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Looking at the dark and bright sides of identity formation: New insights from adolescents and emerging adults in Japan

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ABSTRACT

The aim of the present study was to gain new insights into the dark and bright sides of identity formation with a sample of 1851 Japanese adolescents and emerging adults, applying a three-dimensional model of identity formation (i.e., commitment, in-depth exploration, and reconsideration of commitment). By means of cluster analysis, we identified five statuses that strongly resembled statuses extracted in prior research with Western youth: achievement, foreclosure, moratorium, diffusion, and searching moratorium. We found that each status reported a distinct profile in terms of personality and psychosocial problems. Importantly, we found that the searching moratorium status was adaptive in adolescence but not in emerging adulthood. These results suggest that the five statuses are replicable in Japanese adolescents and emerging adults, and that the searching moratorium status presents a combination of the bright and dark sides whose prevalence varies with age. Clinical implications for identity research and intervention programs are discussed.

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Adolescence is a critical period for identity formation. In fact, in this phase individuals strive to construct a sense of sameness and continuity about themselves and try to define their own niche in the society (Erikson, 1968). For adolescents, a coherent and stable sense of identity is often accompanied by high levels of self-esteem and a clear purpose in life; on the contrary, a fragmented and changeable sense of identity increases their feelings of anxiety and their involvement in delinquent behaviors (Luyckx, Schwartz, Goossens, Beyers, & Missotten, 2011). In highly modernized societies, not only adolescence but also emerging adulthood are critical periods for identity formation (Arnett, 2000). Japan is one of the postmodern societies where the transition to adulthood is postponed, especially with respect to the length period of education, and the timing of marriage and parenthood (Arnett, Žukauskienė, & Sugimura, 2014). Thus, both adolescence and emerging adulthood are relevant times for identity formation in Japan, and hence, it is important to study how young people successfully make the transition to adulthood through the process of identity formation. In the present study we examine the profiles of identity statuses (Marcia, 1966), aiming at clarifying the dark and bright sides of identity formation in Japanese adolescents and emerging adults.

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The three-factor model of identity

The vast majority of research on identity has been based on Marcia's (1966) identity status approach. Marcia operationalized Erikson's theory to capture two separate dimensions: exploration (actively questioning before making a decision about which goals, values, and beliefs one wants to pursue) and commitment (making a firm choice and engaging in significant activities toward the implementation of that choice). By crossing these dimensions, four identity statuses were derived: achievement (commitment following exploration), foreclosure (commitment with no exploration), moratorium (ongoing exploration), and diffusion (no commitment and exploration). Findings of the previous studies indicated that high commitment statuses (i.e., achievement and foreclosure) are characterized by high levels of positive adjustments and a condition of identity stabilities; on the contrary, low commitment statuses (i.e., moratorium and diffusion) are characterized by high levels of problem behaviors and a condition of identity instabilities (for review, Kroger & Marcia, 2011). Based on these findings, the former two statuses can be regarded as the "bright side" and the latter two statuses as the "dark side" of identity formation (Crocetti & Meeus, 2014; Schwartz et al., 2011).

Meeus, Crocetti, and their colleagues extended this Marcia's theory by proposing a process identity model that comprises three identity dimensions, namely, commitment, in-depth exploration, and reconsideration of commitment (Crocetti, Rubini, & Meeus, 2008; Meeus, van de Schoot, Keijsers, Schwartz, & Branje, 2010). Commitment refers to making firm choices and actively engaging in the various developmental domains and to the self-confidence derived from these choices. In-depth exploration refers to the extent to which individuals deal with their commitments in an active way (e.g., thinking about their choices, requiring additional information, talking with others about their commitments). Reconsideration of commitment refers to searching for alternative commitments because the current ones are no longer satisfactory.

The three-factor model was validated across a variety of cross-cultural samples (Crocetti, Ciecuch, et al., in press; Dimitrova et al., 2014), as well as across gender, age, and ethnic groups from the same cultural context (Crocetti, Rubini, & Meeus, 2008; Crocetti, Schwartz, Fermani, & Meeus, 2010; Morsünbül, Crocetti, Cok, & Meeus, 2014; Zimmermann, Biermann-Mahaim, Mantzouranis, Genoud, & Crocetti, 2012). In addition, each of the three identity processes was found to be associated with a specific set of personality traits (i.e., Big Five: McCrae & Costa, 1987) and psychosocial problems (Crocetti, Rubini, & Meeus, 2008; Crocetti et al., 2010; Crocetti, Klimstra, Hale, Koot, & Meeus, 2013; Morsünbül et al., 2014). More specifically, commitment was positively associated with extraversion, agreeableness, conscientiousness, emotional stability (conversely neuroticism), and openness, and negatively associated with depression, anxiety, delinquent behaviors and aggression. In-depth exploration was positively associated with agreeableness, conscientiousness, openness, and anxiety, and negatively associated with emotional stability. As for reconsideration of commitment, the results were slightly different between the Netherlands and Turkey. In the Netherlands, reconsideration of commitment was negatively related to extraversion, agreeableness, conscientiousness, openness, and positively related to depression, anxiety, and delinquent behaviors (Crocetti, Rubini, & Meeus, 2008). In Turkey, reconsideration of commitment was negatively related to extraversion and emotional stability and positively related to depression, anxiety, and delinquent behaviors (Morsünbül et al., 2014).

Profiles of identity statuses

The three-factor model can be used to classify individuals into identity statuses, by means of empirically based methods of classification (Crocetti & Meeus, 2014). Prior studies conducted with Western samples (i.e., Italy and Dutch) highlighted that adolescents could be consistently classified into five identity statuses, based on specific combinations of commitment, in-depth exploration, and reconsideration of commitment (Crocetti, Rubini, Luyckx, & Meeus, 2008; Crocetti, Schwartz, Fermani, Klimstra, & Meeus, 2012; Meeus et al., 2010). Specifically, individuals in the achievement cluster scored high on commitment and in-depth exploration but low on reconsideration of commitment. Those who were in the foreclosure cluster scored moderately high on commitment, low on in-depth exploration and reconsideration of commitment. Individuals in the moratorium cluster had low scores on commitment and in-depth exploration but high scores on reconsideration of commitment. Finally, individuals in the diffusion cluster reported low scores on commitment, in-depth exploration, and reconsideration of commitment. These identity clusters resemble Marcia's original identity statuses. Furthermore, a new cluster, searching moratorium, was found for individuals who scored high on commitment, in-depth exploration, and reconsideration of commitment.

