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**BRIDGING CULTURES AND CONTEXTS:
A MULTIMETHOD STUDY OF RISK AND PROTECTIVE
FACTORS FOR SOCIO-EMOTIONAL ADJUSTMENT AMONG
EARLY ADOLESCENT IMMIGRANTS IN ITALY**

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Summary

The Italian context, in line with what is happening in many other European countries, is increasingly becoming a multicultural reality. Due to the growing number of immigrants worldwide, migrant youth are at present an integral part of our society. To ensure the successful integration and full realization of the immigrants' potential, as well as to prevent behavioral risk and educational inequalities, it is fundamental that receiving societies invest in the well-being of immigrant youth.

Early adolescence represents a critical developmental period involving changes and challenges not only at the physical level, but also in the emotional, social and psychological domains. Such developmental processes are even more complicated for immigrant youth, who additionally need to face the challenges linked to having their "feet in two worlds". Hence, one might think that immigrant preadolescents might generally be at higher risk of socio-emotional difficulties. However, this is not always the case, and mounting evidence suggests that immigrant youngsters manage to move adaptively across their worlds, coping without undue stress with these important developmental issues. Thus, the latest evidence invites researchers to overcome the deficit perspective which dominated past research on immigration in favor of a more positive oriented one, able to shed light on the resources that immigrant minors need as to adjust well to their societies. Indeed, immigrant youths' adaptation seems to vary according to the unique interaction of different cultural, social and personal aspects.

Which variables could represent risk or protective factors for early adolescent immigrants' socio-emotional adjustment? This question is the cradle of my doctoral thesis. Providing answers to this question would lay the ground for the development of valid interventions in cross-cultural contexts, needed now more than ever to promote the

integration and well-being of immigrant populations.

Such an objective necessarily requires an integrative and multidisciplinary framework, taking into consideration the complexity that arises from different levels and developmental contexts in which immigrants' adaptation is embedded: the cultural (e.g., ethnicity, receiving society), social (e.g., family, community), and individual levels (e.g., memory, impulsivity). In our studies, we focus on Moroccan, Romanian and Chinese immigrant families as they form the largest ethnic communities in Italy, a country where immigration is a still recent, but nonetheless growing phenomenon.

In Study 1, we assessed whether executive functions (EFs) moderated the association between self-construal and social adjustment among Moroccan, Romanian, and Italian early adolescents. Our results showed that the positive effect of having an interdependent orientation on social competence emerged to be stronger for Moroccan and Romanian immigrants with high levels of cognitive flexibility, as well as for Moroccan immigrants counting on high levels of inhibitory control. Last, working memory was associated with higher social competence, regardless of cultural influences.

In Study 2, we sought to examine whether the discrimination-problem behavior link was moderated by youths' acculturation orientations and impulse control among Moroccan and Romanian early adolescent immigrants. The findings indicated that the negative effect of discrimination on behavioral adjustment was stronger for immigrants who endorsed separation as acculturation strategy, but only at low levels of impulse control. In contrast, in face of discriminatory experiences, a good impulse control represented a risk for behavioral problems among assimilated immigrants. In addition, discrimination had a detrimental effect on behavioral adjustment especially for Romanian immigrants when they could not count on good levels of impulse control.

In Study 3, we aimed to investigate whether EFs moderated the association between parental practices and emotional-behavioral problems among Chinese immigrant and Italian non-immigrant early adolescents. Our results indicated that a scarce level of inhibitory control represented a risk factor in situations of inadequate parental supervision for both groups. In contrast, a better cognitive flexibility put Chinese immigrant early adolescents at more risk of emotional-behavioral problems when left unsupervised. Last, working memory was associated with better emotional-behavioral adjustment, regardless of cultural and family influences.

Our work highlights the complex processes involved in immigrant youth's adaptation, which results from an intricate reality made of cultural influences, developmental contexts and personal characteristics. Overall, the findings highlight both commonalities and specificities in patterns of associations among personal, family/social, and cultural variables across groups. The acknowledgment of the complexity of such results paves the way to some potential guidelines for clinical implications and future research. Cognitive flexibility, inhibitory control, and working memory may represent important assets for preadolescent immigrants' positive adaptation. However, each of these individual abilities can assume different meanings and functions according to ethnic and personal differences which are unique to each single adolescent.

Our hope is for future researchers and professionals to explore subjective meanings attributed to personal experiences, taking into account the individual and cultural specificities of each young immigrant. This is how we can build bridges between different developmental and cultural contexts, as to facilitate adjustment processes in immigration and multicultural contexts.

Riassunto

Il contesto italiano, in linea con la situazione di molti altri stati europei, si delinea sempre più come una realtà multiculturale. L'aumento del numero di persone immigrate a livello internazionale ha fatto sì che una parte sempre più cospicua della nostra società sia rappresentata da minori stranieri. Per garantire l'integrazione e la piena realizzazione del potenziale degli immigrati, e per prevenire il rischio di disuguaglianze educative e psicologiche, è fondamentale che le società riceventi investano nella promozione del benessere dei ragazzi immigrati.

La preadolescenza è un periodo critico per lo sviluppo, ricco di cambiamenti e di sfide evolutive non solo a livello fisico, ma anche sul piano emotivo, sociale, nonché psicologico. Questi processi evolutivi sono ancora più complicati per i minori immigrati, che si ritrovano in più a dover affrontare anche le sfide legate all'“essere a cavallo tra due mondi”. Verrebbe quindi da pensare che i ragazzi immigrati siano tendenzialmente a maggior rischio di problemi socio-emotivi. Tuttavia non è sempre così e un numero crescente di studi dimostra come questi ragazzi riescano a viaggiare tra un mondo e l'altro in modo adattivo, affrontando senza particolari conseguenze negative questi importanti compiti evolutivi. Così, ricerche recenti invitano a superare la prospettiva deficitaria che ha regnato a lungo nello scenario della ricerca sull'immigrazione, per fare posto a una visione più positiva, che illumini le risorse che questi minori sviluppano per riuscire a vivere bene nella loro società. Infatti, l'adattamento degli immigrati sembra variare a seconda di come diversi aspetti culturali, sociali e personali interagiscono tra loro.

Quali sono le variabili che possono rappresentare dei fattori di rischio o di protezione per l'adattamento socio-emotivo dei preadolescenti immigrati? Questa è la

domanda al centro di questa tesi di dottorato. Una risposta anche parziale a questa domanda potrebbe gettare le basi per lo sviluppo di interventi validi in contesti multiculturali, necessari ora più che mai per promuovere l'integrazione e il benessere delle popolazioni immigrate.

Un obiettivo del genere richiede necessariamente una cornice teorica multidisciplinare e integrativa, che riesca a tenere conto della complessità dei diversi livelli e contesti di sviluppo in cui si colloca l'adattamento dei giovani immigrati: il livello culturale (ad es., etnia, società ospite), sociale (ad es., famiglia, comunità) ed individuale (ad es., memoria, impulsività). Nei nostri studi, ci concentriamo sulle famiglie immigrate marocchine, romene e cinesi, che rappresentano le più numerose comunità immigrate in Italia, un paese in cui l'immigrazione è un fenomeno recente, ma in forte crescita.

