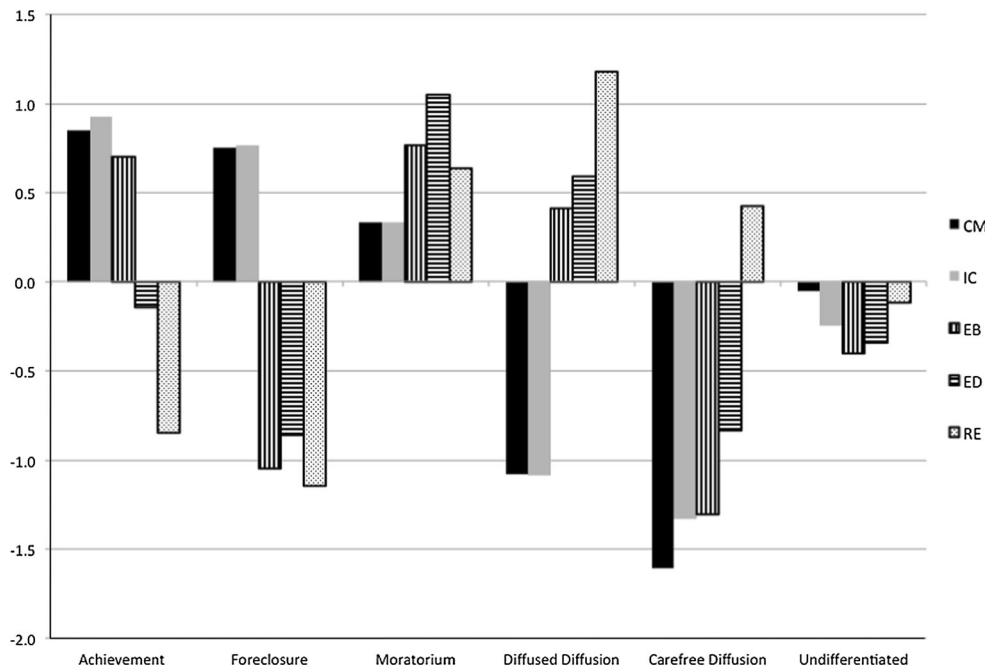
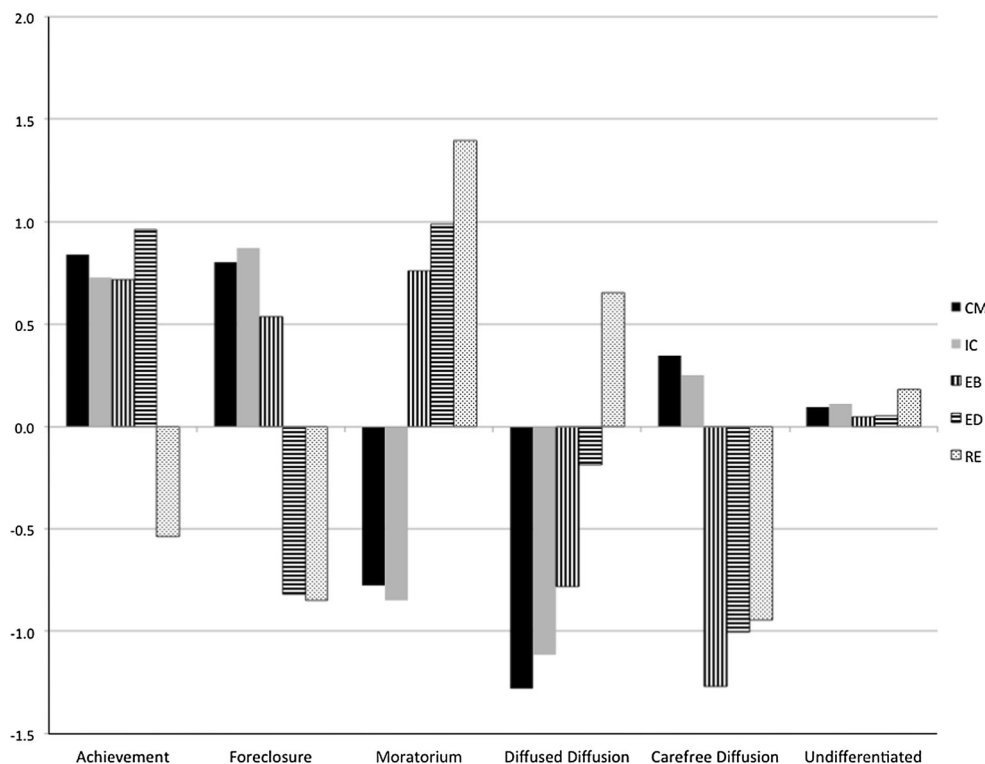


Fig. 2 Final cluster solution in Swiss emerging adult sample (N = 687). Z scores for Commitment making (CM), Identification with commitment (IC), Exploration in breadth (EB), Exploration in depth (ED) and Ruminative exploration (RE)



figure, the distance between the cluster means and the total sample standardized mean, expressed in standard deviation, may be interpreted as an effect size (Scholte et al. 2005). According to Cohen’s (1988) conventional criteria, 0.2, 0.5, and 0.8 SDs may be interpreted respectively as small, moderate and large effect.