Crocetti and her colleagues indicated that the distribution of participants across statuses differed between Italian and Dutch adolescents (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012). In Italy, the percentage of adolescents in the moratorium status was the highest; on the other hand, in the Netherlands, that of adolescents in the foreclosure status was the highest. This result implies that adolescence is postponed in Italy, but not in the Netherlands (Crocetti, Schwartz, et al., 2012).

They also reported distinct profiles of identity statuses with regard to personality traits and psychosocial problems. As for traditional identity statuses (achievement, foreclosure, moratorium, and diffusion), the characters of profiles in Italy and Dutch resembled with each other. Adolescents in the high commitment statuses (i.e., achievement and foreclosure) exhibited high extraversion, agreeableness, conscientiousness, and emotional stability, and low depression, anxiety, and aggression. The foreclosed adolescents showed some extent of rigidity, less extraversion, agreeableness, openness, and conscientiousness compared to the achieved adolescents. On the other hand, adolescents in the low commitment statuses (i.e., moratorium and diffusion) displayed low extraversion, agreeableness, conscientiousness, emotional stability, and openness, and high depression, anxiety, and aggression (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012).

As for the searching moratorium status, the previous research reported differences between countries: Italian adolescents in this status revealed high conscientiousness and openness compared to the foreclosure, moratorium, and diffusion statuses, whereas Dutch adolescents in this status appeared to be similar in personality traits to the moratorium status, but less problematic in psychosocial problems (i.e., anxiety) than it (Crocetti, Schwartz, et al., 2012). About these differences, Crocetti, Schwartz, et al. (2012) pointed out that whether revising current commitment is adaptive or not depends on the social structure.

Given that the statuses with high commitment had high adaptive personality traits (i.e., extraversion, agreeableness, conscientiousness, and openness) and low neuroticism, depression, anxiety, and aggression, and the statuses with low commitment had low adaptive personality traits and high neuroticism, depression, anxiety, and aggression, it is possible to understand the former statuses represent the bright side and the latter statuses represent the dark side of identity formation. However, whether the searching moratorium status represents the bright side or the dark side of identity formation depends on the national contexts.

Identity statuses in Japanese youth

The characteristics of identity statuses, that is, whether each of the statuses is adaptive or not, are assumed to be different among social structures or national contexts (Baumeister & Muraven, 1996; Côté & Levine, 2002). For that reason, in order to improve the understandings of identity formation in adolescence and emerging adulthood, further studies are also needed outside of Western countries. Among youth in Eastern countries, Japanese youth reveal some remarkable and unique features with respect to the transition to adulthood. Firstly, in Japan 98.4% junior high school students go to high school and 55.1% high school students go to university (Statistics Bureau of Japan, 2015). Secondly, the average marriage age of women in Japan is 29.4 years old (Ministry of Health Labour and Welfare, 2014a). Lastly, 64% of Japanese young people aged 20–24 live with their parents (Statistics Bureau of Japan, 2011). These reports suggest that the period of adolescence is postponed with respect to extended period of education, marriage, and parenthood in Japan, and thus, both adolescence and emerging adulthood are the time of exploring identity (Arnett et al., 2014).

Previous studies have reported that Marcia's traditional identity statuses (i.e., achievement, foreclosure, moratorium, and diffusion) were found among Japanese adolescents and emerging adults (for review, Sugimura & Mizokami, 2012). These studies demonstrated that the statuses with high commitments showed high levels of positive adjustments and those with low commitments showed high levels of psychosocial problems, although these studies mainly used the scales developed in Japan. Based on these findings, four traditional identity statuses derived from three identity dimensions would be replicated in Japanese adolescents and emerging adults. Also, the statuses with high commitments and those with low commitments would represent the bright and the dark sides of identity formation, respectively, which resembles findings from adolescents in the Netherlands and Italy (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012).

On the other hand, the previous findings that characteristics of traditional four identity statuses resembled, but that those of searching moratorium differed between Italy and the Netherlands imply that the searching moratorium status might be of particularly sensitive to the national contexts surrounding contemporary young people in respective countries. Focusing on Japan, the searching moratorium status may be acceptable, or represent the bright side of identity formation, in both adolescence and emerging adulthood, since transition to adulthood is postponed likewise in Italy. At the same time, however, searching moratorium in emerging adulthood may contain problematic features. Specifically, in Japan youth can take a driving license at age 18, and most of youth start drinking alcohol by this age although the legal drinking age is 20 years old in Japan (Kubo, Nozu, Sato, Uehara, & Watanabe, 2008). In fact, the ratio of fatality by the exceeding the speed limit was the highest in 20–24 years old in Japan (National Police Agency, 2014). Also, a survey reported that the problems in drinking behaviors (e.g., excessive drinking) among Japanese university students were strongly influenced by the change in their living style, that is, becoming to live alone (Kasamaki, 2012). Thus, Japanese emerging adults increasingly obtain the jurisdiction over personal issues and such a change makes them easier access to risk behaviors (Ferrer-Wreder et al., 2015). These facts may make emerging adults' identity exploration involve an element of danger about the negatively acting out to their external environment.