Nel primo studio abbiamo indagato come le funzioni esecutive (FE) moderassero la relazione tra concetto di sé e adattamento sociale in un campione di preadolescenti marocchini, romeni e italiani. I nostri risultati hanno evidenziato che l'effetto positivo dell'aver un orientamento interdipendente sul livello di competenza sociale è più forte per i ragazzi marocchini e romeni con un alto livello di flessibilità cognitiva, così come per i ragazzi marocchini che possono contare su alti livelli di controllo inibitorio. Infine, la memoria di lavoro è risultata associata ad una migliore competenza sociale indipendentemente dalle influenze etniche e culturali.

Nel secondo studio abbiamo cercato di capire se l'associazione tra discriminazione e comportamenti problematici fosse moderata dalle strategie di acculturazione e dal livello di controllo degli impulsi in ragazzi marocchini e romeni immigrati. Abbiamo trovato che l'effetto negativo della discriminazione percepita sull'adattamento psicologico sembra essere particolarmente forte per i ragazzi immigrati

che scelgono la separazione come strategia di acculturazione, ma solo quando non possono contare su un buon livello di controllo degli impulsi. Al contrario, di fronte ad episodi discriminatori, un buon controllo degli impulsi può rappresentare un rischio di maggiori problematiche comportamentali per i ragazzi assimilati. Inoltre, la discriminazione è risultata avere un effetto dannoso per l'adattamento specialmente per quei ragazzi romeni che non possono contare su buoni livelli di controllo degli impulsi.

Nel terzo studio eravamo invece interessati ad investigare se le FE moderassero l'associazione tra le pratiche genitoriali e i problemi emotivo-comportamentali in preadolescenti cinesi e italiani. I nostri risultati hanno indicato che un livello scarso di controllo inibitorio rappresenta un fattore di rischio in situazioni di inadeguata supervisione genitoriale in entrambi i gruppi. Invece, livelli più alti di flessibilità cognitiva rendono i ragazzi cinesi immigrati più vulnerabili a problematiche emotivo-comportamentali quando lasciati senza supervisione. Infine, la memoria di lavoro è risultata associata ad un migliore adattamento indipendentemente dalle influenze culturali e familiari.

Il nostro lavoro mette in luce la complessità dei processi coinvolti nell'adattamento dei ragazzi immigrati, frutto di un'intricata realtà fatta di influenze culturali, contesti di sviluppo e caratteristiche personali. In generale, i nostri risultati evidenziano sia somiglianze sia specificità nei pattern di associazioni tra variabili personali, familiari/sociali e culturali nei nostri gruppi. Il riconoscimento della complessità di questi risultati ci permette di suggerire alcune implicazioni cliniche e di ricerca per il futuro. Sembra che la flessibilità cognitiva, il controllo inibitorio e la memoria di lavoro possano essere delle importanti risorse per i preadolescenti immigrati, ma sembra anche che ognuna di queste capacità possa assumere significati e ruoli diversi a seconda del background etnico e personale di ciascun ragazzo.

L'invito è quindi ad esplorare i significati soggettivi attribuiti all'esperienza, tenendo conto delle specificità individuali e culturali di ciascun ragazzo immigrato. Solo così sarà possibile promuovere iniziative che sostengano la costruzione di ponti tra i vari contesti culturali e di sviluppo per agevolare i processi di adattamento nei contesti di immigrazione.

CHAPTER 1

General introduction

“Let’s welcome people into their new communities as neighbors and friends.

Let’s build bridges, not walls”.

Ban Ki-moon (2016)

United Nations Secretary-General

In 2015 the number of migrants kept growing, both in Europe and in North America, with at least 244 million immigrants worldwide, over 3% of the whole world population (United Nations, 2016). As a result, children and adolescents with an immigration background comprise an integral part of many contemporary societies (Masten, Liebkind, & Hernandez, 2012).

To ensure the successful integration and full realization of the immigrants’ potential, as well as to prevent behavioral risk and educational disparities between children of immigrant and national origin, it is fundamental that receiving societies invest in the well-being of immigrant youth (Motti-Stefanidi & Masten, 2013). Throughout this doctoral thesis, the position of the European Union’s Commission of the European Communities (2003) is supported, by means of firmly believing that in order to promote immigrants’ adjustment it is essential that all peoples living in a country are enabled to maintain their heritage cultures. To do so, everyone should be helped to reach full economic, social, cultural and political participation in the host society (García-Coll et al., 2015).

But how can we promote immigrant youth’s socio-emotional adjustment? The

implementation of effective intervention programs depends on the possibility to detect potential risk and protective factors which could become targets of both intervention and prevention efforts. A related question is: does one size really fit all? Increasing evidence points to the differential susceptibility to risk and asset factors on the basis of both socio-cultural and individual differences (Li-Grining, 2012; Menting, Van Lier, Koot, Pardini, & Loeber, 2016; Zhou, Tao et al., 2012). Thus, the study of the complex interplay among cultural, family/social, and personal factors becomes crucial as to gain a more in-depth understanding of the conditions able to promote young immigrants' successful development and integration.

In this chapter, a general overview of studies on immigrant youth's adaptation is provided, highlighting the increased need of studies aimed to unravel the different conditions under which adaptation may be either promoted or compromised. Next, the theoretical framework adopted in the present research project is presented. The subsequent paragraph explains why our focus is on early adolescence, introducing the cultural, social, cognitive, and psychological factors involved in the present study. A general description of the main features of the present research project is then outlined, stemming from the limitations of previous research in migration and cross-cultural developmental research.

1.1. Socio-emotional adjustment in immigrant children and adolescents

In this doctoral thesis, socio-emotional adjustment is measured in terms of both problem behavior (i.e., internalizing and externalizing difficulties) and social functioning (i.e., prosocial behavior and social competence). Overall, problem behaviors refer to a set of psychological difficulties and non-adaptive behaviors which can find different ways of expression. Such difficulties can be expressed according to an inhibited style linked to

withdrawal, loneliness, depression and anxiety (i.e., internalizing symptoms). Alternatively, problem behaviors may represent an acting-out style described as aggressive, impulsive, coercive and noncompliant (i.e., externalizing symptoms). In terms of social functioning, prosocial behaviors are voluntary actions undertaken to benefit others, such as sharing, consoling, and helping (Eisenberg, Fabes, & Spinrad, 2006). Conversely, social competence refers to the effectiveness in social interactions to achieve personal goals through the capacity to initiate and maintain positive social relationships, and is linked to a variety of social skills, such as complying with social rules and taking turns (Sette, Baumgartner, & MacKinnon, 2015).