As expected, Achievement was globally characterized by high scores on both commitment dimensions and on

exploration in breadth, intermediate to high scores on exploration in depth, and low to very low scores on ruminative exploration (see Table 5 for the proportion of participants in each cluster for the 3 samples). Foreclosure cluster scored high on both commitment dimensions, low (in samples 1 and 3) to moderately high (in sample 2) on exploration in breadth, and moderately low to very low on exploration in depth and ruminative exploration. Moratorium was

Fig. 3 Final cluster solution in French adolescent sample (N = 464). Z scores for Commitment making (CM), Identification with commitment (IC), Exploration in breadth (EB), Exploration in depth (ED) and Ruminative exploration (RE)

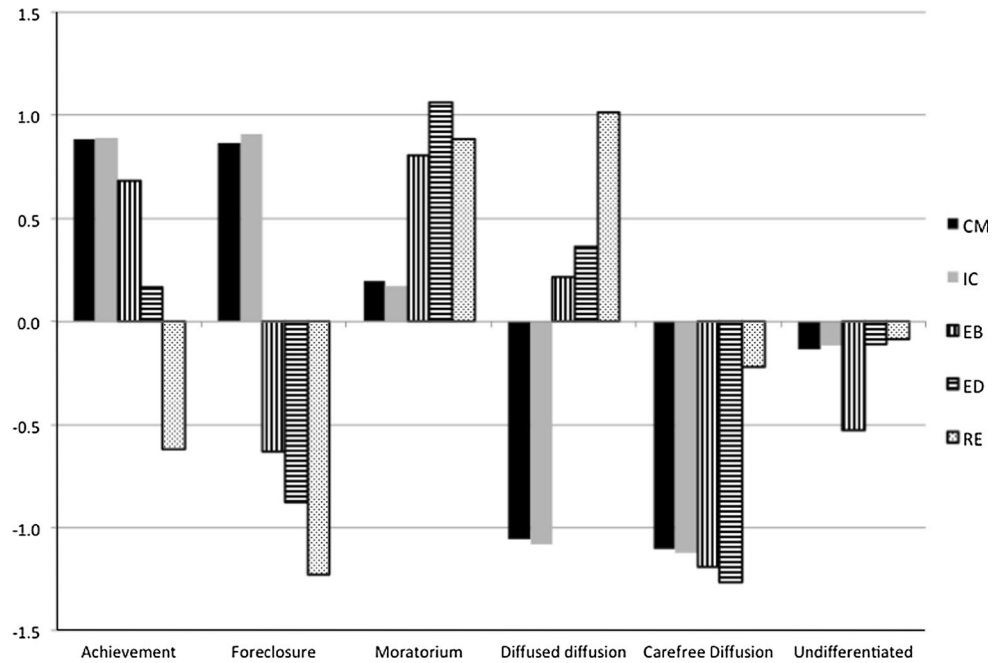


Table 5 Proportion (%) of participants in each identity status cluster

	Sample 1 (N = 1,088)	Sample 2 (N = 687)	Sample 3 (N = 464)
Achievement	19.6	15.4	20.1
Foreclosure	14.2	15.7	14.5
Moratorium	18.6	14.7	17.7
Diffused diffusion	17.1	16.8	18.2
Carefree diffusion	8.3	14.7	11.3
Undifferentiated	22.2	22.7	18.2

characterized by very low to intermediate scores on both commitment dimensions and moderate to very high scores on exploration dimensions. The Diffused Diffusion cluster scored very low on both commitment dimensions, low to intermediate on exploration in breadth, intermediate to moderately high on exploration in depth, and high to very high on ruminative exploration. Carefree Diffusion was characterized by very low (in samples 1 and 3) to intermediate scores (in sample 2) on both commitment dimensions, very low scores on exploration in breadth and exploration in depth, and very low to intermediate scores on ruminative exploration. Finally, the Undifferentiated cluster scored intermediate on all five dimensions, except for a moderate low score on exploration in breadth in the adolescent sample (sample 3).

Another step of analysis was to validate the 6-cluster solution by examining the extent to which the identity status clusters would be differentiated by EIPQ-SF identity exploration and commitment mean scores. Two one-way ANOVAs with Tukey post hoc tests were performed in

each sample. Results (*F* values, η^2 , and pairwise comparisons) are reported in Table 6. Globally, the six cluster statuses differed significantly from one another on exploration and commitment. On Exploration, as expected, Achievement and Moratorium clusters scored highest, whereas Carefree Diffusion and Foreclosure scored lowest. On commitment, Foreclosure and Achievement scored highest and Diffused Diffusion and Moratorium scored lowest.

Discussion

The present study was designed to examine, for the first time, whether the Luyckx’s five-dimensional process-oriented identity model (Luyckx et al. 2008) can be applied with emerging adult students and adolescents in French-speaking contexts, where there is a scarcity of studies focusing on identity in youth in the neo-Eriksonian tradition. The results of this study provide preliminary evidence of the factorial, reliability, and convergent validity of the French adaptation of the DIDS. In line with Schwartz et al.’s (2012) hypothesis, our results suggest on one hand that the structure of identity formation presents strong resemblances with what was observed previously in western countries like Belgium, Italy and the United States, but, on the other hand, that identity processes are endorsed and understood differently and in a particular way (e.g., exploration in depth) in French-speaking contexts.

