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Discrimination and Externalizing Problems Among Moroccan- and Romanian-Origin Early Adolescents in Italy: Moderating Role of Cultural Orientations and Impulse Control

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Objective: Although discrimination is a common stressor in the everyday life of immigrant youth, individuals are not equally susceptible to its adverse effects. This cross-sectional study aimed to examine whether cultural orientation preferences and impulse control (IC) moderate the association between perceived discrimination and externalizing problems among Moroccan- and Romanian-origin early adolescents in Italy. **Method:** The sample included 126 Moroccan and 126 Romanian youths (46% girls, 42% first-generation) aged 11–13 years and their parents. Perceived discrimination and cultural orientations were assessed using self-report questionnaires, while IC was evaluated via a computerized version of the Iowa Gambling Task. Externalizing behaviors were assessed via parental report. **Results:** Cluster analysis identified separated, assimilated, and integrated early adolescents. Regression analyses revealed that when facing discrimination, youths who endorsed separation and exhibited low levels of IC were more vulnerable to externalizing problems. In contrast, among assimilated adolescents the discrimination-externalizing difficulties link was significant at high levels of IC. Furthermore, low levels of IC were associated with more externalizing problems for Romanian, but not for Moroccan early adolescents. **Conclusions:** Findings underscore the need to consider both cultural orientation processes and early adolescents' ability to control their impulses when developing interventions aimed to reduce discrimination-related problem behaviors in immigrant youth. Implications for theory and practice are discussed.

Keywords: ethnic discrimination, externalizing problems, cultural orientations, impulse control, immigrant early adolescents

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Early adolescence represents a critical time for the onset and development of externalizing problems (e.g., disruptive and aggressive behaviors; Andersen & Teicher, 2008; Dahl, 2004), especially among immigrant youth (Belhadj Kouider, Koglin, & Petermann, 2014; Dimitrova, Chasiotis, & van de Vijver, 2016). It is during this developmental stage that early adolescents with an immigrant background start to develop a greater awareness of

cultural and personal differences, and begin to question their own group memberships and identities (Phinney, 2006). They define their sense of belonging to the mainstream and heritage cultures, and exposure to social threats such as discrimination increases (Phinney, 1989). Perceived ethnic discrimination refers to unfair treatment due to an individual's race or ethnicity and is a pressing public health concern (Contrada et al., 2000). It represents a crucial risk factor for youths' psychological adjustment (Dimitrova et al., 2016; Eurostat, 2015), especially in younger populations (Schmitt, Branscombe, Postmes, & Garcia, 2014). Thus, understanding the factors that may increase or reduce the noxious effects of discrimination on early adolescents' problem behaviors is a top priority on the research agenda to ensure the successful integration and full realization of immigrants' potential (Motti-Stefanidi & Masten, 2013).

The present study aimed to examine the association between perceived discrimination and externalizing problems in a sample of Moroccan- and Romanian-origin early adolescents in Italy, a southern European country which is currently among the top receiving societies for immigrants in Europe. Specifically, we sought to investigate whether cultural orientations and impulse control (IC) moderate the discrimination-externalizing difficulties link in the two immigrant groups. Cultural orientations refer to how immigrants adapt to their environment by retaining their heritage culture while also endorsing the mainstream culture (Gon-

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zales, Fabrett, & Knight, 2009; Ward & Geeraert, 2016). IC has been defined as the capacity to inhibit an automatic response in order to successfully complete a goal (Bezdjian, Baker, Lozano, & Raine, 2009). We focused on these factors since in separate lines of research, they have been found to buffer the negative effects of environmental stressors on immigrant youths' adaptation (McDermott, Donlan, Anderson, & Zaff, 2017; Umaña-Taylor, 2016). However, to our knowledge, the role of cultural orientations and IC in the association between discrimination and externalizing problems has yet to be addressed in one single investigation.

Discrimination and Externalizing Problems

Ethnic discrimination is a common experience for migrant youths. Indeed, the prevalence of perceived ethnic discrimination for minority youth tends to increase upon entry into adolescence (Umaña-Taylor, 2016). Extensive evidence supports the negative link between perceived discrimination and both physical and psychological well-being (see Pascoe & Smart Richman, 2009 for a meta-analysis). In particular, perceived discrimination is associated with more externalizing problems, including more substance use and engagement in risk-taking and delinquent behaviors, since it provides a macrosystem context that affects ethnic minorities' opportunities and daily experiences in terms of social interactions across different contexts (for a theoretical discussion see Benner, 2017).

Discriminatory experiences are considered complex stressors that adversely affect stress responses and health behaviors (Pascoe & Smart Richman, 2009). In this perspective, discrimination has been widely studied within the stress-coping model which posits that discriminatory experiences reduce children's coping resources and opportunities for personal growth and well-being (Clark, Anderson, Clark, & Williams, 1999). Also, discrimination constitutes an environmental condition which may interact with several individual characteristics to explain externalizing outcomes. Exploring the interaction of environmental characteristics and individual factors is in line with ecological theory (Bronfenbrenner & Morris, 2006), which emphasizes the interactive effects among different contextual and personal levels in links with psychological adjustment.

Consistent with stress-coping and ecological perspectives, theories concerning the association between discrimination and well-being have started to emphasize the crucial role of personal factors which could reduce or increase the overall negative impact of discrimination on problem behaviors (i.e., risk and protective factors; Brody et al., 2006; Major, Quinton, & McCoy, 2002). Here, we focus on cultural orientations as potential moderators of the perceived discrimination-externalizing problems link. In addition, we investigate the role of IC, since in the clinical neuropsychological literature it has been found to interact with both contextual and cultural variables in links with psychological adjustment (Hofmann, Schmeichel, & Baddeley, 2012; Li-Grining, 2012; McDermott et al., 2017). Identifying whether these factors may be protective against externalizing difficulties could inform prevention/intervention programs aimed at helping early adolescents of immigrant origin to cope with discriminatory experiences more effectively.

Cultural Orientations and IC

Immigrant and ethnic minority youths typically have to go through a process of cultural adaptation (Berry, 2003), which involves changes in adaptation to the majority culture (*acculturation*) and changes in the adaptation to, and retention of, the heritage culture (*enculturation*; Gonzales et al., 2009; Ward & Geeraert, 2016). The combination of different levels of acculturation and enculturation processes leads to the endorsement of diverse cultural orientations. Recent research using cluster analysis failed to replicate the four standard cultural orientation categories originally proposed by Berry (1997), supporting the validity of integration (strong orientation to both cultures), assimilation (stronger orientation to settlement culture) and separation (stronger orientation to heritage culture), but questioning the validity of marginalization (weak orientation to both cultures; Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Ward & Geeraert, 2016).

Studies conducted with minority samples in the US have found evidence for the moderating role of cultural orientations in the relation between perceived discrimination and psychological difficulties. Findings suggest that assimilated adolescents are the most vulnerable to discriminatory experiences, since a stronger orientation toward the mainstream society is thought to magnify the salience of discriminatory experiences (Park, Schwartz, Lee, Kim, & Rodriguez, 2013; Umaña-Taylor & Updegraff, 2007). Experiencing discrimination (e.g., being ignored, treated unfairly, or excluded) may have a more negative impact on immigrants when they view themselves as highly integrated in the majority culture.

Preliminary evidence indicates that, when considered simultaneously in the same model, both heritage and mainstream cultural orientations play a protective role in the association between ethnic discrimination and problem behaviors, suggesting that integration may be the most adaptive strategy during adolescence (Musso, Inguglia, & Lo Coco, 2015; Sabatier & Berry, 2008). For instance, in a recent longitudinal study, Zeiders, Updegraff, Kuo, Umaña-Taylor, and McHale (2017) found that discrimination negatively impacted on sleep duration for assimilated Mexican American young adults, whereas no significant association between discrimination and sleep emerged among bicultural and enculturated individuals. Overall, this pattern provides support for the protective role of having a bicultural identity for immigrants (Nguyen & Benet-Martínez, 2013).

In the clinical neuropsychology literature, an important personal variable which was found to moderate the effects of contextual stressors (e.g., poverty, negative parenting) on behavioral outcomes is IC. Findings suggest that the possibility to rely on higher levels of IC reduces the negative impact of environmental stressors (e.g., neighborhood characteristics) on externalizing difficulties (Lynam et al., 2000). However, there is evidence that high levels of IC may not be enough to reduce the risk of worse behavioral outcomes in the context of high emotional distress in adolescent samples (McDermott et al., 2017; Ray, Thornton, Frick, Steinberg, & Cauffman, 2016; Zimmerman, 2010). Thus, among early adolescent immigrants faced with discrimination, IC may interact with specific cultural orientations in links with externalizing behaviors. That is, the protective role of IC in the face of discriminatory experiences may vary as a function of early adolescents' cultural orientations (i.e., three-way interactions; Li-Grining, 2012; Ment-

ing, Van Lier, Koot, Pardini, & Loeber, 2016). However, the potentially interactive role of contextual influences and IC in links with externalizing behaviors is inconsistent and in need of further study.

The Role of Ethnicity

In this study, we focused on Moroccan- and Romanian-origin early adolescents since these two ethnic groups are relatively underrepresented in the North American immigration literature, but nonetheless represent two of the largest minority groups in Italy and in Europe (Eurostat, 2015). Moroccan immigrants are a visible non-European minority, and are currently the most discriminated group in Europe (Eurobarometer, 2015). Cultural, linguistic, and religious distance from Italian society is emphasized (Giuliani & Tagliabue, 2015). Conversely, Romanians are of European descent, and more closely resemble Italian culture in terms of both values and language (Moscardino, Bertelli, & Altoè, 2011). However, Romanians in Italy have been highly discriminated due to a harsh media and political campaign, which depicted them as the principal authors of crimes in the country (Bencini, Cerretelli, & Di Pasquale, 2009).

Given the different cultural distance of these cultural groups from Italian mainstreamers, it may be expected that discriminatory experiences differently interact with cultural orientations and IC for Moroccan and Romanian early adolescents (Berry & Sabatier, 2010; Closson, Darwich, Hymel, & Waterhouse, 2014; Sam, Vedder, Liebkind, Neto, & Virta, 2008). For example, the reduced cultural distance may render discriminatory experiences more salient for Romanians, who could therefore benefit more than their Moroccan counterparts from enculturation processes (i.e., integration and separation) and/or higher levels of IC.