Psychological and social adaptation plays a fundamental role in youths' positive development. However, the scenario of immigrant youth's socio-emotional adjustment is rather complex, given the wide diversity of potential intervening variables, such as different ethnic backgrounds, generational status, receiving societies, acculturating stressors, just to mention a few. Intuitively, one could think that migrants are at greater risk of socio-emotional difficulties, due to the many acculturative stressors and challenges they experience during the migration process. This idea is extensively known in migration research as the "migration morbidity hypothesis" (Dimitrova & Chasiotis, 2012).

However, a recent review on immigrant youths' well-being in North America reports inconclusive findings, suggesting that these youngsters do not emerge to be at higher risk of a negative psychological adjustment compared to their national counterparts (Kouider, Koglin, & Petermann, 2015). The counterintuitive finding that first-generation immigrant children report a better psychosocial adjustment compared to both their second-generation immigrant and national peers despite a lower socioeconomic status has been termed the "immigrant paradox" (Garcia-Coll & Marks,

2011). However, this phenomenon has mostly been observed in the US and Canada and seems to vary according to ethnic background, family, cultural, and contextual characteristics in the receiving context (Hofferth & Moon, 2016). Interestingly, the paradox seems to be more likely during adolescence than during childhood (García Coll et al., 2012). In addition, it cannot be easily generalized to the European context due to salient historical, political and social differences between the two continents in respect to migration (Kouider, Koglin, & Petermann, 2014; Motti-Stefanidi & Masten, 2013).

Migrant fluxes to Europe are recent and concern mostly unskilled labor migrants, whereas the US and Canada have known a voluntary and long-term immigration (Dimitrova, Chasiotis, & van de Vijver, 2016). Another obstacle to the generalization of finding across continents concerns the different definition of “immigrant” in the American and European literatures. As stated by Motti-Stefanidi and Masten (2013), immigrants in North America are often referred to as “minority children”, comprising both children of immigrant descent and involuntary (e.g., Latino American children) minorities. On the other hand, in the European literature all children of immigrant descent are referred to as immigrants, regardless of their generational status. Recent studies on immigrant youth’s adjustment in the European context did not support the presence of an immigrant paradox, depicting immigrant children and adolescents as a vulnerable at-risk population (Dimitrova et al., 2016; Kouider et al., 2014; Stevens et al., 2015). Thus, investigating the conditions for young immigrants’ well-being is a top priority on the research agenda to inform both policy and practice.

A recent meta-analysis of 51 studies examined internalizing, externalizing, and academic outcomes among immigrant children and adolescents in Europe (Dimitrova et al., 2016). Overall, the migration morbidity hypothesis was better supported than the immigrant paradox. Geographic area, socio-economic status, developmental period and

gender composition of the sample were found to moderate the link between immigrant status and adjustment. However, almost all studies included in the meta-analysis relied on self-report questionnaires. Moreover, due to the high ethnic heterogeneity of the samples, ethnic group effects could not be tested.

Similarly, another recent review highlights how immigrant youths in Europe are generally at greater risk of developing internalizing disorders compared to their national peers (Kouider et al. 2014). A more recent internationally comparative research by Stevens et al. (2015) used data from 11-, 13-, and 15-year-old adolescents who participated in the Health Behaviour in School-aged Children (HBSC) study in nine different European countries and the United States. The authors found a negative impact of immigrant status on adolescents' emotional and behavioral adjustment. Specifically, both first and second generation immigrants reported higher levels of aggressiveness and a lower life satisfaction than their mainstream peers, whereas second generation immigrants reported more psychosomatic symptoms than natives. Overall, results seemed to be similar across receiving countries and genders. However, the differential impact of each specific ethnic background was not taken into consideration.

Taking a look at the European literature on migrant populations, most research comes from the Netherlands, UK or Norway, which show a high interest in migrant children's adaptation, more than other European countries (Kouider et al., 2014). Hence, the most investigated ethnic minorities in Europe are the ones who are more present in these countries, namely Turkish, Moroccan, and South Asian (i.e., Indian, Pakistani) immigrant groups, representing a very small range of nationalities compared to the hundreds of different ethnicities on the European soil.

Most European studies fail to account for the diverse ethnic backgrounds of immigrants, merging together different ethnic minorities as to get to larger sample sizes

(Kouider et al., 2014). In addition, most studies to date have been conducted in Western and Northern European countries, which have a longer migration history compared to Southern Europe, where immigration is a rather recent phenomenon (Dimitrova et al., 2016). Even within Europe, receiving societies differ according to migration history and geographical area (e.g., Northern vs Southern Europe). However, scholars increasingly underscore the importance of considering the interaction between the unique characteristics of receiving societies and the specific aspects of each ethnic group and outcomes measured, as to shed light on the contrasting results emerging from prior studies (Kouider et al., 2014; Motti-Stefanidi & Masten, 2013; Stevens & Vollebergh, 2008).

In the Italian context, the first nation-wide extensive survey conducted on children attending middle school in 2005/2006 with at least one foreign-born parent was the Survey on Second Generations in Italy (ITAGEN2) (Dalla Zuanna, Farina, & Strozza, 2009). It focused on several determinants of social integration, such as language attitudes, school performance, peer relationships, and sense of belonging to Italy. A total of 6,368 immigrant and 10,537 native early adolescents (11-14 years old) were interviewed, with a follow-up two years later (in 2008). Findings highlighted worse academic performance in the immigrant sample, even when immigrants were born in Italy. Being born in Italy or having spent a longer time in the host country promoted a better integration. However, social and academic disparities were present, and were largely accounted for by socio-economic disadvantage and by the lower educational level of immigrant parents. After controlling for socio-economic status and background characteristics, only recent immigrants differed from natives: accounting for these aspects, there even seemed to be an advantage in terms of academic achievement for Chinese immigrant children over their national peers (Barban & White, 2011).

Vieno, Santinello, Lenzi, Baldassari and Mirandola (2009) used data from the previously mentioned HBSC project, a cross-sectional survey investigating health behaviors among adolescents aged 11-15 in selected European countries in collaboration with the World Health Organization (WHO) (Aaro, Wold, Kannas, & Rimpela, 1986). They focused on 481 first-generation immigrants from different cultural backgrounds and 6,245 national adolescents in Italy and concluded that immigrant adolescents, compared to their native peers, were more affected by psychosomatic symptoms, less satisfied about their health and life, and less happy. However, such results relied completely on adolescents' self-reports and did not account for specific ethnic backgrounds. In addition, no information was provided on second generations, who were included in the native sample, comprising all adolescents who were born in Italy regardless of their family ethnic background.