Confirmatory factor analyses for emerging adults (sample 1 and 2) and adolescents (sample 3) indicated that the five-factor model of the DIDS had an acceptable fit, after residuals

Table 6 EIPQ dimensions (exploration and commitment) by identity status cluster

Variable	Sample	Cluster						F value	η^2
		Achievement	Foreclosure	Moratorium	Diffused diffusion	Carefree diffusion	Undifferentiated		
EIPQ-exploration	Sample 1	4.31 ^a (.66)	3.99 ^c (.72)	4.37 ^a (.65)	4.20 ^{ab} (.61)	3.74 ^d (.84)	4.00 ^{bc} (.60)	18.45*	.08
	Sample 2	4.54 ^a (.56)	4.24 ^b (.73)	4.35 ^{ab} (.55)	3.86 ^c (.65)	3.92 ^c (.68)	4.22 ^b (.63)	17.77*	.11
	Sample 3	4.20 ^{ab} (.79)	3.62 ^c (.84)	4.50 ^a (.69)	4.19 ^{ab} (.70)	3.65 ^c (.71)	3.91 ^{bc} (.61)	16.50*	.15
EIPQ-commitment	Sample 1	3.97 ^{ab} (.62)	4.05 ^a (.69)	3.76 ^{cd} (.72)	3.55 ^d (.66)	3.65 ^{cd} (.73)	3.83 ^{bc} (.63)	13.10*	.06
	Sample 2	3.88 ^a (.70)	3.97 ^a (.71)	3.53 ^b (.65)	3.51 ^b (.58)	3.87 ^a (.58)	3.81 ^a (.65)	9.62*	.07
	Sample 3	4.02 ^{ab} (.71)	4.19 ^a (.61)	3.81 ^b (.68)	3.48 ^c (.70)	3.37 ^c (.76)	3.96 ^{ab} (.63)	14.84*	.14

Standard deviations are in parentheses. Within each row, cluster means sharing a common subscript are not statistically different

* $p < .001$

of three pairs of items were allowed to covary because of a high degree of overlap in French item content. This argues for the potential development of a short version of the DIDS. The internal reliability of the subscales was excellent, except for exploration in depth, which had poor reliability (i.e., Cronbach alphas above the recommended cut-off of .70 in the three samples). Additionally, the patterns of correlations between the five identity dimensions were consistent across the three samples and in line with what previously was observed in Belgian-Dutch and Italian samples (Crocetti et al. 2011; Luyckx et al. 2008), except for exploration in depth, which was associated slightly negatively with commitment dimensions. As suggested by our further reliability analyses and correlational findings, the exploration in depth dimension may be subdivided in two main types or aspects (ED_a and ED_b). First, based on the correlation pattern showing that ED_a was related positively to commitment making (CM) and identification with commitment (IC), it might be assumed that the first aspect of exploration in depth (ED_a) refers to the careful evaluation of existing commitments. Second, in contrast, ED_b was related negatively to the commitment dimensions (CM and IC), suggesting that the second aspect of exploration in depth (ED_b) refers to a certain form of reconsideration of commitment corresponding to individuals' efforts to change or discard current commitments (Crocetti et al. 2008; Meeus et al. 2010). This second aspect of exploration in depth (ED_b) also was related positively to ruminative exploration, whereas the first aspect (ED_a) was unrelated or even negatively related to ruminative exploration in the adolescent sample (sample 3). Based on these results, we propose that the conceptualization of exploration in depth is, on the one hand, similar to Luyckx et al. (2006) and Luyckx et al. (2008) proposition, as it encompasses a thorough evaluation of current commitments that may strengthen them and serve identification with commitment (i.e., I'm happy with this choice, it really fits me). On the other hand, in line with Grotevant's ideas (1987), our results suggest that actively reflecting on and gathering more

information about existing commitments also may led to re-evaluate and reconsider them, especially when the commitment and the current sense of identity is unsatisfactory (Luyckx et al. 2011; Schwartz 2001). Interestingly, this hypothesized distinction between two aspects of exploration in depth may be a heuristic starting point for a "new" identity model (Beyers 2012), combining the contributions of two fine-grained process-oriented model of identity development (i.e., the three-dimension model of Meeus and Crocetti and the five-dimension model of Luyckx and colleagues, see Fig. 4 for a graphical presentation of this hypothesized model). To explain the interplay among identity dimensions illustrated in Fig. 4, let us take, for instance a nineteen-year-old boy starting to study Psychology at the university. During his last year of high school, he has explored diverse possibilities for academic majors through, for example, talking with his parents, teachers and friends, surfing on the Internet to get information (exploration in breadth). Finally, he decided to choose to study Psychology (commitment making), because he always has been interested in understanding people's behavior and experience, and found the reading of Freud's case studies very