The Present Study

The current study aimed to investigate the association between perceived discrimination and externalizing problems in Moroccan- and Romanian-origin early adolescents in Italy, postulating the moderating role of cultural orientations and IC. Based on extant research, we anticipated that high levels of discrimination would be related to increased externalizing problems among both ethnic groups (Stevens, Vollebergh, Pels, & Crijnen, 2005; Umaña-Taylor, 2016; Yip, 2015). With regard to cultural orientation processes, we expected assimilation to increase the detrimental effect of perceived discrimination on problem behaviors (Umaña-Taylor & Updegraff, 2007), whereas for separated and integrated adolescents we anticipated a less robust association, consistent with prior studies emphasizing the protective role of enculturation processes (Musso et al., 2015; Zeiders et al., 2017). In terms of IC, we hypothesized that the discrimination-externalizing behavior link would be more pronounced among early adolescents exhibiting low as opposed to high IC. Further, we explored whether IC would moderate the relation between discrimination and externalizing difficulties differently according to one's cultural orientation (three-way interaction). Despite the lack of studies considering these variables simultaneously in one investigation, we speculated that IC might play a more salient role for assimilated early adolescents, given that this group is the most vulnerable to discriminatory experiences. In addition, because evidence suggests that

ethnic background may be related to the experience of discrimination as well as to the endorsement of specific cultural orientation strategies (Berry & Sabatier, 2010; Ward & Geeraert, 2016), we examined whether the association between discrimination and cultural orientations in links with externalizing problems varied by ethnicity. Similarly, we explored whether IC showed similar associations in links with perceived discrimination and externalizing problems across ethnic groups (three-way interactions).

In our analyses, we included age, gender, SES, and generation as control variables, because they have been found to influence behavioral outcomes in migrant youth (see Belhadj Kouider et al., 2014; Dimitrova et al., 2016). We also used nonverbal IQ as a covariate, since there is evidence showing its impact on IC across developmental stages (Toplak, Sorge, Benoit, West, & Stanovich, 2010).

Method

Participants

Participants were recruited in the north-eastern region of Italy and were part of a larger study of national and immigrant early adolescents' socioemotional adjustment. The sample included 126 Moroccan-origin (42.1% girls; 25.4% born in Morocco) and 126 Romanian-origin (49.2% girls; 57.9% born in Romania) early adolescents and their parents. All adolescents were aged between 11 and 13 years. The mean age was 12.02 ($SD = .82$) and 12.10 ($SD = .80$) for Moroccan- and Romanian-origin youth, respectively. On average, first generation Moroccan-origin youth (i.e., foreign-born) had been residing in Italy for $M = 7.47$ years ($SD = 2.50$, range 2–13) and first-generation Romanian-origin youth for $M = 6.73$ years ($SD = 2.58$, range 1–12). The majority (89.7%) of adolescents were from two-parent families, whereas 8.7% were from single-parent (including never married, divorced, or widowed) families. Four parents (1.6%) did not report on their marital status. In terms of socioeconomic status (SES), Moroccan- and Romanian-origin adolescents reported a medium level as assessed via the Family Affluence Scale (FAS; Currie, Molcho, Boyce, Holstein, Torsheim, & Richter, 2008; $M = 4.21$, $SD = 1.80$, range 0–8; $M = 5.44$, $SD = 1.79$, range 1–9; respectively). Romanian adolescents were more likely to report medium-high SES than their Moroccan peers, $t(250) = 5.47$, $p < .001$, Cohen's $d = 0.69$, whereas gender and age were balanced across the two groups. Moroccan immigrant early adolescents were more likely to be second-generation (born in Italy) than their Romanian counterparts, $\chi^2(1) = 27.45$, $p < .001$, Cramer's $V = .32$.

The study protocol and procedures were approved by the Ethics Committee of the School of Psychology, University of Padova (protocol #1473–2014).

Procedure

Data were collected between November 2014 and April 2016. Participants were recruited by establishing partnerships with schools with large immigrant student populations. The project was described as a research study on psychosocial adjustment in early adolescence in multicultural contexts. Parents who expressed an interest in the study were asked for a signed informed consent, and children were asked for additional verbal assent. Eligibility criteria

were as follows: (a) the adolescent was between 11 and 13 years old; (b) the adolescent lived with at least one of her/his biological parents, (c) the early adolescent was either of Moroccan or Romanian origin; (d) the early adolescent was either foreign-born (i.e., first-generation) or born in Italy. Data collection with early adolescents took place at school. Each youngster was assessed individually in a quiet room by trained research assistants, whereas parents were asked to complete a questionnaire packet at home. Response rates for the Moroccan and Romanian parents were 60%, and 61%, respectively, and all their children gave their assent to participate in the study.

Immigrant parents could decide to complete the questionnaires either in their native or in Italian language. Overall, 124 (49.2%) parents completed the questionnaires in the Italian language, whereas the remaining 128 (50.8%) preferred to complete them in their native language. Early adolescents were tested in Italian in two separate sessions of approximately 45 min each within a week-time distance. The assessment consisted of questionnaires, performance and computer-based tasks. In the first session, adolescents completed the Raven's Standard Progressive Matrices followed by a set of self-report measures. IC was assessed during the second session on a laptop computer with E-Prime 2 software (Schneider, Eschman, & Zuccolotto, 2002). For each task, the participant and experimenter were seated side by side at a table. All questionnaires and verbal instructions for adolescents that had not been previously validated in one of the target languages were translated, back-translated, and piloted following the procedures outlined by Van de Vijver and Leung (1997). Participants were informed that their involvement was voluntary and that their responses would be confidential. The investigator remained in the room while participants completed their surveys to monitor their activity and answer questions.

Measures¹

Perceived ethnic discrimination. Early adolescents' perceived discrimination was measured via the Perception of Racism in Children and Youth questionnaire (PraCy; Pachter, Szalacha, Bernstein, & García Coll, 2010). In the present study we used the short version for children aged 8–13 years, which consists of 10 items describing developmentally appropriate settings where adolescents may experience discrimination. For each item, respondents answer if they have experienced that particular situation and its related frequency. Response options range from “never” (1) to “weekly” (6). Higher mean scores are indicative of higher levels of perceived discrimination. The questionnaire has been used across different ethnic minorities, showing good psychometric properties (Cronholm et al., 2015). Cronbach alphas (Moroccan: .85; Romanian: .82) and McDonald's Omegas (Moroccan: .86, Romanian: .84; Green & Yang, 2009) in the present study were good and similarly reliable in the two samples.

Cultural orientations. Youths' orientation to the mainstream and heritage cultures were evaluated by means of the Cultural and Social Acculturation Scale (CSAS; Chen & Lee, 1996). The CSAS is a bidimensional scale assessing individuals' contact with and engagement in both heritage (enculturation) and mainstream cultures (acculturation). It consists of 32 items, 15 of which refer to the mainstream culture and 17 to the heritage culture. Items were rated on a Likert scale ranging from 1 to 5 points. The average

score of children's responses was computed for each subscale, with higher scores indicating a stronger orientation toward the specific culture. The CSAS items assess cultural orientations in three main domains: language fluency, media use, and social affiliations. The CSAS is available in Chinese and English, and good internal reliabilities were reported in previous studies with Chinese American samples (Chen & Tse, 2010; Chen et al., 2014). Items were translated in the Italian language and adapted to the Italian, Moroccan and Romanian cultures following the procedures suggested by van de Vijver and Leung (1997) and in close collaboration with a team of cultural informants. In the present study, internal consistency of the mainstream (Italian) orientation subscale was $\alpha = .75$ and $\omega = 0.72$ for Moroccan and $\alpha = .77$ and $\omega = 0.72$ for Romanian samples; reliabilities of the heritage orientation subscale were $\alpha = .84$ and $\omega = 0.82$ for Moroccan and $\alpha = .88$ and $\omega = 0.89$ for Romanian samples.

Impulse control. Participants were administered a computerized version of the Iowa Gambling Task (IGT; Bechara, Damasio, Damasio, & Anderson, 1994), the most widely used measure of “hot cognition” (Albert & Steinberg, 2011; Kerr & Zelazo, 2004), which provides a direct assessment of impulsivity (Burdick, Roy, & Raver, 2013). In this task, participants were shown four decks of

¹ Multi-group confirmatory factor analyses (CFAs) using the Diagonally Weighted Least Squares (DWLS) robust estimator were conducted to establish measurement invariance of each questionnaire across ethnic groups. Most of the items in our measures showed a left-skewed distribution, further supporting the appropriateness of an analytical approach which takes the ordinal nature of the data into account (Flora & Curran, 2004). Given the marked asymmetric distribution of most item responses for both the PRaCY and the CSAS, responses to these questionnaires were recoded as a preliminary step to enable us to run a CFA (i.e., preliminary analyses suggested a two-point response format for the PRaCY: Never = 0, all other responses = 1, and a 3-point response format for the CSAS: Responses 1&2 = 1, Response 3 = 3 and Responses 4&5 = 5). According to current guidelines (Schermele-Engel, Moosbrugger, & Müller, 2003), results confirmed scalar invariance for the PRaCY (equality of thresholds and factor loadings) across groups ($\chi^2[78, n = 252] = 102.44, p = .033$; CFI = .98, TLI = .98, RMSEA = .05), showing a very good fit (Cheung & Rensvold, 2002). Scalar invariance was established separately for the two CSAS subscales to increase the reliability of estimates, given the number of items/sample size ratio. In addition, two items of the Mainstream orientation subscale concerning Italian language proficiency (both comprehension and production) could not be included in the model due to the highly skewed response distribution, which clearly showed a ceiling effect. This effect can be explained in light of the characteristics of our sample, which was mostly composed of adolescents who were either born in Italy or had spent on average 6 years in Italy at the time of data collection, and therefore all spoke and understood Italian well. In addition, due to collinearity issues, some residual covariances were included in the models. Results confirmed scalar invariance for both the Mainstream cultural orientation ($\chi^2[151, n = 252] = 237.10, p < .001$; CFI = .94, TLI = .93, RMSEA = .07) and Heritage cultural orientation ($\chi^2[261, n = 252] = 488.88, p < .001$; CFI = .97, TLI = .97, RMSEA = .08) subscales, showing an acceptable fit. Last, as regards the SDQ, item 22 (i.e., “Steals from home, school or elsewhere”) showed a floor effect and therefore had to be removed prior to performing CFA. This effect has been reported in previous studies of ethnic minority youth (see Richter, Sagatun, Heyerdahl, Oppedal, & Røysamb, 2011) and may be linked to both social desirability issues and the use of a non-clinical sample. Results confirmed scalar invariance for the SDQ subscale ($\chi^2[70, n = 252] = 111.94, p = .001$; CFI = .97, TLI = .96, RMSEA = .07), showing a good fit. Given the theoretical importance of all the items to assess our study variables and the limited power of running a multi-group CFA in our relatively small sample, we respected the original validated metric of the questionnaires in all subsequent analyses.