More recently, Margari et al. (2013) explored academic, social, and psychological difficulties in a sample of 90 migrant and 90 national children (from kindergarten to secondary school) in Southern Italy by means of teacher reports. Overall, they found that teachers detected academic and adaptive problems more easily in immigrant children, whereas they were less aware of their psychological difficulties. The latter were detected more easily in native schoolchildren. In addition, first-generation immigrant children reported more social problems compared to their second-generation counterparts. However, socio-economic inequalities were not controlled in the analyses. Other limitations of the study include the wide age range of the participants and the reliance on teacher reports exclusively. Furthermore, immigrant children came from 13 different countries, and exploratory analyses revealed differences in their adaptation according to their specific ethnic background. However, the small sample size of each nationality did not allow to investigate this issue further.

So far, the reported studies suggest that migrant youth in Italy tend to show more psychological and social difficulties than their national counterparts, in line with European findings (Dimitrova et al., 2016). However, Dimitrova and Chasiotis (2012) outlined a different picture for first-generation Albanian and Serbian immigrant children (7 to 12 years old). Both teachers and children completed a set of self-report measures concerning children's prosocial behavior and emotional and psychological difficulties. In line with Margari et al.'s findings, teachers did not detect any differences in emotional, psychological or social adjustment between the immigrant and national samples. However, immigrant children's self-reports revealed lower emotional instability and aggression compared to mainstream Italian children, whereas no differences emerged in their level of prosocial behavior or depression. These findings partly support the presence of an advantage in terms of psycho-social adaptation in first-generation immigrant youth in Italy. However, the study focused only on two ethnic minorities which are traditionally and fully located in the Trieste area in the Northwest of Italy, thus compromising the generalizability of results to other more representative ethnic groups and to other Italian regions.

An advantage in adaptation for immigrant youth was supported also by Laghi, Pallini, Baiocco and Dimitrova (2014). Their sample consisted of 200 first-generation Chinese immigrant adolescents and 200 national adolescents (age range 17-19 years) living in Central Italy. All adolescents completed a set of self-report measures to assess their psycho-social adaptation and attachment to parents and peers, and their overall life satisfaction. Academic achievement was also taken into consideration. Findings suggested that Chinese immigrants reported a better functioning across all the investigated areas of adjustment. However, it can be argued that a self-report bias could be responsible for such results, due to higher social desirability effects in the Chinese

sample, in line with Chinese values of respect toward parents and community in public, which prevents them from speaking their mind freely.

As previously stated, many variables may explain such contrasting and inconsistent findings across studies, including the different age range of participants, the reliance on different informants and on instruments measuring different positive or negative outcomes, the specificities of each ethnic group, the control variables used in the analyses or even the historical time of assessment, since social changes and different migration policies could impact on immigrants' adjustment. Although in recent years migrant youth has become an integral part of the Italian society, research on immigrants' adaptation in this country is scarce (Dimitrova & Chasiotis 2012; Margari et al. 2013). Researchers so far have mostly focused on the sociological and economic adaptation of immigrants by means of qualitative techniques, with a special interest in the political and demographic determinants which could boost or jeopardy migrants' settlement in the host country.

In the Italian psychological literature, most studies had the principle aim of comparing outcomes across immigrant and non-immigrant samples, paying scant attention to the conditions under which different factors may intervene to boost or worsen socio-emotional adjustment in immigrant populations. The few studies addressing these issues evidenced a crucial role of both ethnic and national identities and of contextual and cultural variables specific to ethnic groups, which interacted in links with psychological and socio-cultural adaptation (Musso, Inguglia, & Lo Coco, 2015; Musso, Inguglia, & Lo Coco, 2016).

In addition, so far most studies on immigrant children and adolescents both in American and European countries have focused on internalizing (e.g. symptoms of anxiety, depression), externalizing (e.g. aggressive behaviors), and academic difficulties

(Dimitrova et al., 2016; García Coll et al., 2012). This focus on negative outcomes has fostered a deficit perspective in migration research. Despite increasing evidence shows how minority children often report some strengths in the social, language and cognitive fields over their national peers (e.g. personal competence skills, flexibility) (Cabrera, 2013; Fuligni & Tsai, 2015), scant studies have focused on migrant youth's positive adjustment. This is why in the present work we included both positive and negative outcomes, adopting a positive youth development perspective, in line with the latest findings in the immigration field (Cabrera, 2013).

An introduction to immigration in Italy and to the social, political and historical context of immigration in this country is provided in the next chapter. The present state of the art, however, suggests that further research in this field is warranted, with more rigorous models and analyses to more extensively understand the link between immigrant status, cultural background, and psychological adjustment (Kouider et al., 2014). In addition, there is a need for studies which do not simply compare outcomes across groups, but try to understand and compare the ways in which specific variables may interact as to explain what leads to a positive or a negative outcome across groups (Kouider et al., 2014). In the present thesis, we sought to address this issue as to identify potential risk and protective factors explaining socio-emotional adjustment in immigrant youth from different ethno-cultural backgrounds.

1.2. An integrative framework to study positive immigrant youths' adaptation in context

A central issue in migration studies is the poor integration among developmental, clinical, neuropsychological, and social psychological perspectives (Motti-Stefanidi, Berry, Chrysoschoou, Sam, & Phinney, 2012). It is widely acknowledged that immigrant youth's adaptation arises from multi-faceted and multi-determined processes

that cannot be accounted for by a single discipline. Nonetheless, extant research mostly relies on one theoretical and methodological approach to account for individual differences in well-being among children and adolescents of immigrant background. To overcome this issue, the present study aims at integrating traditionally independent research fields to study immigrant youth's adaptation in context following the theoretical approach recently proposed by Motti-Stefanidi et al. (2012).

In the field of developmental psychology, scholars agree that adaptation is the result of multiple processes at the individual, family/social, and cultural levels. Motti-Stefanidi et al. (2012) postulated a multi-level framework, considering each of these levels and combining important frameworks which have been widely used in developmental and cross-cultural research in one single integrative model.

The model raises from a perspective of social psychology, namely from the three-level model of immigrant adaptation proposed by Verkuyten (2005). His model systematically investigates relationships and influences among three levels of analysis: personal variables, interaction, and social structure. In this sense, Verkuyten stresses the importance of analyzing how both individuals and groups perceive the social context and the consequences of their perceptions (Motti-Stefanidi et al., 2012).

The authors also acknowledge that individual factors cannot influence psychological outcomes independently of environmental factors, and that especially in migration research the adoption of an ecological framework becomes crucial as to get to a better understanding of immigrant youths' psychological adaptation, referring to Bronfenbrenner's ecological model of human development (Bronfenbrenner & Morris, 2006).