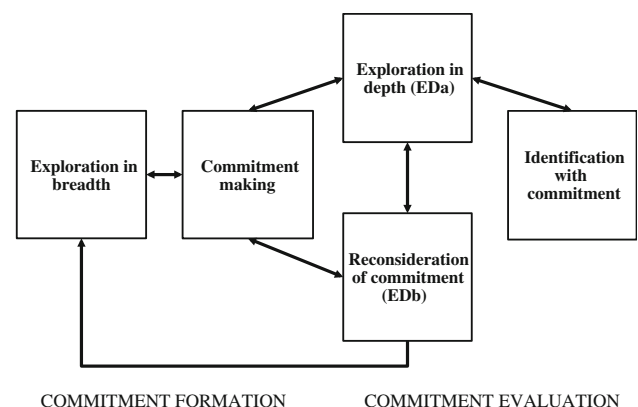


Fig. 4 Graphical representation of the new hypothesized identity model (inspired from Beyers 2012; Luyckx et al. 2011)

stimulating. Since the beginning of his studies, he has continued to gather information about the Psychology program as well as the curriculum to become a psychoanalyst (ED_a—exploration in depth). He rapidly realized that the curriculum did not correspond to his expectations (e.g., introduction to statistics, experimental psychology), leading to a growing conviction that the chosen major was inadequate. In this situation, his commitment needed to be reconsidered (ED_b—reconsideration of commitment) and will likely not be identified with (identification with commitment). Longitudinal research obviously is needed to examine how these identity dimensions interact over time.

Relationships between DIDS identity processes, EIPQ-SF dimensions and identity styles (ISI-3), examined for the first time in this study, provided further support to the DIDS' convergent validity. Specifically, regarding the associations between ISI-3 identity styles and DIDS identity dimensions, the present findings revealed that the informational style was related positively to commitment dimensions and to adaptive exploration dimensions (EB and ED), and unrelated, except in the adolescent sample (sample 3), to ruminative exploration; the normative style was positively associated with commitment dimensions, and to a smaller extent to exploration dimensions (especially to ED_a); and the diffuse-avoidant style was associated negatively with commitment dimensions and exploration dimensions, but especially with the first aspect of exploration in depth (ED_a), and positively related to ruminative exploration and, except in the adolescent sample (sample 3), to the second aspect of exploration in depth (ED_b corresponding to reconsideration of commitment, see *supra*). Overall, these results are in line with available literature (Berzonsky 2004; Crocetti et al. 2009; Zimmermann et al. 2012), and add support for the proposed distinction of the two aspects of exploration in depth. Globally, as expected, informational style is linked to constructive identity work (i.e., active exploration and engagement); normative style is associated with strong commitments and identity stability (i.e., absence of reconsideration of commitment); and diffuse-avoidant style is related to a condition of identity uncertainty, with a lack of commitment or reconsideration of commitment accompanied by maladaptive exploration. It is noteworthy that in the adolescent sample ruminative exploration is associated positively with informational style and unrelated to diffuse-adolescent style. This latter result suggests, on one hand, that compared to emerging adults, the process of identity formation may be especially anxiety-provoking in adolescence because of the indecision and uncertainty inherent to the process (Kroger 2003), and, on the other hand, that thinking of abandoning existing commitment and searching for new ones is typical of adolescence and not indicative of a defensive avoidance of identity issues (Berzonsky 2004).

Using a two-step empirical clustering procedure, six meaningful identity statuses emerged in the three samples. Globally, the six clusters (i.e., Achievement, Foreclosure, Moratorium, Carefree diffusion, Diffused diffusion and Undifferentiated) extracted show important similarities to those previously described in Belgian-Dutch, Italian and North-American samples (Crocetti et al. 2011; Luyckx et al. 2008a, b, 2009, 2010; Schwartz et al. 2011), suggesting that the patterns of identity development is much the same in different Western countries (Schwartz et al. 2011, 2012). It should be noted, however, that, despite this general pattern of resemblance, there are some specific results that deserve our attention. First, the foreclosure profile observed in the sample 2, characterized by a moderate level of exploration in breadth, appears similar to what Kroger (1995) has identified as *Developmental foreclosure* (i.e., likely change) in which “individuals could be expected to enter a moratorium phase at some future time” (Kroger 1995, p. 318). The exploration observed in these foreclosed Swiss emerging adult students (e.g., someone who chooses to enrol in the Faculty of Humanities but who is hesitating between the different majors like sociology, psychology or anthropology and keeps on exploring the different options) might be explained by the exposure to a great diversity of challenging new ideas, opinions and people characteristic of the university life (Fitch and Adams 1983; Waterman and Waterman 1971). However, contrary to the Swiss students, the French emerging adult students scored low on exploration in breadth. This differential pattern of foreclosure profile may be attributable, in part, to such factors as the way the educational system is structured, the state of the job market, the outlook for the future, and the meaning of the transition to adulthood (Van de Velde 2008). In France, the transition to adulthood typically is considered a period that should be devoted to education, which ideally would contribute to the rapid integration of young people into the job market. In these circumstances, there is an urgency and a pressure for youth to find a socio-professional niche (Van de Velde 2008), a context that is not favourable to the exploration of alternatives. Compared to France, in the privileged context of Switzerland (i.e., economic success, albeit the economic crisis and recent difficulties; low rate of unemployment; social prestige of university qualifications, see *infra*), our results suggest that the society is tolerant toward students pursuing various explorations and that university is a suitable context in which individuals choose their own path and define what they want out of life. Second, like in the Belgian-Dutch and Italian samples (Luyckx et al. 2008a, b, 2009, 2010; Crocetti et al. 2011), the Moratorium cluster that emerged in our results could be labelled *Ruminative moratorium*, because of high to very high scores on ruminative exploration (particularly in samples 2 and 3).