cards displayed in a linear sequence across the screen. They could select cards from a deck by clicking on it with the mouse. When turned, each card revealed a combination of gains and losses (measured in play money). Participants were given a virtual stake of (euro)2000 and asked to win as much money as possible by choosing cards from any of the four decks (one card per trial), treating the play money as if it were real. They were not told how many trials there would be, but they were told that some of the decks were better than others. The two disadvantageous decks delivered large immediate rewards but were disadvantageous in the long run because they also delivered larger losses than rewards, whereas the two advantageous decks delivered smaller immediate rewards than the other two decks but were advantageous in the long run because they delivered even smaller losses. To ensure that participants understood that outcomes were contingent on their selections, 12 training trials in which the experimenter guided them by stating the amounts won and lost preceded the actual experiment. A proportion score was calculated for the number of advantageous and disadvantageous choices for each participant. Subsequently, the proportion of disadvantageous choices was subtracted from the proportion of advantageous choices, with higher positive scores indicating relatively advantageous performance (Prencipe et al., 2011). In brief, better performance at this task requires the capacity to keep in mind different dimensions simultaneously and to focus on long-term outcomes rather than immediate rewards, involving both impulse control and real-life affective decision-making abilities (Burdick et al., 2013; Ursache & Raver, 2015). This task had been previously used successfully with multicultural samples (Icenogle et al., 2017).

Externalizing problems. Early adolescents' externalizing difficulties were assessed by means of the parent-rated version of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). The SDQ is a brief and widely used behavioral screening questionnaire. It consists of 25 items. In the parent-report version, parents of children aged 4 to 16 are asked to rate their children's behaviors on a Likert scale ranging from 0 (not true) to 2 (absolutely true). The Italian parent-report version of the instrument is available and has shown satisfactory psychometric properties (Di Riso et al., 2010; Marzocchi et al., 2004). Moreover, this measure has been used in many countries worldwide and was validated in Romanian and Arabic languages, showing good psychometric properties (Alyahri & Goodman, 2006; Sharratt, Foca, Gavriluta, Jones, & Asiminei, 2014). In the present study, the three-subscale division of the SDQ into *internalizing problems* (emotional + peer symptoms, 10 items), *externalizing problems* (conduct + hyperactivity symptoms, 10 items) and the *prosocial scale* (5 items) was used, as recommended with nonclinical samples (Goodman, Lamping, & Ploubidis, 2010). Further information about sample items, scoring, reliability and convergent validity can be found on <http://www.sdqinfo.com/>. For the purposes of this paper, we focused on the externalizing problems subscales. In the present study, Cronbach Alphas were 0.73 and 0.79, and Omegas were 0.72 and 0.80 for Moroccan and Romanian samples, respectively.

Control Variables

Age, gender, ethnicity, and nativity. Both adolescents and their parents were asked to complete a questionnaire providing

information on their gender, age, place of birth, and family composition.

Socio-economic status (SES). SES was assessed via the Family Affluence Scale (FAS; Currie et al., 2008), a valid measure of socioeconomic position for youth. It includes four items concerning material affluence. A sum score was calculated by summing the responses to these four items. Cross-national studies have shown that the FAS has a good validity and reliability across countries and also in the Italian context (Andersen et al., 2008; Vieno, Santinello, Lenzi, Baldassari, & Mirandola, 2009).

Nonverbal intelligence. Raven Standard Progressive Matrices (SPM; Raven, 1938) were administered to early adolescents as a measure of nonverbal reasoning ability. It is the most known and widely used test of all culture-reduced tests (Raven, Raven, & Court, 1998). It consists of 60 puzzles, each with a missing part that the test taker has to identify from six options. The 60 puzzles are divided into five sets (A, B, C, D, and E) of 12 items each. No time limit is set, and on average the test takes approximately 20 min to be completed. It showed good reliability and validity across many cultural groups (Raven, 2000). In the present study, the Italian standardization was used. Normative standard scores are comprised between 70 and 130, with a mean of 100 (Giunti, 2008). The average score for Moroccan immigrant adolescents was $M = 96.28$, $SD = 12.66$, range 76–123, whereas Romanian immigrants scored on average $M = 100.4$, $SD = 12.08$, range 74–124.

Data Analysis

Analyses were performed using *R* software (R Core Team, 2016). Cases were eliminated when 20% or more of the items of one measure did not receive an answer. Thus, 9 cases (3%) were eliminated, resulting in a final sample of 252 early adolescents and their parents. To investigate the impact of missing data, we performed a Little's missing completely at random (MCAR) test. Results supported the MCAR assumption ($\chi^2[20] = 16.42$, $p = .689$). For each participant, the remaining missing values were imputed based upon each subject's mean score rounded off to the closest integer (to respect the metric of measures) on each subscale of a given measure. This type of single imputation was selected given the well-established and validated questionnaires used in the study, as well as the low percentage of missing values in our data (<20%; see also Garson, 2015; Miconi, Moscardino, Altoè, & Salcuni, 2017; Pozzoli, Gini, & Thornberg, 2016). Descriptive information for the sample was summarized using means and standard deviations for continuous variables and counts and proportions for categorical variables. At the bivariate level, associations among discrimination, cultural orientations, IC, and externalizing symptoms were assessed using Pearson's correlations separately for the Moroccan and Romanian samples.

Next, we performed hierarchical cluster analysis to investigate the cultural orientations of immigrant early adolescents. Standardized scores of the Italian and heritage cultural orientation subscales of the CSAS were used as clustering variables and Ward's method was applied, with the squared euclidean distance as a measure of dissimilarity. The analysis was conducted through the *hclust* function available in *R*.

At the multivariate level, a series of linear regression models was implemented. A model selection approach based on Akaike Information Criterion (AIC; Akaike, 1973; McElreath, 2016;

Wagenmakers & Farrell, 2004) starting from the hypothesized theoretical model (see Appendix B) was adopted, using the stepAIC function of the package MASS (Hastie & Pregibon, 1992; Venables & Ripley, 2002). Results were interpreted in terms of AIC, Akaike weights (Akaike, 1973; McElreath, 2016; Wagenmakers & Farrell, 2004), significance and size of coefficients, and explained variance. As indicated by Wagenmakers and Farrell (2004), an Akaike model weight is an estimate of the probability that the model is the best one given the data and the set of models considered. The supplemental use of Akaike weights in addition to standard AIC provides greater insight into the merits of the competing models, by specifying the plausibility of models on a continuum, thus facilitating the interpretation of results (Wagenmakers & Farrell, 2004).

We relied on an exploratory rather than confirmatory model selection approach, based on the assumption that externalizing problems in immigrant youth are a complex phenomenon that can be hardly captured in a single confirmatory model (Roebroeck, Formisano, & Goebel, 2011). Specifically, we defined an initial model with discrimination, cultural orientation clusters, IC, and ethnicity as independent variables, and externalizing problems as dependent variable. To assess moderating effects, all two and three-way interactions between independent variables were included in the model. In addition, we included age, gender, SES, generation and nonverbal IQ as covariates. We subsequently selected the best model on the basis of the criteria specified above.

Results

Means and standard deviations for study variables and bivariate correlations are reported in Table 1, separately for Moroccan- and Romanian-origin early adolescents.

Identification of Cultural Orientation Profiles

Cluster analysis indicated the presence of three distinct subgroups of early adolescents based on their scores on mainstream and heritage cultural orientation subscales (see dendrogram in Appendix A). The group profiles on the two subscales by means of the Z-scores are shown in Appendix A. The groups were labeled following Berry's acculturation theory (1997). The first group consisted of adolescents with moderately high scores on heritage orientation and moderately low scores on mainstream orientation, and was consequently labeled *separated group* ($n = 137$; 54.4%). The second group was composed of individuals who scored high

on mainstream orientation and low on heritage orientation, and was therefore named *assimilated group* ($n = 86$; 34.1%). In the third group, youngsters scored high on both mainstream and heritage orientations, and thus were labeled *integrated group* ($n = 29$; 11.5%; see Appendix A). The three groups were compared according to mainstream and heritage cultural orientations using multivariate analysis of variance (MANOVA). We found a significant overall effect of cluster group ($F [2, 249] = 132.21, p < .001$). Follow-up univariate analysis of variance indicated that the identified groups differed on both mainstream cultural orientation and heritage cultural orientation. In addition, the groups did not differ in terms of age, SES, IQ, discrimination, IC, or externalizing problems. Chi-square analysis on categorical variables showed that generation, gender and ethnicity were equally distributed across groups (see Table 2).

Linear Regression Models

The Akaike weights of all estimated models are presented in Appendix B. In relation to externalizing problems, findings clearly indicated that the most plausible model was the sixth, with a probability of being the best one of .64, largely superior to all other models ($< .25$; see Appendix B). This model explained 29% of the variance. All main effects, two-way and three-way interactions included in the final model are reported in Table 3.