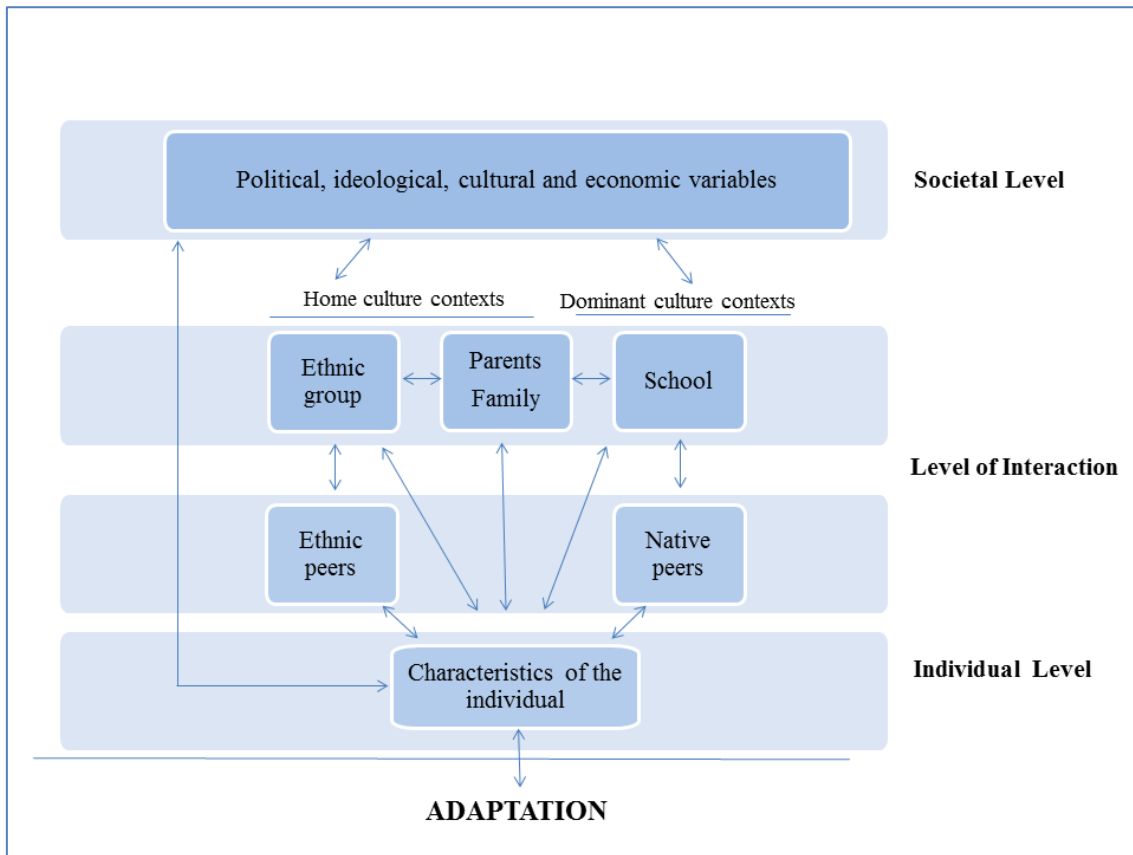
In addition, they refer to Berry's cultural transmission model (Berry, Poortinga, Breugelmans, Chasiotis, & Sam, 2011), which stresses the importance of considering

both acculturation and enculturation of immigrant children and, more importantly, the transformations which originate from the bidirectional contact between minority and majority groups. Such transformations are highly important since they can lead to different acculturation strategies in the receiving societies in terms of attitudes, behaviors and cultural identities: integration, assimilation, separation and marginalization (Berry et al., 2011).

Finally, the authors draw upon a risk and resilience framework as theorized by Masten (2007). Resilience is a dynamic concept and refers to the capacity of a system for successful adaptation when facing difficult challenges and threats, like traumatic experiences. In Masten's framework, individual adaptation is influenced not only by the prior development of the individual, but also by one's adaptive capacities and strengths, defined as promotive and protective factors available to the organism, and personal vulnerabilities and environmental stressors (risks). It appears clear that such a framework involves multiple interacting systems within the individual, and many interactions between individuals and their contexts. It is an appealing framework for developmental research and stakeholders, due to its focus on mitigating risk and supporting resilience in at-risk situations (Masten, 2016).

Drawing upon all these models, Motti-Stefanidi et al.'s (2012) theoretical framework encompasses both developmental and acculturation perspectives in the study of positive adaptation in immigrant children, focusing not only on success in developmental tasks, but also on acculturative issues and psychological well-being (see Figure 1.1).

Figure 1.1 Multi-level and integrative theoretical model proposed by Motti-Stefanidi, Berry, Chryssochoou, Sam, & Phinney (2012, p. 66)



Three main interconnected levels are considered: the societal level, the level of interaction (individuals and their contexts), and the individual level (Motti-Stefanidi et al., 2012). The societal level refers to cultural beliefs, social representations and ideologies, as well as variables that inform about power positions within society (e.g. social class, ethnicity). These variables may impact on immigrant children directly or indirectly through the level of interaction. The level of interaction, or middle level, deals with interactions which happen in different contexts, such as the family, the school, and peer groups. These contexts are divided into those representing the host culture (school, native peers) and those referring to the heritage culture (family, ethnic group), as to underline the coexistence of both set of values and experiences in immigrant youngsters. Finally, the individual level concerns intra-individual and personal

variables, such as temperament, cognition, and motivation. It is argued that both sociocultural circumstances and human agency, namely the individual and society, play a fundamental role in immigrant youth's adjustment.

From a methodological perspective, this framework can lead to the study of nested models and their role in children's adaptation referring to levels of context. Alternatively, researchers can decide to concentrate on a specific level of analysis or interaction examining adaptation, contextual, and individual variables at different levels of scientific explanation (e.g., social status can be measured either at the societal level, or at the school level, or at the individual level) (Motti-Stefanidi & Masten, 2013).

In the present study, we take into consideration variables belonging to all three levels, but with a specific focus on the individual level of analysis. Hence, social status, ethnicity, host, and heritage contexts of enculturation and acculturation as well as cognition and self-concepts are measured at the individual level by assigning a score to each participant. The focus on this individual level of analysis arises from the need to explain individual differences in immigrant youth's adaptation which could account for the large variability in outcomes reported in the literature.

In doing so, we try to avoid using culture as a mere label and adopting simple proxies for cultural variables, but we try to gather all information about the self and context from early adolescents themselves and their parents via their individual and personal perceptions and performances. Participants' subjective experience and perception of the world represent the way in which they elaborate their everyday experiences and contribute to shaping their social environment as well, thus significantly affecting the quality of their adjustment (Boyce, Frank, Jensen, Kessler, Nelson, & Steinberg, 1998). In one of our studies we also focus on the middle level, more specifically on the family level in terms of parenting. This level of analysis is

considered in the study involving Chinese immigrant families (see Chapter 5). The cultural distance between heritage and host cultures is maximized in this ethnicity, making parenting especially salient for the study of immigrant adaptation (Chen, Hua, Zhou, Tao, Lee, Ly, & Main, 2014; Ho, 2014).