Apparently, the proactive exploration process including reconsideration of previous commitments, which is needed to decide and make choice about relevant identity issues, is associated with rumination and worry because of the fundamental uncertainty of one's individual future life. Because young people are especially sensitive to social change, this uncertainty in our late modern societies could even be stronger and exacerbated by the decline of social-institutional markers of the transition from adolescence to adulthood (Côté 2000; Petersen 2000). Third, the Carefree diffusion status observed in Swiss college students (sample 2) was characterized, as expected, by very low scores on all three-exploration dimensions, but intermediate positive scores on both commitment dimensions. A similar profile already was observed in a sample of Belgian-Dutch college students by Luyckx et al. (2005), and is in accordance with the idea that “the carefree diffusion status reflects someone who is unconcerned and content with not having strong commitments or having actively explored” (Dillon et al. 2011, p. 662). Additionally, in the sample of French college students (sample 1), the carefree profile is characterized by a moderate level of ruminative exploration and is thus “not so carefree”. This latter result may be explained by the combination of two elements in the French context: on one hand, a movement of “democratization of education” (i.e., in 2011, 71.6 % obtained the “Baccalauréat” that gives the right to enter the university) and, on the other hand, high perceived contextual constraints like poor employment prospects, job insecurity and high rates of unemployment among young people in France (25.7 % among those aged 15–24, that is to say, more than twice the rate of the general population) (Beaud 2002; INSEE 2013; Lannegrand-Willems et al. 2011). This result underlines the growing difficulty to hold an apathetic or “I don't care” attitude, and to be untroubled by a lack of strong commitment (Archer and Waterman 1990) in a context of economic crisis and high insecurity regarding the future in France. In contrast, in Switzerland, where there is only a small proportion of individuals who obtain a Gymnasium “Maturité/Abitur” (i.e., high school degree that provides unconditioned access to Swiss and foreign universities/20 % in 2011; OFS 2012a), and which is by far one of the countries with the lowest rate of youth unemployment in Europe (5.9 % among those aged 15–24 in 2011; OFS 2012b), Carefree diffusion without ruminative exploration is possible. Finally, it is worthy of note that approximately 17 % of the participants in each sample were classified into the Diffused diffusion status, whereas the proportion of adolescents and emerging adults previously observed in this status in Belgium, Italy and the United States was ranging between 12 and 15 per cent (Crocetti et al. 2011; Luyckx et al. 2008a, b; Schwartz et al. 2011). In his psychosocial approach, Erikson (1968) stressed that identity

formation is a historically and socially embedded process, and Yoder (2000) suggested that, under certain circumstances, contexts could function as *barriers* that limit identity development. The relatively high proportion of the diffused diffusion profile in our study may consequently be due to the current severe socio-economic crisis—a context in which young people find it particularly difficult to construct an identity and a sense of place in the world especially when certain resources are lacking or absent (Côté, 2000).

The present results should be considered in light of some limitations. First, an important limitation is the cross-sectional design of the study. The way identity processes and empirically derived identity status develop over time need to be further examined in longitudinal studies (e.g., Klimstra et al. 2010). Additionally, further studies designed to investigate specifically the differential developmental trajectories in adolescence and emerging adulthood are warranted. Second, the three samples are convenience and emerging adult (sample 1 and 2) that are composed only of university students. The question of the generalizability of our results thus remains open, especially regarding the “forgotten half” not included in our study (i.e., youth entering the labor market after mandatory secondary school; Arnett 2000). Consequently, it would be important to replicate these findings with samples of French-speaking non-student emerging adults. Third, our results are based on gender-unbalanced samples, and it is not known whether the results would have been different if more gender-balanced samples had been used. However, reviewing 30 years of identity research, Kroger (1997) revealed that few gender differences have emerged in the empirical literature. Fourth, regarding the hypothesized distinction of two aspects of exploration in depth, it raises the question whether a two-item scale (ED_a) can detect heterogeneity. Last but not least, we did not evaluate the impact of different environmental contexts on identity, whereas identity formation is basically an intersubjective process embedded in context (Zimmermann and Quartier 2013). Accordingly, based on the Bronfenbrenner's (2005) bioecological model of human development, we believe it is necessary to study identity in context (Beyers and Çok 2008), including macrosystem elements like historical socio-economic influences.

Conclusion

Our results indicate that the French version of the DIDS is a useful instrument for the detailed assessment of the identity processes and their associated identity statuses in French-speaking contexts, providing additional support to the cross-cultural validity of the Luyckx's five-dimensional

identity model. The present results also suggest that exploration in depth may be characterized by two distinguishable aspects (i.e., one aspect leading to a better understanding and to an increase of the strength of current commitments and a second aspect leading to a re-evaluation and a reconsideration of current commitments), at least in our French-speaking samples. Some easily would argue that this result might be an expression of the “cultural exception” very popular in the French-speaking world (Meunier 2000), but more seriously we hope that this hypothesized distinction will stimulate research. Specifically, we encourage identity scholars to test the hypothesized distinction in further research, and possibly to work on a new revised version of the identity dimensional model and the DIDS. The present results also underline differences in identity statuses between two French-speaking national contexts, which encourage further studies across countries but also across cultures in the same country. Furthermore, it is crucial to promote mixed methods in future investigations to provide a more comprehensive understanding of identity processes embedded in socio-historical-cultural contexts.