The present study

The purpose of this study was to examine the association of the identity statuses with personality traits and psychosocial problems in Japanese adolescents and emerging adulthood. In order to accomplish this purpose, as a preliminary step, we confirmed the validation of the three-factor model of identity because only factorial validity on emerging adult samples was examined in Japan (Crocetti, Cieciuch, et al., in press). Firstly, we examined whether the multi-factorial structure of the U-MICS would replicate with Japanese adolescents and emerging adults by using confirmatory factor analysis (CFA) likewise previous research (Crocetti, Cieciuch, et al., in press; Morsünbül et al., 2014). Additionally, we compared age and gender groups to ensure structural invariance in adolescence and emerging adulthood. Based on the previous research, we hypothesized that the fit indices of three-factor model would be better than one- or two-factor model across age and gender groups.

Secondly, we examined the associations between identity dimensions, personality traits, and psychosocial problems to test convergent validity of the U-MICS. Psychosocial problems can be divided into two clusters of problem behaviors: Internalizing problem behaviors and externalizing problem behaviors (Achenbach, 1978). Internalizing problem behaviors

(e.g., anxiety and depressive symptoms) refer to the individual's internal psychological environment rather than their external environment (Achenbach & Edelbrock, 1978). Externalizing problem behaviors refer to behavior problems (e.g., aggressive and delinquent behaviors) that are manifested in individuals' outward behaviors and reflect the youth's negatively acting out on their external environment (Achenbach & Edelbrock, 1978). The internalizing and externalizing problem behaviors are measured by rating of others (i.e., mother, father, or teacher) in adolescents because they may not recognize their behavioral problems correctly, and those in emerging adults are measured by self-report. Based on the findings of the previous research (Crocetti, Rubini, & Meeus, 2008; Morsünbül et al., 2014), we hypothesized that commitment would be positively associated with adaptive personality traits (i.e., extraversion, agreeableness, conscientiousness, and openness) and negatively with neuroticism and psychosocial problems (internalizing and externalizing problem behaviors). In-depth exploration would be positively associated with agreeableness, conscientiousness, openness, and internalizing problem behaviors, and negatively related to neuroticism. With regard to reconsideration of commitment, previous research demonstrated that the pattern of relationships with personality traits were slightly different between countries (i.e., the Netherlands and Turkey), whereas the negative relation to extraversion and the positive linkage to psychosocial problems were consistent in both countries (i.e., Crocetti, Rubini, & Meeus, 2008; Morsünbül et al., 2014). Considering these results, we hypothesized that reconsideration of commitment would be negatively associated with adaptive personality traits in general and positively associated with psychosocial problems.

Lastly, we confirmed whether these three dimensions cluster into the same five identity statuses as proposed by previous research. In line with the findings of previous research with European adolescents (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012) and Japanese youth (Sugimura & Mizokami, 2012), we hypothesized that five identity clusters were expected to be extracted even in Japan.

To address our main purpose, we examined whether the distribution of participants across statuses differed in adolescence and in emerging adulthood. Given that transition to adulthood is postponed in Japan likewise in Italy, we hypothesized that the percentage of participants in the moratorium status would be high in both age groups. Furthermore, we tested the profiles of the identity statuses in the two age groups. In line with previous studies (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012), we hypothesized that the high commitment statuses (i.e., achievement and foreclosure) would score high on extraversion, agreeableness, conscientiousness, and openness, and low on neuroticism and psychosocial problems; on the other hand, low commitment statuses (i.e., moratorium and diffusion) would show the opposite results. Based on previous research (Crocetti, Schwartz, et al., 2012), the searching moratorium cluster would score high on extraversion, agreeableness, conscientiousness, and openness, and low on neuroticism and internalizing problem behaviors. However, based on the previously reviewed literature, we assumed that the profile of searching moratorium would be different with respect to psychosocial problems between adolescents and emerging adults in Japan. Specifically, the emerging adults in this status would score higher on externalizing problem behaviors than the other four traditional identity statuses. In testing the profiles of the identity statuses, we examined the possible gender differences as ancillary analyses to further clarify the bright and dark sides of identity formation in Japanese adolescents and emerging adults.

Method

Participants and procedure

Participants were 1851 Japanese youth (55.4% females; $M_{age} = 16.00$, $SD = 2.45$). They were divided into two age groups; 1233 thirteen and sixteen-year-olds adolescents (51.2% females; junior and high school students), and 618 nineteen-year-olds emerging adults (69.9% females). In addition, we included adolescents' parents ($N = 1233$; 51.6% females; $M_{age} = 45.31$, $SD = 4.83$) to measure internalizing and externalizing problem behaviors of their children. In emerging adults sample, 88.3% were university students, 8% were workers, and 3.7% were unemployed. We collected data using an online research company. All participants were the members of the company (MACROMILL: <http://www.macromill.com/>). They were collected on the condition that they were (1) all Japanese, (2) recruited by random sampling, and (3) approximately 600 for each of the three age groups (i.e., 13 and 16 years old for adolescence, and 19 years old for emerging adulthood). Because adolescents at the ages of 13 and 16 did not register for the research company by themselves, the targets of survey were parents who had children at that ages. Seventy-two percent of the participants lived in urban areas in the Kanto, Chubu, and Kansai districts (i.e., east, central, and middle western parts of Japan, respectively). In both adolescent and emerging adult groups, the majority of individuals (93.3% and 67.8%) have both parents; the remainders have a mother (78.3%). Before the study, both parents and adolescents received an email with information about the purpose of the research; and according to the willingness to participate in the study, they signed an informed consent agreement. This email contained a hyperlink to the web-based survey. Participants received reward points corresponding to 50 JPY (approximately 0.5 US\$) for the completion of the questionnaire. The survey was conducted in March, 2013.

Measures

Identity processes

We assessed identity commitment, in-depth exploration, and reconsideration of commitment using the U-MICS (Crocetti, Rubini, & Meeus, 2008; for the Japanese version see Crocetti, Cieciuch, et al., in press). This measure consisted of 13 items

rated on a 5-point Likert scale ranging from 1 (completely untrue) to 5 (completely true). In this study, one ideological (i.e., education) and one interpersonal (i.e., friendship) domain were considered. The subscales were commitment (5 items for each domain; sample items are “My education/best friend gives me certainty in life”), in-depth exploration (5 items for each domain; sample item are “I think a lot about my education/best friend”), and reconsideration of commitment (3 items for each domain; sample items are “I often think it would be better to try to find a different education/best friend”). For adolescents and emerging adults, Cronbach's alphas for the present sample were .87 and .88 for commitment, .87 and .85 for in-depth exploration, and .80 and .77 for reconsideration of commitment, respectively.