Results indicated that gender, IQ and discrimination were each significantly associated with externalizing problems. Specifically, boys showed more externalizing problems ($M = 6.83, SD = 3.50$) than girls ($M = 4.97, SD = 3.14$); similarly, lower IQ scores and higher perceived discrimination were related to more externalizing symptoms. A two-way statistically significant interaction emerged between discrimination and cultural orientations on externalizing behaviors. However, IC emerged to further moderate the association between discrimination and cultural orientation clusters in links with externalizing problems (three-way interaction). To explore the interaction effect, we performed tests of the simple slopes (Aiken & West, 1991). As can be seen in Figure 1, among early adolescents endorsing separation, the association between discrimination and externalizing problems was positive and statistically significant for those with low levels of IC ($B = 2.04, SE = .72, p = .006, \eta_p^2 = .103$), but not for those with high levels of IC ($B = .15, SE = .68, p = .825, \eta_p^2 = .001$). By contrast, among assimilated adolescents, the perceived discrimination-externalizing difficulties link was significant for those who showed high levels of IC ($B = 3.18, SE = 1.38, p = .026, \eta_p^2 = .123$), but not for those

Table 1
Mean, Standard Deviation, and Range of Study Variables and Bivariate Correlations, Separately for Ethnic Group ($n = 252$)

Variable	Moroccan-origin ($n = 126$)		Romanian-origin ($n = 126$)		1	2	3	4	5
	<i>M</i> (<i>SD</i>)	Range	<i>M</i> (<i>SD</i>)	Range					
1. Discrimination (early adolescent report)	1.72 (.82)	1.00–4.30	1.53 (.68)	1.00–4.30		-.20*	.15	.02	.33***
2. Mainstream orientation (early adolescent report)	3.97 (.49)	2.67–4.80	3.96 (.54)	2.33–5.00	.03		-.28**	.05	-.06
3. Heritage orientation (early adolescent report)	3.38 (.67)	1.65–4.88	3.16 (.76)	1.24–4.47	.06	-.13		-.03	.08
4. IC	.04 (.17)	-.30–.76	.02 (.15)	-.32–.60	-.16	-.01	.02		.06
5. Externalizing problems (parent-report)	5.96 (3.42)	0–15	6.00 (3.52)	0–16	.35***	-.01	.16	-.21*	

Note. Correlation coefficients displayed above the diagonal are for Romanian-origin, below are for Moroccan-origin early adolescents.

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

Table 2

Means and Standard Deviations of Study Variables, Separately for Each Cultural Orientation Cluster and Differences on Study Variables Across Cultural Orientation Clusters ($n = 252$)

Variable	<i>M (SD)</i>			<i>F (df), η_p^2</i>	$\chi^2(df)$, Cramer <i>V</i>
	Separated ($n = 137$)	Assimilated ($n = 86$)	Integrated ($n = 29$)		
Discrimination (early adolescent report)	1.67 (.72)	1.54 (.73)	1.67 (.97)	.89 (2,249), .007	—
Mainstream orientation (early adolescent report)	3.61 (.37)	4.33 (.32)	4.52 (.19)	165.31 (2,249), .570***	—
Heritage orientation (early adolescent report)	3.55 (.51)	2.57 (.53)	4.00 (.36)	136.22 (2,249), .522***	—
IC	.02 (.15)	.05 (.18)	.01 (.14)	1.00 (2,249), .008	—
Externalizing problems (parent-report)	6.10 (3.21)	5.61 (3.85)	6.55 (3.41)	.98 (2,249), .008	—
Ethnicity (% Moroccan-origin)	52	42	66	—	5.26 (2), .144
Generation (% first)	47	40	24	—	5.26 (2), .145
Gender (% females)	45	45	52	—	.50 (2), .045
Age	12.05 (.79)	12.12 (.85)	11.97 (.82)	.41 (2,249), .003	—
SES	4.68 (1.94)	4.93 (1.79)	5.21 (2.01)	1.13 (2,249), .009	—
Non-verbal IQ	98.70 (12.45)	98.73 (12.43)	95.45 (13.15)	.87 (2,249), .007	—

*** $p < .001$.

who exhibited low levels of IC ($B = 1.93$, $SE = 1.21$, $p = .119$, $\eta_p^2 = .069$). Among integrated youth, IC did not significantly moderate the discrimination-externalizing difficulties association, neither at low ($B = 16.65$, $SE = 10.52$, $p = .148$, $\eta_p^2 = .217$) nor at high levels ($B = -2.48$, $SE = 19.48$, $p = .903$, $\eta_p^2 = .003$).

Finally, a three-way statistically significant interaction emerged among discrimination, IC, and ethnicity. As depicted in Figure 2, in the face of discrimination, low levels of IC were associated with more externalizing problems for Romanian ($B = 1.98$, $SE = .85$, $p = .024$, $\eta_p^2 = .081$), but not for Moroccan ($B = .62$, $SE = .67$, $p = .356$, $\eta_p^2 = .016$) early adolescents. In contrast, the association between perceived discrimination and externalizing symptoms was

not statistically significant for either Moroccan ($B = -.14$, $SE = .98$, $p = .888$, $\eta_p^2 = .001$) or Romanian samples ($B = .21$, $SE = .72$, $p = .767$, $\eta_p^2 = .001$) at high levels of IC.

Discussion

Although discrimination is a common stressor in the everyday lives of children and adolescents from diverse ethnic backgrounds, individuals are not equally susceptible to its adverse effects. The identification of potentially protective factors in the discrimination-externalizing problems link among minority youths is of primary importance, since the reduction of risky

Table 3

Final Linear Regression Model With Externalizing Problems as Dependent Variable

Variable	<i>B (SE)</i>	Omnibus <i>F (df)</i>	η_p^2
Gender (Female)	-1.19 (.41)	8.57 (1,233)**	.04
Age	.37 (.24)	2.30 (1,233)	.01
Non-Verbal Intelligence	-.06 (.02)	12.95 (1,233)***	.05
Discrimination	1.44 (.49)	19.83 (1,233)***	.04
Cultural orientation clusters		1.53 (2,233)	.04
Assimilated group	-2.95 (1.06)		
Integrated group	.07 (1.37)		
IC	12.77 (6.15)	.26 (1,233)	.02
Ethnicity (Moroccan)	1.02 (1.02)	2.59 (1,233)	<.01
Discrimination \times Cultural Orientation Clusters		3.53 (2,233)*	.03
Discrimination \times Assimilated Group	1.51 (.60)		
Discrimination \times Integrated Group	.36 (.75)		
Discrimination \times IC	-8.30 (3.94)	.05 (1,233)	.02
Discrimination \times Ethnicity (Moroccan)	-.98 (.60)	1.35 (1,233)	.01
Cultural Orientation Clusters \times IC		2.23 (2,233)	.02
Assimilated Group \times IC	-7.94 (7.22)		
Integrated Group \times IC	17.17 (10.60)		
IC \times Ethnicity (Moroccan)	-21.99 (7.09)	3.02 (1,233)	.04
Discrimination \times Cultural Orientation Clusters \times IC		6.26 (2,233)**	.05
Discrimination \times Assimilated Group \times IC	7.99 (4.70)		
Discrimination \times Integrated Group \times IC	-15.61 (6.29)		
Discrimination \times IC \times Ethnicity (Moroccan)	12.29 (4.63)	7.03 (1,233)**	.03

Note. $n = 252$. Baseline category for gender was male. Baseline category for Ethnicity was Romanian-origin. Baseline category for cultural orientation clusters was the separated group. $R^2 = .29$.

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

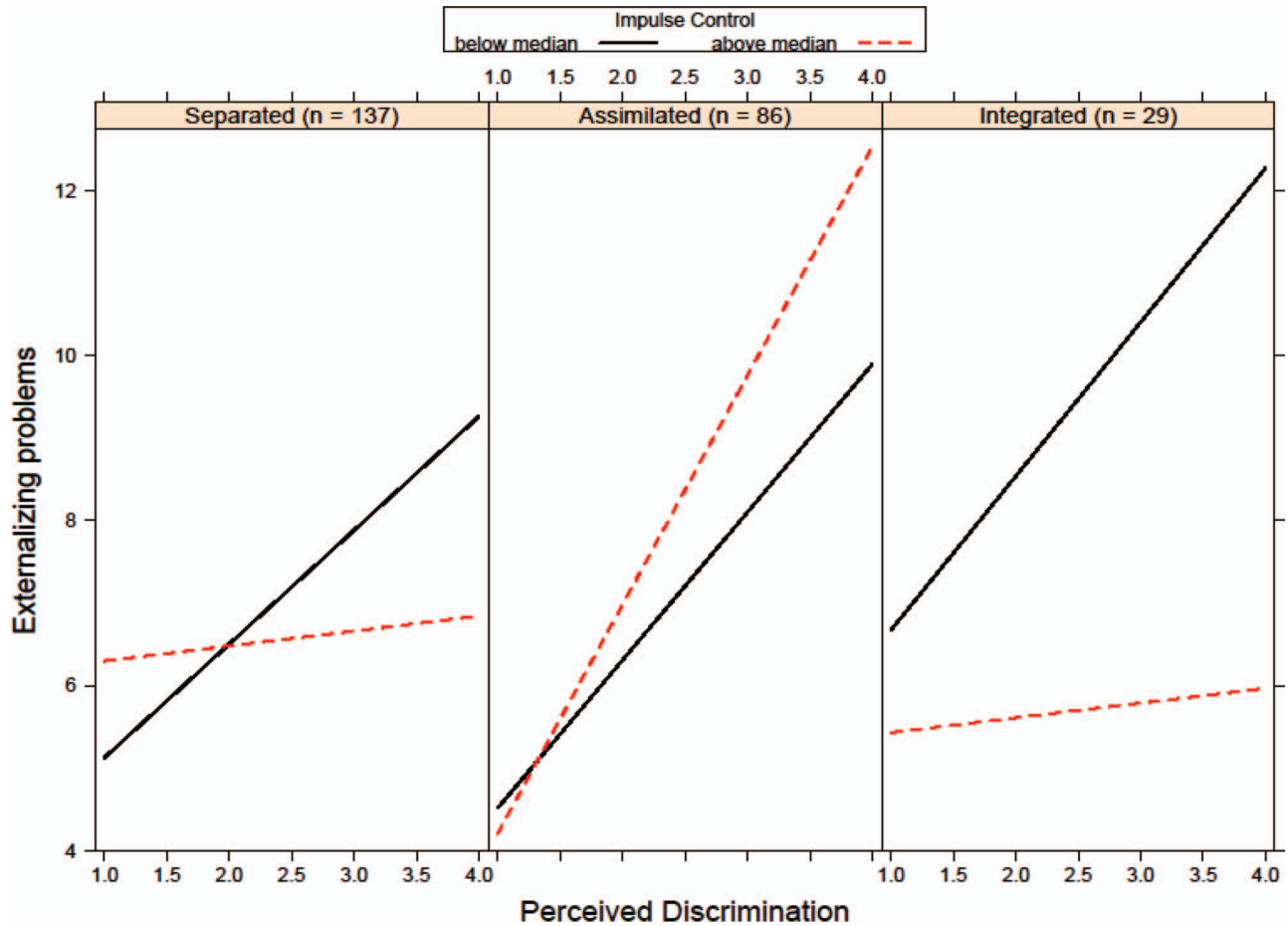


Figure 1. The interaction effect of perceived ethnic discrimination and IC on externalizing problems for Separated adolescents, Assimilated adolescents, and Integrated adolescent ($n = 252$). IC was divided into two levels based on median: low = below median; high = above median. See the online article for the color version of this figure.

behavior within this population has implications for their own development and well-being. This cross-sectional study aimed to examine whether cultural orientations (i.e., separation, assimilation, integration) and IC moderate the association between perceived discrimination and externalizing problems among early adolescents in Italy. We also considered the role of ethnicity in these relations by focusing on Moroccan and Romanian youth, two populations that are largely underrepresented in the North American literature but which are part of the most sizable ethnic groups in the European context. Overall, our results support a stress-coping (Clark et al., 1999) and ecological model (Bronfenbrenner & Morris, 2006) of behavioral adjustment among early adolescents with an ethnic background facing discrimination. Indeed, both environmental and person-level variables were found to moderate the negative association of discrimination with externalizing problems.