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Authors' contributions GZ participated in the conception of the study, in its design, coordination and data collection, performed the statistical analysis and drafted the manuscript; LLW participated in the conception, the design, the coordination and the data collection of the study, executed the cluster analysis and participated in the interpretation of data; CSM participated in the conception, the design, the coordination, and the data collection of the study; CC participated in the conception, the design, the coordination, and the data collection of the study. All authors read and approved the final manuscript.

References

- Archer, S. L., & Waterman, A. S. (1990). Varieties of identity diffusions and foreclosures: An exploration of subcategories of the identity statuses. *Journal of Adolescent Research*, 5, 96–111. doi:10.1177/074355489051009.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469–480. doi:10.1037/0003-066X.55.5.469.
- Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives*, 1, 68–73. doi:10.1111/j.1750-8606.2007.00016.x.
- Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist*, 63, 602–614. doi:10.1037/0003-066X.63.7.602.
- Balistreri, E., Busch-Rossnagel, N. A., & Geisinger, K. F. (1995). Development of a preliminary validation of the Ego Identity Process Questionnaire. *Journal of Adolescence*, 18, 179–192. doi:10.1006/jado.1995.1012.
- Beaud, S. (2002). *80% au bac... et après? Les enfants de la démocratisation scolaire [80% getting baccalaureate... and after? The children of the democratization of education]*. Paris: La Découverte.
- Bentler, P. M., & Bonnett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88(3), 588–606.
- Berzonsky, M. D. (1989). Identity style: Conceptualization and measurement. *Journal of Adolescent Research*, 4, 267–281. doi:10.1177/074355488943002.
- Berzonsky, M. D. (1992). *Identity style inventory (ISI3) revised version*. Cortland: State University of New York. Unpublished manuscript.
- Berzonsky, M. D. (2004). Identity processing style, self-construction, and personal epistemic assumptions: A social-cognitive perspective. *European Journal of Developmental Psychology*, 1(4), 303. doi:10.1080/17405620444000120.
- Beyers, W. (2012). Testing identity models and processes in French-speaking adolescents and emerging adults: Some food for thought (discussion). In G. Zimmermann, L. Lannegrund-Willems, C. Safont-Mottay, & C. Cannard (Chair), *Testing identity models and processes in French-speaking adolescents and emerging adults*. Symposium conducted at the XIIIth Biennial conference of European Association for Research on Adolescence, Island of Spetses, Greece.
- Beyers, W., & Çok, F. (2008). Adolescent self and identity development in context. *Journal of Adolescence*, 31, 147–150. doi:10.1016/j.adolescence.2008.03.002.
- Bosma, H. A. (1985). *Identity development in adolescents: Coping with commitments*. The Netherlands: Unpublished doctoral dissertation, University of Groningen.
- Bosma, H. A., & Kunnen, E. S. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review*, 21, 39–66. doi:10.1006/drev.2000.0514.
- Bronfenbrenner, U. (2005). The bioecological theory of human development. In U. Bronfenbrenner (Ed.), *Making human beings human. Bioecological perspectives on human development* (pp. 3–15). Thousand Oaks: Sage.
- Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Press.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7, 309–319. doi:10.1037/1040-3590.7.3.309.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Academic Press.
- Côté, J. E. (2000). *Arrested adulthood. The changing nature of maturity and identity*. New York: New York University Press.
- Côté, J. E. (2009). Identity formation and self-development in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 266–304). New York: John Wiley & Sons.
- Crocetti, E., Luyckx, K., Scignaro, M., & Sica, L. S. (2011). Identity formation in Italian emerging adults: A cluster-analytic approach and associations with psychosocial functioning. *European Journal of Developmental Psychology*, 8(5), 558–572. doi:10.1080/17405629.2011.576858.
- Crocetti, E., Rabaglietti, E., & Sica, L. S. (2012). Personal identity in Italy. *New Directions for Child and Adolescent Development*, 2012, 87–102. doi:10.1002/cad.20023.