In the current thesis, all studies can be read in light of this integrative framework, which represents a comprehensive starting point to picture the complex interplay of cultures, developmental contexts, and personal factors in explaining socio-emotional adjustment. Specifically, we try to overcome limitations of prior studies whose focus was mainly on the last and ultimate level of analysis, namely the level of adaptation of immigrants. The main theme of the present thesis is not the final outcome, but the conditions for such outcome. In particular, the focus is on the processes intervening to boost or compromise socio-emotional adjustment across different immigrant groups. Moreover, by comparing specific ethnic groups in the same study, it is possible to detect both common and unique effects across cultures and individuals in different developmental contexts.

1.3. Early adolescence: cultures, developmental contexts, and personal factors

In the present study we focus on preadolescents aged between 11 and 13 years of age (Steinberg, 1993), all attending public middle schools in Italy. The age range of early adolescents is not clearly defined in the literature and varies from one research to another, usually ranging from 9 to 13 years of age. Nonetheless, early adolescence is accepted as a legitimate and crucial developmental stage in developmental psychology (Simmons & Blyth, 1987).

We focus on early adolescence because it represents an overlooked, but critical developmental phase for immigrant youth's socio-emotional adjustment. During early

adolescence, many changes take place at the physical, physiological, cognitive, emotional, behavioral, social relational and institutional levels. This is why such a developmental phase used to be known as “storm and stress” (Arnett, 1999), and is still regarded as an extremely sensitive developmental period which could represent an “ontogenetic laboratory” for many researchers in developmental science (Steinberg & Lerner, 2004).

At present, scholars agree that most youngsters manage to cope without undue stress with the important changes and challenges typical of this period. They manage to adjust to the physical, hormonal and neural changes linked to the onset of puberty (Crone & Dahl, 2012), become increasingly independent from their parents and more connected to peers (Paikoff & Brooks-Gunn, 1991). Nonetheless, such significant and striking changes can have an impact on future mental health, and evidence points to early adolescence as a critical time for the onset and development of internalizing and externalizing problems (Andersen & Teicher, 2008; Dahl, 2004). In addition, due to the growing importance of peers and social interactions, early adolescence is considered a crucial time in terms of prosocial behavior and social competence skills (Baker, Grant, & Morlock, 2008; Steinberg & Monahan, 2007). These developmental processes during early adolescence are even more complicated for youths with a migration background, who begin to move across a wider range of contexts and have increasing contact with people from different backgrounds. Hence, they start to develop a greater awareness of cultural and personal differences, and begin to question their own group memberships and identities (Phinney, 2006).

Thus, the study of risk and protective factors linking cultures, developmental contexts and personal issues to socio-emotional adjustment becomes crucial at this developmental stage with immigrant youth, since it represents a very sensitive

developmental time when to implement potential prevention and intervention programs to promote psychological well-being.

1.3.1. Independent and interdependent self-construals

Cultural influences have been shown to affect many cognitive, emotional, and motivational processes (Kagitcibasi, 2007). One's self concept in terms of independent or interdependent orientations may be conceptualized as the link between cultural influences and the self, and previous research demonstrates that independent and interdependent self-construals are associated with socioemotional outcomes (Oyserman, Coon, & Kemmelmeier, 2002; Singelis, 1994).

According to Markus and Kitayama (1991), one's self-construal refers to how individuals see the self in relation to others. The authors identified two such self-construals, independent and interdependent. Individuals with independent orientations consider themselves to be separate and unique from others, highly valuing personal success. Conversely, individuals with interdependent orientations consider themselves to be connected with others, and their behaviors are more context-dependent and intended to maintain harmony with others (Cross, Hardin, & Gercek-Swing, 2010). However, Singelis (1994) noted that these two self-construals are both basic human needs that coexist in the same person, but that the cultural context typically promotes more the development of one or the other self-construal. In this sense, self-construals can be seen as related to the individualism-collectivism cultural syndrome (Triandis, 1996), in that the independent self is highly socialized in individualistic cultures (e.g., United States, Italy), whereas the interdependent self-construal is typical of collectivist cultures (e.g., China, Japan).

Children start to learn about the meaning of one's self-concept and identity during

childhood, and it is during the transition into early adolescence that they begin to make sense of identity issues and to understand the personal meaning of one's cultural group membership (Phinney, 1989). It is during early adolescence that identity issues in terms of independent and interdependent orientations begin to emerge. According to Erikson's (1968) psycho-social stages of development, early adolescents are resolving the psycho-social crisis between Industry and Inferiority, gaining a sense of self-competence and autonomy, and are entering the stage in which their developmental task is to define their own identity. During successful early adolescence, the young person experiences different roles and reaches a condition of self-certainty as opposed to self-doubt.

Marcia's (1966) identity status model is the most important elaboration of Erikson's theory on identity formation. Marcia's model distinguishes four different identity statuses based on the amount of exploration and commitment experienced by the adolescent in defining his/her identity. Evidence shows that there is a movement from high exploration without commitment in early adolescence towards more stable commitments in late adolescence, when exploration stops (Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010).

Despite the emergence of identity processes during early adolescence, most research on immigrant youth's self-concept and identity development in links with socio-emotional adjustment has focused on older adolescents (Costigan, Koryzma, Hua, & Chance, 2010; Dimitrova & Chasiotis, 2012). Notably, early and middle immigrant adolescents differ in terms of identity processes, and the interaction among self-related processes and broader ethnic attitudes in links with acculturative stress varies with age (Musso et al., 2016). Overall, mounting evidence points to the possible promotive role of having a bicultural identity for immigrant youth in multicultural societies, where both independent and interdependent self-construals equally coexist in the same individual

and are linked to better socio-emotional outcomes (Nguyen & Benet-Martinez, 2013).

1.3.2. Ethnic discrimination and acculturation orientations

At a societal level, perceived ethnic discrimination is at present a pressing public health concern for many European and non-European receiving societies, including Italy (Eurobarometer, 2015). Exposure to discrimination for immigrants increases during early adolescence (Phinney, 1989), and represents a crucial risk for psychological adjustment (Dimitrova et al., 2016; Eurostat, 2016). Extensive evidence documented the longitudinal associations between perceived ethnic-racial discrimination and youth adjustment across all ethnic-racial minority groups (Umaña-Taylor, 2016).

According to a risk and resilience framework (Masten & Coatsworth, 1998), youths have assets in their lives that can protect them against the negative effects of known risks. Mounting evidence points to the protective role of ethnic identity in reducing the negative impact of discrimination on socio-emotional adjustment in immigrant children and adolescents (Umaña-Taylor, 2016). However, less is known on the relationship between discrimination and acculturation profiles in links with psychological adjustment.

Prior studies which focused on acculturation orientations showed that individuals who endorse separation (i.e., high orientation towards the heritage culture, and low orientation toward the mainstream culture) are more likely to experience discrimination, whereas assimilated (i.e., low orientation towards the heritage culture, and high orientation toward the mainstream culture) and integrated youth (i.e., high orientation towards both heritage and mainstream cultures) perceive lower levels of discrimination (Berry, Phinney, Sam, & Vedder, 2006; Musso et al., 2015). Nonetheless, preliminary evidence suggest that adolescents who endorse assimilation are more at risk of problem

behaviors when experiencing discrimination, since a stronger orientation towards the mainstream society is thought to magnify the salience of discriminatory experiences (Musso et al., 2015; Umana Taylor & Updegraff, 2007).