Personality traits

We assessed personality using the Neo Five-Factor Inventory (Neo-FFI; Costa & McCrae, 1992; for the Japanese version see Yoshimura et al., 1998). This measure consisted of 60 items rated on a 5-point Likert scale ranging from 1 (completely untrue) to 5 (completely true). The subscales were neuroticism (12 items; a simplified sample item is “feel inferior”), extraversion (12 items; a simplified sample item is “enjoy talking”), agreeableness (12 items; a simplified sample item is “co-operate”), openness (12 items; a simplified sample item is “curiosity”), and conscientiousness (12 items; a simplified sample item is “clear goals”). For adolescents and emerging adults, Cronbach's alphas were .83 and .84 for neuroticism, .83 and .83 for extroversion, .66 and .63 for agreeableness, .47 and .48 for openness, and .79 and .75 for conscientiousness, respectively.

Internalizing and externalizing problem behaviors

For adolescents, we assessed this construct with the Child Behavior Checklist (CBCL; Achenbach, 1991; for the Japanese version see Sugawara et al., 1999). In CBCL the subscales of internalizing and externalizing problem behaviors consisted of 32 (sample item is “Complains of loneliness”) and 43 items (sample item is “Impulsive or acts without thinking”), respectively. Adolescents' mother or father responded to each item using a 3-point Likert scale: 0 (never), 1 (sometimes), and 2 (frequently applicable). For emerging adulthood, we used the Youth Self-Report (YSR; Achenbach, 1991; for the Japanese version see Kuramoto et al., 1999). The items of YSR were almost same as those in CBCL, and the subscales of internalizing and externalizing problem behaviors consisted of 32 (sample item is “Complains of loneliness”) and 39 (sample item is “Impulsive or acts without thinking”) items, respectively. Emerging adults responded to each item using a 3-point Likert scale: 0 (never), 1 (sometimes), and 2 (frequently applicable). For adolescents and emerging adults, Cronbach's alphas were .93 and .92 for internalizing problems, .92 and .91 for externalizing problems, respectively.

Results

Validity of U-MICS in Japan

Factorial validity: confirmatory factor analyses

To test the factorial validity of Japanese version of the U-MICS, we tested the factor structure of the U-MICS using CFA, conducted by means of AMOS 20.0. Maximum likelihood estimation was used. Three models were compared: a one-factor model in which all of the items loaded on a single identity dimension; a two-factor model consisting of commitment and global exploration (where items assessing in-depth exploration and reconsideration of commitment loaded on the same latent variable); and a three-factor model consisting of commitment, in-depth exploration, and reconsideration of commitment. As done in previous research (Crocetti, Rubini, & Meeus, 2008; Crocetti, Cieciuch, et al., in press), a parceling approach (in a random fashion) was used in the present study. To evaluate the fit of these models, we relied on two fit indices: The comparative fit index (CFI) should exceed .95 and the root mean square error of approximation (RMSEA) should be less than .05, with values less than .08 representing reasonable fit (Kline, 2010). As reported in Table 1, fit indices clearly revealed that the three-factor model provided the best fit to the data. Then, we tested whether the three-factor model fit the data significantly better than the one- and the two-factor models. To ascertain substantial differences, Δ CFI and Δ RMSEA should be more than .010 (Cheung & Rensvold, 2002) and .015 (Kline, 2010), respectively. Findings indicated that the three-factor model fit the data considerably better compared to the one- and the two-factor model. These findings were taken as supporting the multi-factorial structure of Japanese version of the U-MICS in the entire sample.

Next, we examined for measurement invariance of the U-MICS across gender and age groups through consequential multi-group CFAs. We tested different invariance levels (Schmitt & Kuljanin, 2008): (a) configural invariance (the same number of factors and pattern of fixed and freely estimated parameters hold across groups); (b) metric invariance (equivalence of factor loadings indicating that respondents from multiple groups attribute the same meaning to the latent construct of interest); and (c) scalar invariance (invariance of both factor loadings and item intercepts indicating that the meaning of the construct and the levels of the underlying items are equal across groups). As shown in Table 1, results provided strong support for measurement invariance across gender and age groups.

Mean level and correlational analysis

To examine the possible gender differences, a multivariate analysis of variance (MANOVAs) was performed on commitment, in-depth exploration, and reconsideration of commitment as dependent variables, and with gender as an independent variable. At the multivariate level, a significant main effect of gender group in adolescent age group (Wilks's $\lambda = .99$; $F(3, 1229) = 2.74$; $p < .05$, $\eta^2 = .01$) and emerging adult age group (Wilks's $\lambda = .98$; $F(3, 614) = 4.27$; $p < .01$, $\eta^2 = .02$). Findings

Table 1
Fit indices for the U-MICS.