- Crocetti, E., Rubini, M., Berzonsky, M. D., & Meeus, W. (2009). Brief report: The identity style inventory—validation in Italian adolescents and college students. *Journal of Adolescence*, *32*, 425–433. doi:10.1016/j.adolescence.2008.04.002.
- Crocetti, E., Rubini, M., Luyckx, K., & Meeus, W. (2008a). Identity formation in early and middle adolescents from various ethnic groups: From three dimensions to five statuses. *Journal of Youth and Adolescence*, *37*, 983–996. doi:10.1007/s10964-007-9222-2.
- Crocetti, E., Rubini, M., & Meeus, W. (2008b). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence*, *31*, 207–222. doi:10.1016/j.adolescence.2007.09.002.
- Crocetti, E., Schwartz, S., Fermani, A., & Meeus, W. (2010). The Utrecht Management of Identity Commitment Scale (U-MICS): Italian validation and cross-national comparisons. *European Journal of Psychological Assessment*, *26*, 169–183. doi:10.1027/1015-5759/a000024.
- Dillon, F. R., Worthington, R. L., & Moradi, B. (2011). Sexual identity as a universal process. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 649–670). New York: Springer.
- Erikson, E. H. (1968). *Identity, youth and crisis*. New York: Norton.
- Erikson, E.H. (1980). Growth and crises of the healthy personality. In E.H. Erikson (Ed.), *Identity and the life cycle* (pp. 51–107). New York: Norton (Reprinted from *Symposium on the healthy personality*, pp. 91–146, by M. J. E. Senn, Ed., 1950, Oxford, England: Josiah Macy, Jr. Foundation).
- Fitch, S., & Adams, G. (1983). Ego identity and intimacy status: Replication and extension. *Developmental Psychology*, *19*(6), 839–845.
- Grotevant, H. D. (1987). Toward a process model of identity formation. *Journal of Adolescent Research*, *2*, 203–222. doi:10.1177/074355488723003.
- Hambleton, R. K. (2001). The next generation of ITC test translation and adaptation guidelines. *European Journal of Psychological Assessment*, *17*, 164–172. doi:10.1027//1015-5759.17.3.164.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55. doi:10.1080/10705519909540118.
- Iacobucci, D., & Duhachek, A. (2003). Advancing alpha: Measuring reliability with confidence. *Journal of Consumer Psychology*, *13*, 478–487. doi:10.1207/S15327663JCP1304_14.
- INSEE (2013, March 7). *Chômage [Unemployment]*. Paris: Institut national de la statistique et des études économiques. Retrieved from <http://www.insee.fr/fr/themes/info-rapide.asp?id=14>.
- Klimstra, T. A., Hale, W. W., I. I. L., Raaijmakers, Q. A. W., Branje, S. J. T., & Meeus, W. H. J. (2010). Identity formation in adolescence: Change or stability? *Journal of Youth and Adolescence*, *39*, 150–162. doi:10.1007/s10964-009-9401-4.
- Klimstra, T. A., Luyckx, K., & Meeus, W. H. J. (2012). Personal identity in Belgium and The Netherlands. *New Directions for Child and Adolescent Development*, *2012*, 19–34. doi:10.1002/cad.20020.
- Kroger, J. (1995). The differentiation of firm and developmental foreclosure identity statuses: A longitudinal study. *Journal of Adolescent Research*, *10*, 317–337. doi:10.1177/0743554895103002.
- Kroger, J. (1997). Gender and identity: The intersection of structure, content, and context. *Sex Roles*, *36*, 747–770. doi:10.1023/A:1025627206676.
- Kroger, J. (2003). Identity development during adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 205–226). Malden, MA: Blackwell Publishing.
- Kroger, J., & Marcia, J. E. (2011). The identity statuses: Origins, meanings, and interpretations. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 31–54). New York: Springer.
- Lannegrand-Willems, L., Sabatier, C., & Brisset, C. (2011). France. In J. J. Arnett (Ed.), *Adolescent psychology around the world* (pp. 257–271). New York: Psychology Press.
- Luyckx, K., Duriez, B., Klimstra, T. A., & De Witte, H. (2010). Identity statuses in young adult employees: Prospective relations with work engagement and burnout. *Journal of Vocational Behavior*, *77*, 339–349. doi:10.1016/j.jvb.2010.06.002.
- Luyckx, K., Goossens, L., & Soenens, B. (2006a). A developmental contextual perspective on identity construction in emerging adulthood: Change dynamics in commitment formation and commitment evaluation. *Developmental Psychology*, *42*, 366–380. doi:10.1037/0012-1649.42.2.366.
- Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006b). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence*, *29*, 361–378. doi:10.1016/j.adolescence.2005.03.008.
- Luyckx, K., Goossens, L., Soenens, B., Beyers, W., & Vansteenkiste, M. (2005). Identity statuses based upon four rather than two identity dimensions: Extending and refining Marcia's paradigm. *Journal of Youth and Adolescence*, *34*, 605–618. doi:10.1007/s10964-005-8949-x.
- Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., et al. (2008a). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, *42*, 58–82. doi:10.1016/j.jrp.2007.04.004.
- Luyckx, K., Schwartz, S. J., Goossens, L., Beyers, W., & Missotten, L. (2011). Processes of personal identity formation and evaluation. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 76–98). New York: Springer.
- Luyckx, K., Seiffge-Krenke, I., Schwartz, S. J., Goossens, L., Weets, I., Hendrieckx, C., et al. (2008b). Identity development, coping, and adjustment in emerging adults with a chronic illness: The sample case of type 1 diabetes. *Journal of Adolescent Health*, *43*, 451–458. doi:10.1016/j.jadohealth.2008.04.005.
- Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: Bridging self-determination theory and process oriented identity research. *Journal of Counseling Psychology*, *56*, 276–288. doi:10.1037/a0015349.
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, *3*, 551–558. doi:10.1037/h0023281.
- Marcia, J. E. (1989). Identity and intervention. *Journal of Adolescence*, *12*, 401–410. doi:10.1016/0140-1971(89)90063-8.
- Meeus, W. (1996). Studies on identity development in adolescence: An overview of research and some new data. *Journal of Youth and Adolescence*, *25*, 569–598. doi:10.1007/BF01537355.
- Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of Research on Adolescence*, *21*, 75–94. doi:10.1111/j.1532-7795.2010.00716.x.
- Meeus, W., Iedema, J., & Maassen, G. H. (2002). Commitment and exploration as mechanisms of identity formation. *Psychological Reports*, *90*, 771–785. doi:10.2466/PRO.90.3.771-785.
- Meeus, W., van de Schoot, R., Keijsers, L., Schwartz, S. J., & Branje, S. (2010). On the progression and stability of adolescent identity formation: A five-wave longitudinal study in early-to-middle and middle-to-late adolescence. *Child Development*, *81*, 1565–1581. doi:10.1111/j.1467-8624.2010.01492.x.