As expected, perceived discrimination was found to be associated with externalizing difficulties in our sample. This result is in line with the extensive literature showing a strong and direct negative association between ethnic discrimination and socioemotional adjustment (Fuller-Rowell, Evans, & Ong, 2012; Stevens et

al., 2005; Yip, 2015) across multiple ethnic groups (Pascoe & Smart Richman, 2009). However, the association of perceived discrimination with externalizing problems varied as a function of both cultural orientations and IC. Specifically, in the context of discrimination, adolescents who endorsed separation and exhibited lower levels of IC had more externalizing difficulties, whereas this pattern was not observed among separated youths with high levels of IC. In other words, a better IC may serve as protective factor for separated adolescents facing discriminatory experiences. This result is consistent with recent evidence supporting the buffering effect of anger regulation and suppression among Mexican-origin adolescents facing discrimination in the US (Park, Wang, Williams, & Alegría, 2017). In addition, there is preliminary evidence linking separation to more sensation seeking and aggressiveness (Kosic, 2006). Thus, we may speculate that highly impulsive youth who endorse separation tend to be more prone to react to discrimination with externalizing/aggressive behaviors. Interestingly, no significant interactions emerged for integrated adolescents. However, the pattern of associations among discrimination, cultural orientations and IC among integrated early adolescents was very similar to the one observed for separated adolescents (see Figure

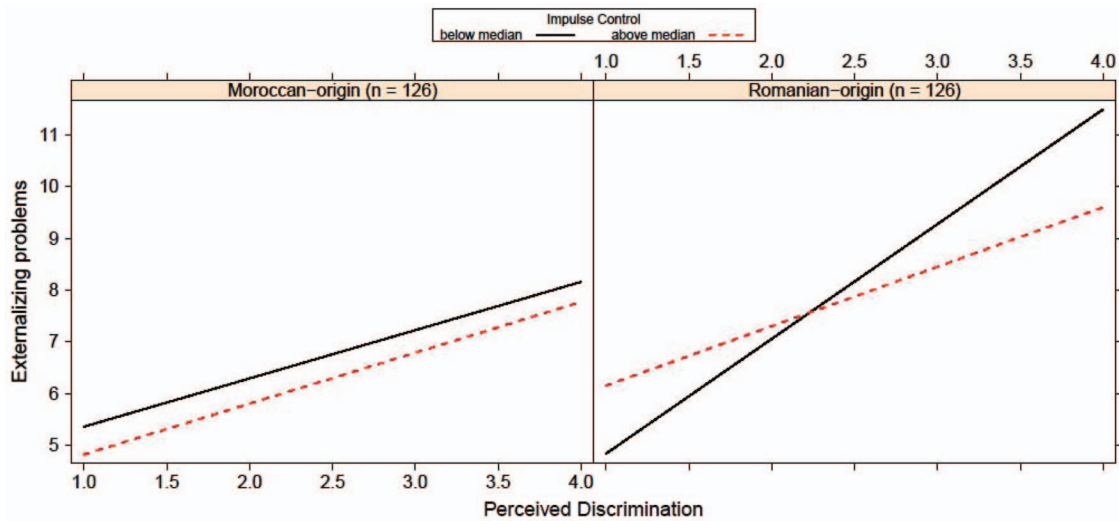


Figure 2. The interaction effect of perceived ethnic discrimination and IC on externalizing problems for Moroccan-origin, and Romanian-origin early adolescents ($n = 252$). IC was divided into two levels based on median: low = below median; high = above median. See the online article for the color version of this figure.

2). The lack of significant associations in this group may be due to the small sample of adolescents endorsing integration in our study. These findings need to be replicated in future studies and with larger samples before any conclusions can be drawn. Nonetheless, our results seem to support the mounting evidence on the protective role of enculturation processes among ethnic minority youth (Umaña-Taylor & Updegraff, 2007; Zeiders et al., 2017).

Contrary to expectations, IC was not found to be protective for early adolescents who endorsed assimilation, such that in the context of high perceived discrimination, higher levels of IC were linked to more externalizing problems. Previous research has shown that adolescents who endorse assimilation experience stronger emotional distress when facing discrimination compared to their separated and integrated peers, since they cannot count on the protective role of ethnic identity (Umaña-Taylor & Updegraff, 2007; Zeiders et al., 2017). We may speculate that the protective role of better IC may only be apparent in less stressful and emotionally salient contexts. Although somewhat unexpected, these findings are in line with Ray et al. (2016) and Zimmerman's (2010) studies, and suggest that individual characteristics such as IC may not be relevant protective factors when people face the strong emotional impact of stressful environmental experiences, such as discrimination for assimilated youth. An alternative explanation is that assimilated early adolescents with better impulse control may experience more cognitive dissonance when facing ethnic discrimination. Social psychological theories suggest that a state of cognitive dissonance results from holding two contrasting cognitions (Festinger, 1957). Among minority youths who feel very close to mainstream cultural values, ethnic discrimination may produce dissonance and negative affect. This, in turn, could have especially adverse consequences for adolescents with high IC, who are more sensitive to external constraints and long-term considerations (Baumeister, Vohs, & Tice, 2007). However, more research is needed to test for this possibility. The moderating effect of IC also appeared to vary across ethnic groups. Specifically, a

low IC emerged to have a detrimental effect only for Romanian-origin youth. The latter, as opposed to the visible Moroccan minority, is an ethnic group with a relatively small cultural distance from mainstream Italian culture. It could be argued that Romanian early adolescents are less prepared than their Moroccan counterparts to be discriminated against because of their ethnic origin. For this reason, they may be more vulnerable to the negative effects of discriminatory experiences (Liebkind & Jasinskaja-Lahti, 2000), especially when they cannot count on average levels of IC, which would allow them to seek for support and avoid disruptive behaviors.

No statistically significant interaction emerged among discrimination, cultural orientations and ethnic background, suggesting that the relation between perceived discrimination and cultural orientations in links with externalizing problems does not vary as a function of ethnicity. We may postulate that the impact of cultural differences on the discrimination-cultural adaptation link becomes less salient in the Italian assimilationist society, due to the common perception of ethnic minority youth and of their cultural orientation strategies by the mainstream society regardless of ethnic origin (Kosic, Mannetti, & Sam, 2005).

Of importance, integration was not a common cultural orientation among early adolescents in our sample, who tended to prefer assimilation and separation strategies. This result contrasts with prior studies reporting different degrees of integration to be the most common strategies among adolescents across several countries (Berry, Phinney, Sam, & Vedder, 2006), including Southern Italy (Musso et al., 2015). However, the pattern we found in our data may be linked to the specific developmental phase of early adolescence, when identity is unstable and individuals are still exploring their multiple identities (Musso, Inguglia, & Lo Coco, 2016). Indeed, our participants were younger than those in Berry et al.'s (2006) and Musso et al.'s (2015) studies. Early adolescents may still be more connected to their family of origin than older adolescents, and this could also explain the large number of youths

who endorsed their heritage culture more than the mainstream culture.

Limitations and Directions for Future Research

The study has several limitations that need to be acknowledged when interpreting the results. First, the cross-sectional design prevents us from drawing conclusions about causality. Longitudinal studies are needed to better understand the developmental trajectories of variables involved in adolescents' cultural adaptation as well as externalizing difficulties. Second, although recent evidence suggests that immigrants' adjustment varies according to generational status (Belhadj Kouider et al., 2014; Dimitrova et al., 2016), sample size concerns did not allow us to test whether generational status could further moderate the associations among our variables in our sample. Future studies drawing on larger samples should address this issue. Third, the role of parents' cultural orientations has not been taken into consideration. Given that parent-child cultural orientation discrepancies may impact on youth's psychological adjustment (Chen et al., 2014), it may be salient to investigate this issue in a transitional phase such as early adolescence, when adolescents start to define themselves in terms of their identity and orientations. Fourth, cultural orientation is a multidimensional construct. In the present study, we focused mainly on the behavioral aspects of acculturation and enculturation processes. Future research that assesses additional dimensions of cultural orientations would be highly informative (White, Knight, & Roosa, 2015).

In spite of these limitations, our study uniquely contributes to advancing research on ethnic minority youth in several ways. First, we integrate separate research traditions (i.e., developmental psychology, acculturation and enculturation research, and clinical neuropsychology) to better understand the risk and protective factors involved in the effects of discrimination on early adolescents' externalizing difficulties. Second, we focus on early adolescence, a developmental stage which has been often overlooked despite being a crucial time for the emergence of externalizing problems and for self-development, especially among ethnic minority youth. Third, we include ethnic groups that are largely underrepresented in the North American literature (i.e., Moroccans, Romanians), thus allowing to shed light on the generalizability of findings across immigrant communities living in European countries, such as Italy.