	Model fit indices				Model comparisons	
	χ^2	df	CFI	RMSEA(90%CI)	Δ CFI	Δ RMSEA
U-MICS factor structure (N = 1851)						
1. One-factor model	3459.123	27	.705	.262 (.255–.270)		
2. Two-factor model (compared to 1)	1961.264	26	.834	.201 (.193–.208)	.129	–.061
3. Three-factor model (compared to 2)	308.100	24	.976	.080 (.072–.088)	.142	–.121
Gender invariance (Males = 814; Females = 1037)						
1. Configural invariance	356.244	48	.974	.059 (.053–.065)		
2. Metric invariance (compared to 1)	370.168	57	.973	.055 (.049–.060)	–.001	–.004
3. Full scalar invariance (compared to 2)	411.637	66	.971	.053 (.048–.058)	–.002	–.002
Age invariance (Adolescents = 1233; Emerging Adults = 618)						
1. Configural invariance	348.163	48	.975	.058 (.053–.064)		
2. Metric invariance (compared to 1)	369.859	57	.974	.054 (.049–.060)	–.001	–.004
3. Full scalar invariance (compared to 2)	498.743	66	.963	.060 (.055–.064)	–.011	–.006

Note. χ^2 = Chi-Square; df = degree of freedom; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation and 90% Confidence Interval; Δ = Change in the parameter.

reported in Table 2 indicated that females scored higher on commitment and in-depth exploration in adolescence, whereas men scored higher on reconsideration of commitment in emerging adulthood. Moreover, we calculated correlation coefficients (Table 3). In both age groups, commitment is positively related to adaptive personality traits and negatively related to neuroticism, internalizing and externalizing problem behaviors. In-depth exploration is positively related to extraversion, openness, conscientiousness, and negatively related to internalizing problem behaviors. Reconsideration of commitment is positively related to extraversion and negatively related to agreeableness.

Convergent validity: associations between identity processes and correlates

To test the convergent validity of the U-MICS we examining associations between identity processes and relevant correlates by means of path analyses with observed variables. Findings reported in Table 4 indicated that commitment was positively associated with extraversion, agreeableness, and conscientiousness, and negatively associated with neuroticism and internalizing and externalizing problem behaviors. In-depth exploration was positively related to extraversion, conscientiousness, neuroticism, openness, and externalizing problem behaviors. Reconsideration of commitment was negatively related to agreeableness, and positively related to neuroticism and internalizing and externalizing problem behaviors. Overall, these results indicate that the convergent validity of Japanese version of U-MICS was established.

Creating the identity clusters

To empirically assign Japanese adolescents and emerging adults to identity statuses, we first omitted the 30 outliers (i.e., 1.6% of the sample) because they can impact the results of cluster analysis (Norušis, 2009). We then transformed all dimensions score into Z-scores. Cluster analysis was conducted with a two-step procedure (Gore, 2000). In the first step, a hierarchical cluster analysis was conducted using Ward's method on squared Euclidean distance to individuate the optimal number of classes. We compared cluster solutions with two, three, four, five, and six clusters on the basis of three criteria, namely the theoretical meaningfulness of each cluster, parsimony, and explanatory power (i.e., the cluster solution had to explain approximately 45–50% of the variance of the identity dimensions Milligan & Cooper, 1985). On the basis of these criteria, a five-cluster solution was retained as the most acceptable. In the second step, these initial cluster centers were used as non-random starting points in an iterative *k*-means clustering method.

This five-cluster solution explained 65%, 69%, and 65% of the variance in the three identity dimensions, respectively. We used double-split cross-validation procedure to test the stability of the cluster solution (Breckenridge, 2000; Tinsley & Brown, 2000). In this procedure, the sample was randomly divided into two subsamples, and the full two-step procedure (hierarchical followed by *k*-means clustering) is repeated in each sample. These new clusters are then compared for agreement with the original cluster by means of Cohen's (1960) kappa. We found that the same five clusters were extracted in these subsamples. Levels of agreement between the classification performed in the total sample and those conducted in the two subsamples were excellent, with Cohen's (1960) kappa values of .96 and .90 for the first and second subsamples, respectively.

Table 2
Descriptive statistics in adolescents and emerging adults.

Identity processes	Adolescents			F-value	η^2	Emerging adults			F-value	η^2
	Total	Males	Females			Total	Males	Females		
	(N = 1233)	(N = 628)	(N = 605)			(N = 618)	(N = 186)	(N = 432)		
	M (SD)	M (SD)	M (SD)			M (SD)	M (SD)	M (SD)		
Commitment	3.14 (.57)	3.11 (.57)	3.17 (.57)	4.07*	.00	3.20 (.71)	3.19 (.70)	3.20 (.71)	0.00	.00
In-depth exploration	2.99 (.60)	2.95 (.61)	3.04 (.58)	2.71**	.01	3.15 (.69)	3.10 (.70)	3.17 (.69)	1.29	.00
Reconsideration of commitment	2.68 (.61)	2.66 (.62)	2.69 (.61)	0.58	.00	2.71 (.75)	2.83 (.74)	2.67 (.75)	5.92*	.01

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

Table 3

Correlations among study variables in adolescents (N = 1233) and emerging adults (N = 618).

Dimension	1	2	3	4	5	6	7	8	9	10
1. Commitment	–	.73***	.32***	.30***	.16***	–.07*	.19**	.34***	–.14**	–.17**
2. In-depth exploration	.68***	–	.52***	.32***	.06*	.03	.21***	.31***	–.09**	–.10**
3. Reconsideration of commitment	.21***	.40***	–	.09**	–.27***	.14**	.09**	.15***	.05	.04
4. Extraversion	.36***	.38***	.17**	–	.28***	–.40***	–.04	.24***	–.31***	–.08**
5. Agreeableness	.20***	.05	–.18**	.14**	–	–.35***	–.01	.21***	–.22**	–.22**
6. Neuroticism	–.12**	.02	–.02	–.33***	–.14**	–	.11**	–.29***	.36***	.21***
7. Openness	.10*	.19***	.06	.10*	.12**	.14**	–	.18**	.03	–.03
8. Conscientiousness	.23**	.21***	.00	.29***	.10*	–.31***	.05	–	–.17**	–.24***
9. Internalizing problem behaviors	–.26**	–.13**	.01	–.37***	–.21***	.52***	.07	–.24***	–	.70***
10. Externalizing problem behaviors	–.12**	.02	.11**	.02	–.32***	.25***	.08	–.24***	.70***	–

Note. Adolescents correlations above the diagonal; emerging adults correlations below the diagonal.