It is worthy of note that the protective role of endorsing a specific acculturation strategy in face of discriminatory experiences can vary as a function of significant variability in key features of prior research (e.g., developmental period of focus, ethnic background, receiving society, outcomes of interest). As stated by Ward and Geeraert (2016, p. 99), “both acculturative stress and acculturative change unfold in an ecological context”. The authors suggest that increasing cultural distance between heritage and mainstream societies complicates the achievement of integration, impacting negatively on socio-emotional adjustment. Yet, how acculturation orientations interact with perceived discrimination among immigrant early adolescents from different ethnic backgrounds in Italy remains unclear.

1.3.3. Parental practices

The influences of parenting on youths’ socio-emotional adjustment have been widely investigated (Kawabata, Alink, Tseng, van Ijzendoorn, & Crick, 2011; Lansford et al., 2016). Indeed, the family represents one of the most important proximal influences on children’s development (Bronfenbrenner & Morris, 2006). Parents keep exerting their influence on children throughout development. Specifically, early adolescence represents an important time for the negotiation of autonomy-related changes in the parent-child relationship (Smetana, Campione-Barr, & Metzger, 2006).

As children become adolescents, they look for more independence from their parents and start to invest more in their relationships with peers (Paikoff & Brooks-Gunn, 1991). Thus, early adolescence represents a period of changes and challenges,

also in terms of parenting. Overall, low levels of parental supervision and positive reinforcement seem to negatively impact on youths' socio-emotional adjustment (Hoeve, Dubas, Eichelsheim, Van der Laan, Smeenk, & Gerris, 2009; Menting et al., 2016). However, there is evidence that parental practices and their effect on children vary as a function of age.

Mounting evidence points to the growing importance of parental monitoring and supervision in the transition to adolescence, whereas the salience of positive reinforcement and praise in education tends to decrease due to children's gains in independence and to the increasing amount of time spent with peers outside the family environment (Menting et al., 2016; Pardini, Fite, & Burke, 2008). Parental supervision and reinforcement are two among the most common targets of parenting trainings, and a better understanding of their impact on socio-emotional adjustment during early adolescence may inform the implementation of age-effective interventions with families (Chu, Bullen, Farruggia, Dittman, & Sanders, 2015; Dishion & McMahon, 1998).

In addition, different parental practices may serve different functions and assume different meanings across cultures. Indeed, a common parental goal across cultures is raising children as successful members of society, but the strategies and practices parents use to attain this goal differ across countries (Lansford et al., 2016). As regards immigrant youth, both parents and children are exposed to two different sets of cultural values and norms. The cultural distance between mainstream and heritage cultures impacts on parenting practices, and in Western countries such as Italy such a distance is maximized especially in Chinese migrant families (Chen, Main, Zhou, Bunge, Lau, & Chu, 2015; Kim, Wang, Shen, & Hou, 2015).

In Western societies, authoritative parental practices are linked to youths' best socio-emotional outcomes, whereas indulgent and authoritarian parenting to worse

outcomes (Lamborn, Mounts, Steinberg, & Dornbusch, 1991). However, these findings cannot be easily generalized to Chinese immigrant children and adolescents, since Western traditional parenting styles do not capture the culture-related features of Chinese parental practices (Kim et al., 2015). Chinese parents, in line with Confucian values, typically encourage psychological discipline, self-control and behavioral standards, rather than the emotional expressiveness usually emphasized by mainstream parents (Pedone, 2013; Wang, 2001).

1.3.4. Bridging cultures and contexts: the role of executive functioning

In the previous paragraphs, evidence linking self-construals, acculturation orientations, discriminatory experiences, and parenting each with socio-emotional adjustment in immigrant early adolescents was provided. Scholars agree that all these factors play a considerable role in immigrant early adolescents' socio-emotional adaptation. However, less is known about the potential risk and protective factors which may intervene to moderate these links. How can we build a bridge between cultural, contextual and personal variables in links with socio-emotional adjustment? EFs represent a potential answer to this question.

Indeed, executive functioning has been theorized as a possible factor explaining variation in socio-emotional outcomes. Executive functions (EFs) are adaptive, goal-directed behaviors that enable individuals to override more automatic or established thoughts and responses (Mesulam, 2002). EFs comprise a constellation of processes mainly supported by the prefrontal region of the brain. Researchers have proposed several different theoretical models to describe executive functioning, which has been conceptualized as a unitary construct, as multiple components or as a unitary construct with dissociable components (Hofmann, Schmeichel, & Baddeley, 2012). One of the

most relevant theoretical models in developmental research postulates the co-existence of “cold” and “hot” components of EFs (Zelazo & Carlson, 2012).

The “cold” components of EFs include working memory, inhibitory control, and cognitive flexibility (Hofmann et al., 2012; Miyake, Friedman, Emerson, Witzki, Howerter, & Wager, 2000), whereas the “hot” components concern regulation of one's impulses and emotion-based decision-making (Bechara, Damasio, Damasio, & Anderson, 1994; Zelazo & Mueller, 2002). Working memory represents the capacity to hold information in memory and either manipulate that information or update it on the basis of ongoing inputs. Inhibitory control refers to the capacity to withhold a predisposed response, often in favour of a non-predisposed one. As regards cognitive flexibility, it deals with the capacity to alternate between sets of stimulus-response rules. Each task can be measured by means of questionnaires and performance tasks. Different experimental tasks assess each of the three basic EFs. Operation span and n-back tasks provide measures of working memory; Stroop tasks or stop-signal tasks are commonly used to assess inhibitory control; tasks such as the Dimensional Change Card Sort task (DCCS) allow to measure the ability to mentally switch between two or more simple task sets (Hofmann et al., 2012).

The cold components of EFs are generally measured by means of behavioural and/or computer based tasks which rely on “cold” abstract and decontextualized problems. Conversely, hot EFs involve all three subcomponents, but in relation to problem-solving situations mirroring common everyday experiences, and directly involving regulation of emotions (e.g., tasks which involve rewards or losses). However, the distinction between hot and cold components of EFs is not so straightforward. Since hot and cool EFs are simultaneously involved in most-problem-solving situations, scholars suggest they can be seen as two ends of a continuum in a

single coordinated system, rather than two different systems (Zhou, Chen, & Main, 2012; Zelazo & Cunningham, 2007).