The present study provides useful implications for policy and research concerning ethnic-origin early adolescents' adjustment. Our findings suggest that a combination of personal (i.e., IC) and cultural (i.e., cultural orientations) factors matter in coping with discrimination. Professionals should explore the cultural orientations youngsters endorse to deal with discrimination, as well as the role of IC in their endorsement of these strategies. For example, it might be helpful to explain students the cognitive and emotional benefits and costs associated with separation/assimilation. At the societal level, policies favoring integration should be implemented to reduce the risks associated with uniquely endorsing the culture of settlement, as to reduce the possible negative impact of both discrimination and impulsivity on problem behavior. In doing so, our findings suggest the importance of avoiding the "one-size-fits-all" approach, taking into consideration both similarities and differences among multiple ethnic minority groups.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B. N. Petrov & F. Caski (Eds.), *Proceedings of the Second International Symposium on Information Theory* (pp. 267–281). Budapest, Hungary: Akademiai Kiado.
- Albert, D., & Steinberg, L. (2011). Judgment and decision making in adolescence. *Journal of Research on Adolescence, 21*, 211–224. <http://dx.doi.org/10.1111/j.1532-7795.2010.00724.x>
- Alyahri, A., & Goodman, R. (2006). Validation of the Arabic Strengths and Difficulties Questionnaire and the development and well-being assessment. *Eastern Mediterranean Health Journal, 12*(2, Suppl. 2), S138–S146.
- Andersen, A., Krølner, R., Currie, C., Dallago, L., Due, P., Richter, M., . . . Holstein, B. E. (2008). High agreement on family affluence between children's and parents' reports: International study of 11-year-old children. *Journal of Epidemiology and Community Health, 62*, 1092–1094. <http://dx.doi.org/10.1136/jech.2007.065169>
- Andersen, S. L., & Teicher, M. H. (2008). Stress, sensitive periods and maturational events in adolescent depression. *Trends in Neurosciences, 31*, 183–191. <http://dx.doi.org/10.1016/j.tins.2008.01.004>
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science, 16*, 351–355. <http://dx.doi.org/10.1111/j.1467-8721.2007.00534.x>
- Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition, 50*, 7–15. [http://dx.doi.org/10.1016/0010-0277\(94\)90018-3](http://dx.doi.org/10.1016/0010-0277(94)90018-3)
- Belhadj Kouider, E., Koglin, U., & Petermann, F. (2014). Emotional and behavioral problems in migrant children and adolescents in Europe: A systematic review. *European Child & Adolescent Psychiatry, 23*, 373–391. <http://dx.doi.org/10.1007/s00787-013-0485-8>
- Bencini, C., Cerretelli, S., & Di Pasquale, L. (2009). *ENAR Shadow Report 2008: Racism in Italy*. Bruxelles, Belgium: European Network Against Racism.
- Benner, A. (2017). The toll of racial/ethnic discrimination on adolescents' adjustment. *Child Development Perspectives, 11*, 251–256. <http://dx.doi.org/10.1111/cdep.12241>
- Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology, 46*, 5–34.
- Berry, J. W. (2003). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in Theory, Measurement, and Applied Research* (pp. 17–37). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10472-004>
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (Eds.). (2006). *Immigrant Youth in Cultural Transition: Acculturation, Identity and Adaptation Across National Contexts*. Mahwah, NJ: Erlbaum.
- Berry, J. W., & Sabatier, C. (2010). Acculturation, discrimination, and adaptation among second generation immigrant youth in Montreal and Paris. *International Journal of Intercultural Relations, 34*, 191–207. <http://dx.doi.org/10.1016/j.ijintrel.2009.11.007>
- Bezdjian, S., Baker, L. A., Lozano, D. I., & Raine, A. (2009). Assessing inattention and impulsivity in children during the Go/NoGo task. *British Journal of Developmental Psychology, 27*, 365–383. <http://dx.doi.org/10.1348/026151008X314919>
- Brody, G. H., Chen, Y. F., Murry, V. M., Ge, X., Simons, R. L., Gibbons, F. X., . . . Cutrona, C. E. (2006). Perceived discrimination and the adjustment of African American youths: A five-year longitudinal analysis with contextual moderation effects. *Child Development, 77*, 1170–1189. <http://dx.doi.org/10.1111/j.1467-8624.2006.00927.x>
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of

- human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology: Vol. 1. Theoretical Models of Human Development* (6th ed., pp. 793–828). New York, NY: Wiley.
- Burdick, J. D., Roy, A. L., & Raver, C. C. (2013). Evaluating the Iowa Gambling Task as a direct assessment of impulsivity with low-income children. *Personality and Individual Differences, 55*, 771–776. <http://dx.doi.org/10.1016/j.paid.2013.06.009>
- Chen, S. H., Hua, M., Zhou, Q., Tao, A., Lee, E. H., Ly, J., & Main, A. (2014). Parent-child cultural orientations and child adjustment in Chinese American immigrant families. *Developmental Psychology, 50*, 189–201. <http://dx.doi.org/10.1037/a0032473>
- Chen, X., & Lee, B. (1996). *The Cultural and Social Acculturation Scale (Child and Adult Version)*. London, Ontario, Canada: Department of Psychology, University of Western Ontario.
- Chen, X., & Tse, H. C. H. (2010). Social and psychological adjustment of Chinese Canadian children. *International Journal of Behavioral Development, 34*, 1–9.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233–255. http://dx.doi.org/10.1207/S15328007SEM0902_5
- Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist, 54*, 805–816. <http://dx.doi.org/10.1037/0003-066X.54.10.805>
- Closson, L. M., Darwich, L., Hymel, S., & Waterhouse, T. (2014). Ethnic discrimination among recent immigrant adolescents: Variations as a function of ethnicity and school context. *Journal of Research on Adolescence, 24*, 608–614. <http://dx.doi.org/10.1111/jora.12089>
- Contrada, R. J., Ashmore, R. D., Gary, M., Coups, E., Egeth, J. D., Sewell, A., . . . Chasse, V. (2000). Ethnicity-related sources of stress and their effects on well-being. *Current Directions in Psychological Science, 9*, 136–139. <http://dx.doi.org/10.1111/1467-8721.00078>
- Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., . . . Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. *American Journal of Preventive Medicine, 49*, 354–361. <http://dx.doi.org/10.1016/j.amepre.2015.02.001>
- Currie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., & Richter, M. (2008). Researching health inequalities in adolescents: The development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. *Social Science & Medicine, 66*, 1429–1436. <http://dx.doi.org/10.1016/j.socscimed.2007.11.024>
- Dahl, R. E. (2004). Adolescent brain development: A period of vulnerabilities and opportunities. Keynote address. *Annals of the New York Academy of Sciences, 1021*, 1–22. <http://dx.doi.org/10.1196/annals.1308.001>
- Dimitrova, R., Chasiotis, A., & van de Vijver, F. (2016). Adjustment outcomes of immigrant children and youth in Europe. *European Psychologist, 21*, 150–162. <http://dx.doi.org/10.1027/1016-9040/a000246>
- Di Riso, D., Salcuni, S., Chessa, D., Raudino, A., Lis, A., & Altœ, G. (2010). The Strengths and Difficulties Questionnaire (SDQ). Early evidence of its reliability and validity in a community sample of Italian children. *Personality and Individual Differences, 49*, 570–575. <http://dx.doi.org/10.1016/j.paid.2010.05.005>
- Eurobarometer. (2015). *Public Opinion in the European Union*. Retrieved from http://ec.europa.eu/public_opinion/archives/eb/eb83/eb83_publ_en.pdf
- Eurostat. (2015). *Migration and Migrant Population Statistics*. Retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics
- Festinger, L. (1957). *A Theory of Cognitive Dissonance* (p. 1). Evanston, IL: Row, Peterson.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods, 9*, 466–491. <http://dx.doi.org/10.1037/1082-989X.9.4.466>
- Fuller-Rowell, T. E., Evans, G. W., & Ong, A. D. (2012). Poverty and health: The mediating role of perceived discrimination. *Psychological Science, 23*, 734–739. <http://dx.doi.org/10.1177/0956797612439720>
- Garson, G. D. (2015). *Missing Values Analysis and Data Imputation*. Asheboro, NC: Statistical Associates Publishers.
- Giuliani, C., & Tagliabue, S. (2015). Exploring Identity in Muslim Moroccan and Pakistani Immigrant Women. *Europe's Journal of Psychology, 11*, 63–78. <http://dx.doi.org/10.5964/ejop.v11i1.844>
- Giunti. (2008). *Standard Progressive Matrices (SPM)*. Florence, Italy: Giunti O. S.
- Gonzales, N. A., Fabrett, F., & Knight, G. (2009). Acculturation, enculturation, and the psychological adaptation of Latino youth. In F. Villaruel, G. Carlo, J. Grau, M. Azmitia, N. Cabrera, & J. Chahin (Eds.), *Handbook of U.S. Latino Psychology: Developmental and Community-Based Perspectives* (pp. 115–134). Thousand Oaks, CA: Sage.
- Goodman, A., Lamping, D. L., & Ploubidis, G. B. (2010). When to use broader internalising and externalising subscales instead of the hypothesised five subscales on the Strengths and Difficulties Questionnaire (SDQ): Data from British parents, teachers and children. *Journal of Abnormal Child Psychology, 38*, 1179–1191. <http://dx.doi.org/10.1007/s10802-010-9434-x>
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 38*, 581–586. <http://dx.doi.org/10.1111/j.1469-7610.1997.tb01545.x>
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry, 7*, 125–130. <http://dx.doi.org/10.1007/s007870050057>
- Green, S. B., & Yang, Y. (2009). Reliability of summed item scores using structural equation modeling: An alternative to coefficient alpha. *Psychometrika, 74*, 155–167. <http://dx.doi.org/10.1007/s11336-008-9099-3>
- Hastie, T. J., & Pregibon, D. (1992). Generalized linear models. In J. M. Chambers & T. J. Hastie (Eds.), *Statistical Models in S. Pacific Grove, CA: Wadsworth & Brooks/Cole*.
- Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences, 16*, 174–180. <http://dx.doi.org/10.1016/j.tics.2012.01.006>
- Icenogle, G., Steinberg, L., Olino, T. M., Shulman, E. P., Chein, J., Alampay, L. P., . . . Chaudhary, N. (2017). Puberty predicts approach but not avoidance on the Iowa Gambling Task in a multinational sample. *Child Development, 88*, 1598–1614.
- Kerr, A., & Zelazo, P. D. (2004). Development of “hot” executive function: The children’s gambling task. *Brain and Cognition, 55*, 148–157. [http://dx.doi.org/10.1016/S0278-2626\(03\)00275-6](http://dx.doi.org/10.1016/S0278-2626(03)00275-6)
- Kosic, A. (2006). Personality and individual factors in acculturation. In D. L. Sam & J. W. Berry (Eds.), *The Cambridge handbook of acculturation psychology* (pp. 113–128). New York, NY: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511489891.011>
- Kosic, A., Mannetti, L., & Sam, D. L. (2005). The role of majority attitudes towards out-group in the perception of the acculturation strategies of immigrants. *International Journal of Intercultural Relations, 29*, 273–288. <http://dx.doi.org/10.1016/j.ijintrel.2005.06.004>
- Liebkind, K., & Jasinskaja-Lahti, I. (2000). The influence of experiences of discrimination on psychological stress: A comparison of seven immigrant groups. *Journal of Community & Applied Social Psychology, 10*, 1–16. [http://dx.doi.org/10.1002/\(SICI\)1099-1298\(200001/02\)10:1<1::AID-CASP521>3.0.CO;2-5](http://dx.doi.org/10.1002/(SICI)1099-1298(200001/02)10:1<1::AID-CASP521>3.0.CO;2-5)
- Li-Grining, C. P. (2012). The role of cultural factors in the development of Latino preschoolers’ self-regulation. *Child Development Perspectives, 6*, 210–217. <http://dx.doi.org/10.1111/j.1750-8606.2012.00255.x>