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

Fig. 1 presents the final five cluster solution. As can be seen, the five identity clusters (i.e., achievement, foreclosure, moratorium, diffusion, and searching moratorium) found in the previous studies were replicated in Japan. As for foreclosure, the z-score of commitment was standard in the present study, although it was moderately high in the previous studies (Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012). The important features of youth in foreclosure are that they try to maintain their current position and deny or distort disconfirming information (Kroger & Marcia, 2011). This means that foreclosed youth are primarily characterized by low exploration to change themselves. From this viewpoint, this cluster can be regarded as foreclosure.

The differences of identity statuses between adolescents and emerging adults in Japan

Distribution across the identity statuses

The main purpose of this study was to analyze the profiles of identity statuses in two age groups. To examine the distributions of adolescents and emerging adults across the five identity statuses, we conducted chi-square tests. Findings indicated differences by age groups in the distribution of participants across the five identity clusters, $\chi^2(4, N = 1821) = 52.095, p < .001, Cramer's V = .17, p < .001$. As shown in Table 5, adolescents were more likely to be classified into the foreclosure, moratorium, or diffusion clusters than emerging adults, whereas emerging adults were more strongly represented in the achievement and searching moratorium clusters. Additionally, the percentage of participants in the moratorium status was rather high, especially in adolescence.

Profile of the identity statuses in adolescents and emerging adults

In order to confirm the distinct profile of the obtained identity clusters, we performed MANOVAs with personality traits and internalizing and externalizing problem behaviors as dependent variables, and the identity clusters and gender as the independent variables. This allowed us to examine the main effect of identity status and to test whether this was moderated by gender. At the multivariate level, a significant main effect of identity status emerged in adolescent group (Wilks's $\lambda = .75$; $F(28, 4328) = 13.10$; $p < .001, \eta^2 = .07$) and emerging adult group (Wilks's $\lambda = .78$; $F(28, 2125) = 5.32$; $p < .001, \eta^2 = .06$). Specifically, significant gender \times identity cluster interaction effects emerged in emerging adult group (Wilks's $\lambda = .931$; $F(28, 2125) = 1.52$; $p < .05, \eta^2 = .02$).

Post hoc analyses by means of the Tukey test revealed that (Table 6), respondents in the high commitment statuses (i.e., achievement and foreclosure) reported high agreeableness and low psychosocial problems; on the other hand, respondents in the low commitment statuses (i.e., moratorium and diffusion) reported low conscientiousness and high internalizing problem behaviors in both age groups. For the searching moratorium cluster, adolescents scored high on extraversion, conscientiousness, and openness, and low on internalizing problem behaviors, whereas emerging adults scored high on extraversion, conscientiousness, and openness but also on externalizing problem behaviors.

In emerging adult group, for the three dependent variables (i.e., extraversion, $F(4, 595) = 2.48$; $p < .05, \eta^2 = .02$; openness, $F(4, 595) = 2.84$; $p < .05, \eta^2 = .02$; internalizing problem behaviors, $F(4, 595) = 2.51$; $p < .05, \eta^2 = .02$), significant gender \times identity clusters interaction effects emerged. Findings (Table 6) showed that the effects of identity clusters on extraversion, openness, and internalizing problem behaviors were moderated by gender. The differences between identity clusters were more pronounced in the female than in male sample on extraversion, while the differences were found only in the male sample on openness. Furthermore, there were differences among identity statuses on internalizing problem behaviors only in the female sample. Specifically, the diffused women scored the highest, followed by the moratorium and searching moratorium, and the achieved women scored the lowest on internalizing problem behaviors.

Discussion

The purpose of this study was to examine the association of identity statuses with personality traits and psychosocial problems in Japanese adolescents and emerging adults. For this purpose, we first established the factorial validation of

Table 4
Standardized results of path analysis.

Variable	Personality traits										Psychosocial problems			
	Extraversion		Agreeableness		Conscientiousness		Neuroticism		Openness		Internalizing problem behaviors		Externalizing problem behaviors	
	Adolescents	Emerging adults	Adolescents	Emerging adults	Adolescents	Emerging adults	Adolescents	Emerging adults	Adolescents	Emerging adults	Adolescents	Emerging adults	Adolescents	Emerging adults
Commitment	.13**	.19***	.21***	.27***	.24***	.16**	-.18***	-.24***	.08	-.04	-.15***	-.30***	-.19***	-.24***
In-depth exploration	.27***	.24***	.11*	-.04	.13**	.14*	.08	.20***	.16***	.22***	-.04	.05	-.02	.14*
Reconsideration of commitment	-.09**	.04	-.39***	-.22***	.01	-.09*	.15***	-.04	-.02	-.02	.12***	.06	.11***	.10*
R^2	.11***	.17***	.14***	.09***	.12***	.07***	.04***	.03***	.05***	.04***	.03***	.07***	.04***	.04***

Note. R^2 = portion explained variance.
* $p < .05$, ** $p < .01$, *** $p < .001$.

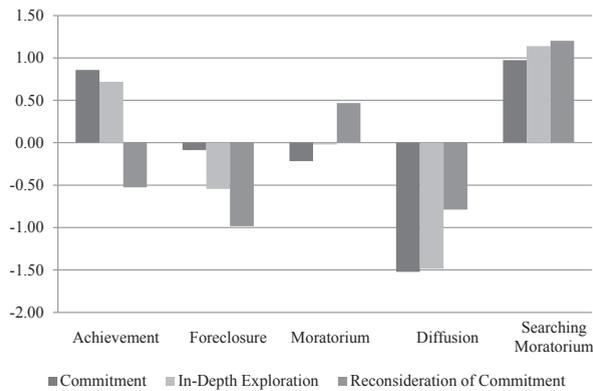


Fig. 1. Z-scores for commitment, in-depth exploration, and reconsideration of commitment for the five statuses.

Japanese version of the U-MICS. We then examined the associations between identity dimensions and personality traits and psychosocial problems to test convergent validity of the U-MICS. To study the main study goal, we empirically assigned participants to the identity clusters, we compared age distributions across the five identity statuses, and we examined the profile of each status in adolescence and emerging adulthood.