- Meunier, S. (2000). The French exception. *Foreign Affairs*, 79(4), 104–116.
- Nakamura, Y. M., Bieri Buschor, C., & Sedlak, I. (2007). Switzerland. In J. J. Arnett (Ed.), *International encyclopedia of adolescence* (Vol. 2, pp. 966–980). New York: Routledge.
- OFS (2012a). *Maturité gymnasiale [High school diploma]*. Neuchâtel: Office fédéral de la statistique. Retrieved from www.bfs.admin.ch.
- OFS (2012b). *Chômage des jeunes [Youth unemployment]*. Neuchâtel: Office fédéral de la statistique. Retrieved from www.bfs.admin.ch.
- Petersen, A. C. (2000). Adolescents in the 21st century: Preparing for an uncertain future. In L. J. Crockett & R. K. Silbereisen (Eds.), *Negotiating adolescence in times of social change* (pp. 294–298). Cambridge: Cambridge University Press.
- Scholte, R. H. J., van Lieshout, C. F. M., de Wit, C. A. M., & van Aken, M. A. G. (2005). Adolescent personality types and subtypes and their psychosocial adjustment. *Merrill-Palmer Quarterly*, 51, 258–286. doi:10.1353/mpq.2005.0019.
- Schwartz, S. J. (2001). The evolution of Eriksonian and, Neo-Eriksonian identity theory and research: A review and integration. *Identity: An International Journal of Theory and Research*, 1, 7–58. doi:10.1207/S1532706XSWHARTZ.
- Schwartz, S. J., Beyers, W., Luyckx, K., Soenens, B., Zamboanga, B. L., Forthun, L. F., et al. (2011). Examining the light and dark sides of emerging adults' identity: A study of identity status differences in positive and negative psychosocial functioning. *Journal of Youth and Adolescence*, 40, 839–859. doi:10.1007/s10964-010-9606-6.
- Schwartz, S.J., Donnellan, M.B., Ravert, R.D., Luyckx, K., & Zamboanga, B.L. (2012). Identity development, personality, and well-being in adolescence and emerging adulthood: Theory, research, and recent advances. In I.B. Weiner (Series Ed.), and R.M. Lerner, A. Easterbrooks, & J. Mistry (Vol. Eds.), *Handbook of psychology, vol. 6: Developmental psychology* (2nd ed.) (pp. 339–364). New York: John Wiley and Sons.
- Schwartz, S. J., Zamboanga, B. L., Meca, A., & Ritchie, R. A. (2012b). Identity around the world: An overview. *New Directions for Child and Adolescent Development*, 2012, 1–18. doi:10.1002/cad.20019.
- Stephen, J., Fraser, E., & Marcia, J. E. (1992). Moratorium-achievement (MAMA) cycles in lifespan identity development: Value orientations and reasoning system correlates. *Journal of Adolescence*, 15, 283–300. doi:10.1016/0140-1971(92)90031-Y.
- R development Core Team (2010). *R: A language and environment for statistical computing*. Vienna, Austria: The R Foundation for Statistical Computing (<http://www.r-project.org/>).
- Todd, C., & Bradley, C. (2001). Evaluating the design and development of psychological scales. In C. Bradley (Ed.), *Handbook of psychology and diabetes: A guide to psychological measurement in diabetes research and management* (pp. 15–42). Hove: Psychology Press.
- Van de Velde, C. (2008). *Devenir adulte. Sociologie comparée de la jeunesse en Europe [Becoming an adult. A comparative sociology of youth in Europe]*. Paris: Presses Universitaires de France.
- Waterman, A., & Waterman, C. (1971). A longitudinal study of changes in ego identity status during the freshman year at college. *Developmental Psychology*, 5(1), 167–173.
- Yoder, A. E. (2000). Barriers to ego identity status formation: A contextual qualification of Marcia's identity status paradigm. *Journal of Adolescence*, 23, 95–106. doi:10.1006/jado.1999.0298.
- Zimmermann, G., Biermann-Mahaim, E., Mantzouranis, G., Genoud, P. A., & Crocetti, E. (2012). The Identity Style Inventory (ISI-3) and the Utrecht-Management of Identity Commitment Scale (UMICS): Factor structure, reliability, and convergent validity in French-speaking college students. *Journal of Adolescence*, 35, 461–465. doi:10.1016/j.adolescence.2010.11.013.
- Zimmermann, G., Mantzouranis, G., & Biermann, E. (2010). Ego identity in adolescence: Preliminary validation of a French short-form of the EIPQ. *Revue Européenne de Psychologie Appliquée/ European Review of Applied Psychology*, 60, 173–180. doi:10.1016/j.erap.2010.01.001.
- Zimmermann, G., & Quartier, V. (2013/in press). Construction identitaire et relations familiales à l'adolescence à l'aune de l'intersubjectivité [Identity construction in adolescence and family relationships in the eyes of intersubjectivity]. In C. Moro, N. Müller-Mirza, & P. Roman (Eds.), *L'intersubjectivité en question : Agrégat ou nouveau concept fédérateur pour la psychologie ?* Lausanne: Editions Antipodes.

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