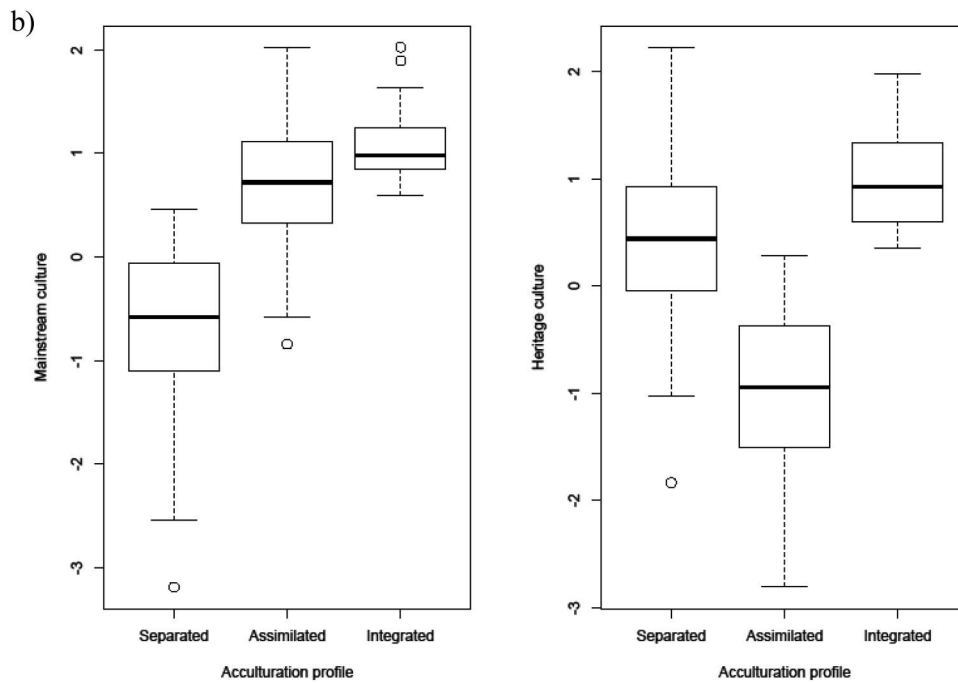
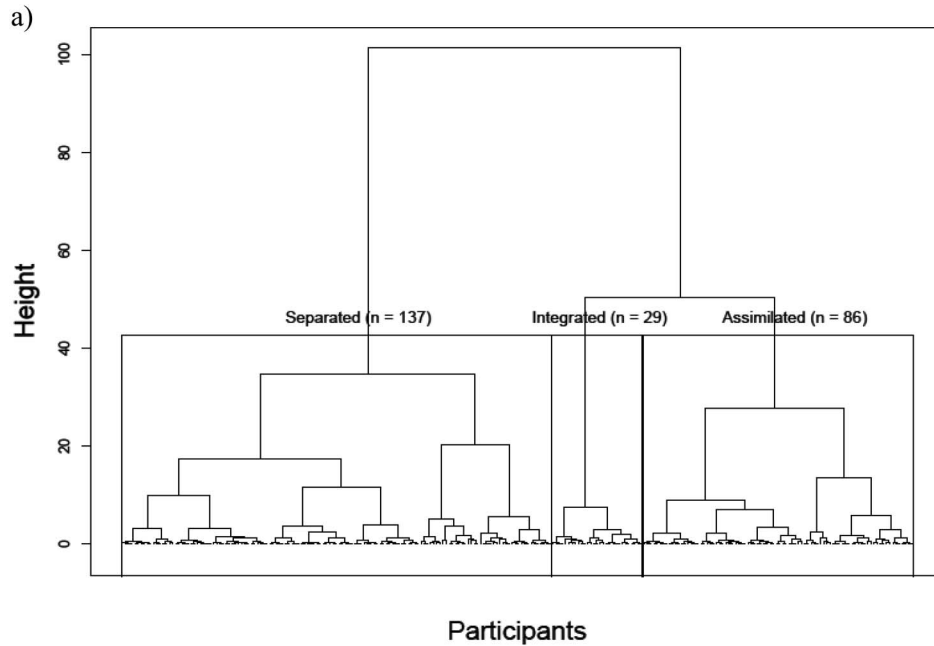
- Lynam, D. R., Caspi, A., Moffitt, T. E., Wikström, P. O., Loeber, R., & Novak, S. (2000). The interaction between impulsivity and neighborhood context on offending: The effects of impulsivity are stronger in poorer neighborhoods. *Journal of Abnormal Psychology, 109*, 563–574. <http://dx.doi.org/10.1037/0021-843X.109.4.563>
- Major, B., Quinton, W. J., & McCoy, S. K. (2002). Antecedents and consequences of attributions to discrimination: Theoretical and empirical advances. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 34, pp. 251–330). New York, NY: Academic Press. [http://dx.doi.org/10.1016/S0065-2601\(02\)80007-7](http://dx.doi.org/10.1016/S0065-2601(02)80007-7)
- Marzocchi, G. M., Capron, C., Di Pietro, M., Duran Tauleria, E., Duyme, M., Frigerio, A., . . . Théron, C. (2004). The use of the Strengths and Difficulties Questionnaire (SDQ) in Southern European countries. *European Child & Adolescent Psychiatry, 13*(Suppl. 2), ii40–ii46. <http://dx.doi.org/10.1007/s00787-004-2007-1>
- McDermott, E. R., Donlan, A. E., Anderson, S., & Zaff, J. F. (2017). Self-control and adolescent internalizing and externalizing problems: Neighborhood-based differences. *Journal of Community Psychology, 45*, 297–314. <http://dx.doi.org/10.1002/jcop.21848>
- McElreath, R. (2016). *Statistical Rethinking: A Bayesian Course with Examples in R and Stan* (Vol. 122). Boca Raton, FL: CRC Press.
- Menting, B., Van Lier, P. A., Koot, H. M., Pardini, D., & Loeber, R. (2016). Cognitive impulsivity and the development of delinquency from late childhood to early adulthood: Moderating effects of parenting behavior and peer relationships. *Development and Psychopathology, 28*, 167–183. <http://dx.doi.org/10.1017/S095457941500036X>
- Miconi, D., Moscardino, U., Altoè, G., & Salcuni, S. (2017). Self-construals and social adjustment in immigrant and nonimmigrant early adolescents: The moderating role of executive functioning. *Child Development*. Advance online publication. <http://dx.doi.org/10.1111/cdev.12918>
- Moscardino, U., Bertelli, C., & Altoè, G. (2011). Culture, migration, and parenting: A comparative study of mother-infant interaction and child-rearing patterns in Romanian, Romanian immigrant, and Italian families. *International Journal of Developmental Science, 5*(1–2), 11–25.
- Motti-Stefanidi, F., & Masten, A. S. (2013). School success and school engagement of immigrant children and adolescents: A risk and resilience developmental perspective. *European Psychologist, 18*, 126–135. <http://dx.doi.org/10.1027/1016-9040/a000139>
- Musso, P., Inguglia, C., & Lo Coco, A. (2015). Acculturation profiles and perceived discrimination: Associations with psychosocial well-being among Tunisian adolescents in Italy. *Social Inquiry Into Well-Being, 1*, 76–90. <http://dx.doi.org/10.13165/SIIW-15-1-1-06>
- Musso, P., Inguglia, C., & Lo Coco, A. (2016). Relationships between ethnic identity, ethnic attitudes, and acculturative stress in Tunisian individuals in early and middle adolescence. *The Journal of Early Adolescence, 37*, 1309–1340. <http://dx.doi.org/10.1177/0272431616659557>
- Nguyen, A. M. D., & Benet-Martínez, V. (2013). Biculturalism and adjustment: A meta-analysis. *Journal of Cross-Cultural Psychology, 44*, 122–159. <http://dx.doi.org/10.1177/0022022111435097>
- Pachter, L. M., Szalacha, L. A., Bernstein, B. A., & García Coll, C. G. (2010). Perceptions of Racism in Children and Youth (PRaCY): Properties of a self-report instrument for research on children's health and development. *Ethnicity & Health, 15*, 33–46. <http://dx.doi.org/10.1080/13557850903383196>
- Park, I. J., Schwartz, S. J., Lee, R. M., Kim, M., & Rodriguez, L. (2013). Perceived racial/ethnic discrimination and antisocial behaviors among Asian American college students: Testing the moderating roles of ethnic and American identity. *Cultural Diversity and Ethnic Minority Psychology, 19*, 166–176. <http://dx.doi.org/10.1037/a0028640>
- Park, I. J. K., Wang, L., Williams, D. R., & Alegría, M. (2017). Coping with racism: Moderators of the discrimination-adjustment link among Mexican-origin adolescents. *Child Development*. Advance online publication. <http://dx.doi.org/10.1111/cdev.12856>
- Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin, 135*, 531–554. <http://dx.doi.org/10.1037/a0016059>
- Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence, 9*(1–2), 34–49. <http://dx.doi.org/10.1177/0272431689091004>
- Phinney, J. S. (2006). Ethnic identity exploration in emerging adulthood. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging Adults in America: Coming of Age in the 21st Century* (pp. 117–134). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/11381-005>
- Pozzoli, T., Gini, G., & Thornberg, R. (2016). Bullying and defending behavior: The role of explicit and implicit moral cognition. *Journal of School Psychology, 59*, 67–81. <http://dx.doi.org/10.1016/j.jsp.2016.09.005>
- Prencipe, A., Kesek, A., Cohen, J., Lamm, C., Lewis, M. D., & Zelazo, P. D. (2011). Development of hot and cool executive function during the transition to adolescence. *Journal of Experimental Child Psychology, 108*, 621–637. <http://dx.doi.org/10.1016/j.jecp.2010.09.008>
- Raven, J. C. (1938). *Standard Progressive Matrices: Sets A, B, C, D, (and E)*. London, England: Lewis.
- Raven, J. (2000). The Raven's progressive matrices: Change and stability over culture and time. *Cognitive Psychology, 41*, 1–48. <http://dx.doi.org/10.1006/cogp.1999.0735>
- Raven, J., Raven, J. C., & Court, J. H. (1998). *Raven Manual: Section 3. Standard Progressive Matrices*. Oxford, England: Oxford Psychologists Press.
- Ray, J. V., Thornton, L. C., Frick, P. J., Steinberg, L., & Cauffman, E. (2016). Impulse control and callous-unemotional traits distinguish patterns of delinquency and substance use in justice involved adolescents: Examining the moderating role of neighborhood context. *Journal of Abnormal Child Psychology, 44*, 599–611. <http://dx.doi.org/10.1007/s10802-015-0057-0>
- R Core Team. (2016). *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <https://www.R-project.org/>
- Richter, J., Sagatun, Å., Heyerdahl, S., Oppedal, B., & Røysamb, E. (2011). The Strengths and Difficulties Questionnaire (SDQ) - self-report. An analysis of its structure in a multiethnic urban adolescent sample. *Journal of Child Psychology and Psychiatry, 52*, 1002–1011. <http://dx.doi.org/10.1111/j.1469-7610.2011.02372.x>
- Roebroeck, A., Formisano, E., & Goebel, R. (2011). The identification of interacting networks in the brain using fMRI: Model selection, causality and deconvolution. *NeuroImage, 58*, 296–302. <http://dx.doi.org/10.1016/j.neuroimage.2009.09.036>
- Sabatier, C., & Berry, J. W. (2008). The role of family acculturation, parental style, and perceived discrimination in the adaptation of second-generation immigrant youth in France and Canada. *European Journal of Developmental Psychology, 5*, 159–185. <http://dx.doi.org/10.1080/17405620701608739>
- Sam, D. L., Vedder, P., Liebkind, K., Neto, F., & Virta, E. (2008). Immigration, acculturation and the paradox of adaptation in Europe. *European Journal of Developmental Psychology, 5*, 138–158. <http://dx.doi.org/10.1080/17405620701563348>
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of Structural Equation Models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research, 8*, 23–74.
- Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin, 140*, 921–948. <http://dx.doi.org/10.1037/a0035754>