Validity of the Japanese version of the U-MICS

Our findings revealed that the U-MICS of the three-factor model fit the data significantly better than the one- and the two-factor models in both adolescence and emerging adulthood. In addition, the results of measurement invariance test demonstrated the establishment of measurement equivalence across gender and age groups. These results are consistent with the findings of the previous studies (Crocetti, Rubini, & Meeus, 2008; Crocetti et al., 2010, Crocetti, Ciecuch, et al., in press; Morsünbül et al., 2014; Zimmermann et al., 2012). Moreover, the three identity dimensions were meaningfully associated with personality traits and psychosocial problems, which is generally line with our hypotheses, indicating that the convergent validity of Japanese version of U-MICS was established. Furthermore, five identity statuses found in European samples (e.g., Crocetti, Rubini, Luyckx, et al., 2008; Crocetti, Schwartz, et al., 2012; Meeus et al., 2010) were also extracted in the current Japanese sample by means of cluster analysis. These results suggest that the three-factor process identity model is valid to capture identity formation in Japanese youth and that they address the identity task in similar ways as their European peers (Crocetti, Luyckx, Scrignaro, & Sica, 2011).

Identity statuses in Japanese adolescents and emerging adults

Our findings indicated that the moratorium was highly represented in both age groups. This pattern was not found in Northern European (i.e., Dutch) adolescents but found in Southern European (i.e., Italian) adolescents (Crocetti, Schwartz, et al., 2012), and thus, suggests the presence of barriers to identity development associated with the extended transition to adulthood in Japan, as evident in Italy (Crocetti, Tagliabue, et al., 2015). In fact, the phenomenon of prolonged adolescence is also evident in Japan, which is represented by the demographic change such as the length of education, and the timing of marriage and parenthood (Arnett et al., 2014). This postponement of transition to adulthood can result in viewing adolescents and emerging adults as a time for reconsidering identity choices more than a period for consolidating identity commitments (e.g., Crocetti, Rabaglietti, & Sica, 2012).

Furthermore, our result also revealed that emerging adults were more likely to be classified into searching moratorium and achievement clusters than adolescents. Considering the searching moratorium status have more positive aspects than the moratorium status (Crocetti, Rubini, Luyckx, et al., 2008), this result implies that emerging adulthood is a time towards to establish stable identity in Japan although both adolescence and emerging adulthood are the timing of identity formation.

Table 5
Proportion of participants in each identity status by age groups.

	Adolescents (N = 1216)	Emerging adults (N = 605)
Achievement	14.1	22.5
Foreclosure	20.0	16.5
Moratorium	40.7	29.1
Diffusion	12.1	10.6
Searching moratorium	13.2	21.3

Table 6
Univariate MANOVA's post hoc cluster comparisons based upon Tukey tests for the five identity statuses.

	Sample	Identity statuses					Adolescents F (7, 1200)	η^2
		Achievement	Foreclosure	Moratorium	Diffusion	Searching Moratorium	Emerging adults F (7, 589)	
Personality traits								
Extraversion	Adolescents	3.28 ^a (.55)	2.94 ^b (.53)	3.02 ^b (.39)	2.81 ^c (.53)	3.21 ^a (.47)	25.54 ^{***}	.08
	Emerging adults	2.94 ^{ab} (.59)	2.63 ^a (.60)	2.79 ^a (.47)	2.34 ^c (.55)	3.01 ^b (.53)	18.78 ^{***}	.11
Agreeableness	Males	2.66 ^{ab} (.10)	2.59 ^{ac} (.11)	2.84 ^{ab} (.07)	2.21 ^c (.11)	3.01 ^b (.08)	9.65 ^{***}	.06
	Females	3.01 ^a (.05)	2.65 ^{bc} (.06)	2.77 ^b (.05)	2.41 ^c (.08)	3.02 ^a (.06)	14.18 ^{***}	.09
Conscientiousness	Adolescents	3.44 ^a (.40)	3.27 ^b (.35)	3.13 ^c (.27)	3.19 ^{bc} (.41)	3.17 ^c (.37)	31.42 ^{***}	.09
	Emerging adults	3.28 ^a (.44)	3.27 ^a (.42)	3.11 (.36)	3.01 ^b (.47)	3.15 (.42)	5.00 ^{**}	.03
Neuroticism	Adolescents	3.09 ^a (.50)	2.92 ^b (.48)	2.95 ^b (.34)	2.71 ^c (.50)	3.13 ^a (.39)	24.18 ^{***}	.07
	Emerging adults	3.14 ^a (.50)	2.98 (.50)	2.98 (.38)	2.86 ^b (.57)	3.12 ^a (.44)	4.58 ^{**}	.03
Openness	Adolescents	2.95 ^a (.61)	3.00 (.55)	3.10 ^b (.41)	3.06 (.61)	3.09 (.47)	4.26 ^{**}	.01
	Emerging adults	3.62 (.60)	3.54 (.58)	3.53 (.60)	3.68 (.66)	3.53 (.57)	1.48	.01
Psychosocial problems	Adolescents	3.09 ^a (.40)	2.98 ^b (.34)	3.02 ^{ab} (.25)	2.88 ^c (.39)	3.08 ^a (.28)	10.89 ^{***}	.04
	Emerging adults	3.28 ^{ab} (.42)	3.15 ^{ac} (.41)	3.17 ^{ac} (.35)	3.08 ^c (.48)	3.29 ^b (.38)	6.07 ^{***}	.04
	Males	3.17 ^a (.07)	3.07 (.08)	3.07 ^a (.05)	2.78 ^b (.08)	3.25 ^a (.06)	6.02 ^{***}	.04
Externalizing Problem Behaviors	Females	3.31 (.04)	3.18 (.05)	3.22 (.04)	3.25 (.06)	3.32 (.04)	2.06	.01
Internalizing problem behaviors	Adolescents	0.11 ^a (.14)	0.15 (.19)	0.17 ^b (.25)	0.18 ^b (.18)	0.15 (.21)	3.01 [*]	.01
	Emerging adults	0.46 (.31)	0.51 (.32)	0.57 (.37)	0.63 (.40)	0.50 (.31)	2.05	.01
	Males	0.48 (.06)	0.38 (.07)	0.48 (.04)	0.48 (.07)	0.51 (.05)	0.62	.00
Externalizing Problem Behaviors	Females	0.46 ^a (.03)	0.56 (.04)	0.61 ^{bc} (.03)	0.72 ^c (.05)	0.50 ^{ab} (.04)	6.17 ^{***}	.04
	Adolescents	0.06 ^a (.09)	0.08 (.14)	0.10 (.22)	0.13 ^b (.20)	0.06 ^a (.13)	3.88 ^{**}	.01
Externalizing Problem Behaviors	Emerging adults	0.39 ^a (.23)	0.39 ^a (.21)	0.44 (.26)	0.45 (.29)	0.48 ^b (.26)	3.35 [*]	.02

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.

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

Regarding the association between the traditional identity statuses (i.e., achievement, foreclosure, moratorium, and diffusion) and correlates, in both age groups, participants in the identity statuses with high commitment (i.e., achievement and foreclosure) had high adaptive personality traits and few psychosocial problems; on the other hand, those in the identity statuses with low commitment (i.e., moratorium and diffusion) displayed the opposite features. These results are in line with our hypotheses, and imply that the bright and dark sides in traditional identity statuses might be common across age groups, and both in Western countries and in Japan.

In addition to this, we found that adolescents in the searching moratorium cluster scored high on extraversion, conscientiousness, and openness, and low on internalizing problem behaviors, whereas emerging adults in the same cluster scored high on extraversion, conscientiousness, and openness, but also high on externalizing problem behaviors. These results demonstrated that, as expected, the individuals in the searching moratorium cluster are well functioning in adolescence, but have both adaptive and maladaptive features in emerging adulthood. Due to the postponement of adolescence (Arnett et al., 2014), the searching moratorium status in adolescence may be acceptable in Japan, similar to the situation in Italy rather than in the Netherlands (Crocetti, Schwartz, et al., 2012). The higher score on externalizing problem behaviors in the searching moratorium status in emerging adulthood can be explained by a maladaptive response to changes in their living environment. Emerging adults are released from school regulations as well as increasingly disengaged from parental control after entering university (Beyers & Goossens, 2003). They may tend to stray into risky behaviors in the unstructured university environment (Ferrer-Wreder et al., 2015). In this context, repeated revision of commitments may possess an element of danger to orient the behavior of emerging adults toward externalizing problems.

Finally, we found gender differences in two of five personality traits and internalizing problem behaviors in emerging adulthood. Especially, when focusing on the dark side of identity formation, it would be notable that the differences between the identity statuses in internalizing problem behaviors were found only in the female sample. A likely explanation of this result may lie in the work situation among women in Japan. A national survey (Ministry of Health Labour and Welfare, 2014b) demonstrated that in Japan 63.3% of working women aged 25–29 had a full time job (81.4% for working men aged 25–29); however, this rate decreased with age down to 44.2% of working women aged 40–44, which was remarkably different from that of working men aged 40–44 (i.e., 91.6%). These reports indicate that although the majority of women make their own career choice in their emerging adulthood, half of them quit their full time job by the middle of forties. Given this situation, young women may have strong anxiety and depression about their identity formation.

Clinical implications

The present results provide useful clinical implications about the dark sides of identity formation in a Japanese sample. First, our findings demonstrated that the adolescents in the moratorium and diffusion statuses were less positively adapted compared to the achievement and foreclosure statuses. In particular, the diffusion represents the most negative response to

the task of identity formation throughout adolescence to emerging adulthood. Also, adolescents in the moratorium status scored as high on internalizing problem behaviors as the diffusion status. These features imply that these Japanese youth are in a stagnant process of identity formation, and that they should be the target of counseling or therapeutic intervention (Marcia, 1987).

Second, the present study indicated that the searching moratorium status in emerging adulthood revealed negative psychosocial functioning (i.e., externalizing problem behaviors). Previous research reported that the some adolescents classified into searching moratorium status transferred to achievement statuses after five years (Meeus et al., 2010). Considering this finding, it is important to develop intervention programs suitable for this life stage, to facilitate successful settling down to commitments and reduce the risk for psychosocial problems in this at-risk group. Concerning the transition from low to high commitment identity statuses, identity researchers in Western countries (Enright, Olson, Ganiere, Lapsley, & Buss, 1984; Markstrom-Adams, Ascione, Braegger, & Adams, 1993) have claimed the importance of intervention in developing youth's social perspective taking skills. The intervention programs they proposed mainly focused on their ability to understand the world from the viewpoint of others (i.e., people, groups, and society) and intended to enhance it by making them think about the differences between self and others. These authors reported that those youth who experienced such programs significantly developed their own identities. Therefore future studies might test the effectiveness of these programs in Japanese youth.

Limitation of the present study and suggestions for future research

An important limitation of the present study was of measuring psychosocial problems. We measured psychosocial problems in the two age groups with different measures and different sources (i.e., parents' report and self-report). Also, it may be possible that parents would not willing to provide inadequate report about their children. Because of this, we could not make direct comparison between the two age groups. Second, although the age range of emerging adulthood was defined as about 19–28 (Arnett, 2000), our emerging adult sample consisted only of the youth at 19 years old. We need to examine whether the results in this study are replicated in a wider range of age group. Lastly, because the Cronbach's alphas of openness were low in the present study, our results regarding this personality trait should be generalized with caution. It needs to reconsideration about internal consistency of this scale in Japanese samples.

Despite these limitations, the present study made an important new step to support the U-MICS model with Japanese samples and provides evidence that this model may be useful in Asian countries. In addition, our findings illustrate the specific feature in identity statuses among Japanese youth. We hope that these findings would inspire future identity research on cultural differences.

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