- Schneider, W., Eschman, A., & Zuccolotto, A. (2002). *E-Prime reference guide*. Pittsburgh, PA: Psychology Software Tools, Inc.
- Schwartz, S. J., Unger, J. B., Zamboanga, B. L., & Szapocznik, J. (2010). Rethinking the concept of acculturation: Implications for theory and research. *American Psychologist*, *65*, 237–251. <http://dx.doi.org/10.1037/a0019330>
- Sharratt, K., Foca, L., Gavriluta, C., Jones, A., & Asiminei, R. (2014). Dimensionality and Construct Validity of the Romanian Self-Report Strengths and Difficulties Questionnaire (SDQ). *Romanian Journal of Applied Psychology*, *16*, 33–39.
- Stevens, G. W., Vollebergh, W. A., Pels, T. V., & Crijnen, A. A. (2005). Predicting externalizing problems in Moroccan immigrant adolescents in the Netherlands. *Social Psychiatry and Psychiatric Epidemiology*, *40*, 571–579. <http://dx.doi.org/10.1007/s00127-005-0926-x>
- Toplak, M. E., Sorge, G. B., Benoit, A., West, R. F., & Stanovich, K. E. (2010). Decision-making and cognitive abilities: A review of associations between Iowa Gambling Task performance, executive functions, and intelligence. *Clinical Psychology Review*, *30*, 562–581. <http://dx.doi.org/10.1016/j.cpr.2010.04.002>
- Umaña-Taylor, A. J. (2016). A Post-Racial Society in Which Ethnic-Racial Discrimination Still Exists and Has Significant Consequences for Youths' Adjustment. *Current Directions in Psychological Science*, *25*, 111–118. <http://dx.doi.org/10.1177/0963721415627858>
- Umaña-Taylor, A. J., & Updegraff, K. A. (2007). Latino adolescents' mental health: Exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms. *Journal of Adolescence*, *30*, 549–567. <http://dx.doi.org/10.1016/j.adolescence.2006.08.002>
- Ursache, A., & Raver, C. C. (2015). Iowa Gambling Task performance and executive function predict low-income urban preadolescents' risky behaviors. *Personality and Individual Differences*, *79*, 1–6. <http://dx.doi.org/10.1016/j.paid.2015.01.010>
- van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Newbury Park, CA: Sage.
- Venables, W. N., & Ripley, B. D. (2002). *Modern Applied Statistics with S* (4th ed.). New York, NY: Springer. <http://dx.doi.org/10.1007/978-0-387-21706-2>
- Vieno, A., Santinello, M., Lenzi, M., Baldassari, D., & Mirandola, M. (2009). Health status in immigrants and native early adolescents in Italy. *Journal of Community Health*, *34*, 181–187. <http://dx.doi.org/10.1007/s10900-008-9144-2>
- Wagenmakers, E. J., & Farrell, S. (2004). AIC model selection using Akaike weights. *Psychonomic Bulletin & Review*, *11*, 192–196. <http://dx.doi.org/10.3758/BF03206482>
- Ward, C., & Geeraert, N. (2016). Advancing acculturation theory and research: The acculturation process in its ecological context. *Current Opinion in Psychology*, *8*, 98–104. <http://dx.doi.org/10.1016/j.copsyc.2015.09.021>
- White, R. M. B., Knight, G., & Roosa, M. W. (2015). Using cultural informed theory to study Mexican American Children and Families. In Y. M. Caldera & E. W. Lindsey (Eds.), *Handbook of Mexican American children and families: Multidisciplinary perspectives* (pp. 27–44). New York, NY: Routledge.
- Yip, T. (2015). The effects of ethnic/racial discrimination and sleep quality on depressive symptoms and self-esteem trajectories among diverse adolescents. *Journal of Youth and Adolescence*, *44*, 419–430. <http://dx.doi.org/10.1007/s10964-014-0123-x>
- Zeiders, K. H., Updegraff, K. A., Kuo, S. I., Umaña-Taylor, A. J., & McHale, S. M. (2017). Perceived discrimination and Mexican-origin young adults' sleep patterns: Examining the moderating role of cultural orientations. *Journal of Youth and Adolescence*, *46*, 1851–1861. <http://dx.doi.org/10.1007/s10964-016-0544-9>
- Zimmerman, G. M. (2010). Impulsivity, offending, and the neighborhood: Investigating the person–context nexus. *Journal of Quantitative Criminology*, *26*, 301–332. <http://dx.doi.org/10.1007/s10940-010-9096-4>

(Appendices follow)

Appendix A Cluster Analysis

Dendrogram (a) and profiles of the three cultural orientation groups (b) resulting from cluster analysis on mainstream and heritage cultural orientation Z scores for Moroccan- and Romanian-origin early adolescents. Error bars represent standard errors of associated means ($n = 252$; Separated $n = 137$, Assimilated $n = 86$, Integrated $n = 29$).



(Appendices continue)

Appendix B

Model Selection

AIC, Akaike Weights and R² of All Models Extracted Externalizing Problems as Dependent Variable (n = 252)

Models	AIC	Akaike Weight	R ²
Model 1	590.76	0%	.30
Model 2	586.89	0%	.30
Model 3	583.04	2%	.29
Model 4	579.5	9%	.29
Model 5	577.51	25%	.29
Model 6	575.58	64%	.29

Note. The selected model is highlighted in bold type. AIC = Akaike Information Criterion.

Model 1 = Gender + Socio Economic Status + Age + Non-Verbal Intelligence + Generation + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Cultural orientation clusters × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × Cultural orientation clusters × Ethnicity + Discrimination × IC × Ethnicity + Cultural orientation clusters × IC × Ethnicity;

Model 2 = Gender + Socio Economic Status + Age + Non-Verbal Intelligence + Generation + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Cultural orientation clusters × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × Cultural orientation clusters × Ethnicity + Discrimination × IC × Ethnicity;

Model 3 = Gender + Socio Economic Status + Age + Non-Verbal Intelligence + Generation + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Cultural orientation clusters × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × IC × Ethnicity;

Model 4 = Gender + Socio Economic Status + Age + Non-Verbal Intelligence + Generation + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × IC × Ethnicity;

Model 5 = Gender + Socio Economic Status + Age + Non-Verbal Intelligence + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × IC × Ethnicity;

Model 6 = Gender + Age + Non-Verbal Intelligence + Discrimination + Cultural orientation clusters + IC + Ethnicity + Discrimination × Cultural orientation clusters + Discrimination × IC + Discrimination × Ethnicity + Cultural orientation clusters × IC + IC × Ethnicity + Discrimination × Cultural orientation clusters × IC + Discrimination × IC × Ethnicity.