EFs have been assessed mostly in young children and toddlers, but mounting evidence suggests that they keep developing through adolescence, making this phase particularly interesting and innovative for research (King, Lengua, & Monahan, 2013; Prencipe, Kesek, Cohen, Lamm, Lewis, & Zelazo, 2011; Zelazo & Carlson, 2012). As children become adolescents, they enter the formal operational stage of cognitive development and start to develop new neurocognitive competences that allow them to assume different perspectives on the social environment (Piaget, 1970). Notably, early adolescence is a time of changes in brain development and of renewed brain plasticity, characterized by high risk propensity and reward responsiveness (Crone & Dahl, 2012; Dishion, 2016).

Overall, as reported in recent research on the topic, EFs overlap with the concept of self-regulation (Zhou, Chen et al., 2012) and contribute to self-regulatory outcomes in theoretically meaningful ways (i.e., as predictor, process moderator, and as process mediator). Better EF capacities have been widely related to better academic achievement and fewer externalizing difficulties in children, but there is also preliminary evidence showing how executive functioning is also associated with social and emotional self-regulation (Hofmann et al., 2012), which, in turn, is linked to social competence, empathy, and prosocial behavior; in contrast, less effective emotion regulation strategies are associated with more internalizing problems (Eisenberg, Spinrad, & Eggum, 2010).

EFs have been recently theorized as possible moderating variables in links between contextual aspects and personal variables (Chen et al., 2015; Hoffman et al., 2012; King et al., 2013; Zhou, Chen et al., 2012). Consistent with a risk and resilience

perspective, there is preliminary evidence suggesting that EFs can interact with situational and contextual aspects, such as environmental and social stressors or interracial interaction or negative parenting (Chen et al., 2015; Hofmann et al., 2012). For example, one could think that the negative effect of environmental stressors on psychological adjustment may be reduced for individuals with a good level of executive functioning. Conversely, low levels of executive functioning may further compromise the negative impact of contextual stressors on socio-emotional adjustment (moderating effects).

Furthermore, differences in everyday experiences and in how EFs are socialized across youths from different ethnic and migration backgrounds may impact on the effects of specific individual cognitive aspects on psychological functioning (Fuligni & Tsai, 2015; Ward & Geeraert, 2016). There is evidence linking better executive functioning to bilingualism (Bialystok, 2016). However, findings are inconclusive, and mostly focused on American children from middle-class families, thus failing to address how ethnicity or immigrant status may affect EFs (Rosselli, Ardila, Lalwani, & Vélez-Uribe, 2016). Most likely, ethnic background may influence the strength of the association between EFs and contextual variables in predicting socio-emotional outcomes, rather than the direction of the relationship (Zhou, Tao et al., 2012). Yet, the potential moderating role of EFs in the relationship between cultural and contextual factors and socio-emotional adjustment among immigrant and national early adolescents remains virtually unexplored.

1.4. The present research project

To overcome the aforementioned limitations, the current project takes a multidisciplinary, multimethod approach to better understand the complex processes

involved in migrant youths' psychological adaptation. The main purpose of our research is to detect potential protective and risk factors for socio-emotional adjustment among immigrant and non-immigrant preadolescents. By focusing on early adolescents with different ethnic backgrounds (i.e., Chinese, Moroccan, Romanian immigrants and national non-immigrants) we aimed to investigate culturally common and unique protective and risk factors for socio-emotional adjustment. To reduce method bias, we used a combination of parent and self-reports and performance tasks. Unravelling under what conditions contextual and personal variables contribute to both negative (i.e., emotional and behavioral difficulties) and positive adjustment (i.e., prosocial behavior and social competence) in migrant youth from different ethnic backgrounds would allow the design of culturally sensitive intervention and prevention programs.

Specifically, we conducted three separate studies to investigate how cold EFs (i.e., working memory, inhibitory control, cognitive flexibility) and hot EFs (i.e., impulse control) interact with different family/social (i.e., parenting, discrimination) and cultural variables (i.e., self-construals, acculturation orientations) to explain socio-emotional adjustment across immigrant (e.g., Chinese, Moroccan, Romanian) and non-immigrant Italian preadolescents. From a methodological perspective, EFs are conceptualized as moderating variables following an integrative risk and resilience framework (Masten & Coatsworth, 1998; Motti-Stefanidi et al., 2012). This framework suggests that the magnitude of the association between stressful events and adjustment depends upon certain circumstances. On this basis, the interest on moderators representing potential promotive or vulnerability factors (e.g., self-regulatory processes, problem-solving skills, personality differences) may offer important clues about successful and unsuccessful pathways through adolescence (Masten, 2004).

Given that training of EFs holds significant potential for improving poor

behavioral and emotional self-regulation (Hofmann et al., 2012), findings from this study will be paramount to inform intervention programs in multicultural contexts, helping to tailor treatments able to meet the needs of ethnically diverse youth (Garner, Mahatmya, Brown, & Vesely, 2014).

Our work was guided by the following research questions:

1. How do cold EFs moderate the expected links between independent and interdependent self-construals and social adjustment? Does preadolescents' ethnic background influence such relationships?
2. Is the association between perceived discrimination and early adolescent immigrants' problem behavior moderated by acculturation orientations and impulse control? Do these associations vary according to ethnicity?
3. How do cold EFs moderate the expected link between parental practices and emotional and behavioral problems? Does early adolescents' ethnic background influence such relationships?

1.5. Overview of chapters

Before reporting on the empirical studies, a general introduction to socio-demographic and historical aspects of immigration in Italy is provided in Chapter 2.

In Study 1 (Chapter 3), the moderating role of cold EFs (i.e. working memory, inhibitory control, cognitive flexibility) is investigated in the relationship between independent and interdependent self-construals and social adjustment among Moroccan immigrant, Romanian immigrant, and national non-immigrant early adolescents. In this study, the focus is on positive social outcomes and on how the cultural self interacts with cognitive variables to explain social behavior.

Study 2 (Chapter 4) focuses specifically on migration-related variables (e.g.,

discrimination, acculturation), drawing on the same sample as in Study 1, but involving only Moroccan and Romanian immigrants. Precisely, we were interested in testing the moderating role of both acculturation orientations and impulse control (hot EF) in the relationship between perceived ethnic discrimination and problem behaviors among Moroccan and Romanian immigrant early adolescents.

In Study 3 (Chapter 5), we investigate the impact of both positive and negative parenting practices on emotional and behavioral problems in Chinese immigrant and national non-immigrant early adolescents, postulating moderation by cold EFs.

Finally, in Chapter 6 the main findings of the aforementioned studies are integrated and discussed. In addition, limitations, suggestions for further research, and theoretical and practical implications are addressed.

The data for the various studies were collected in one large data-collection effort that encompassed the total body of participants. This thesis is composed of three independent empirical studies, and a certain degree of overlap between the chapters is therefore inevitable.

CHAPTER 2

Socio - demographic aspects of immigration: the Italian case

This chapter provides an overview of immigration phenomena in the Italian context, encompassing historical, cultural, social, and demographic perspectives. First, the historical background of immigration in Italy is briefly singled out. Second, the presence and characteristics of immigration in Italy are illustrated, with a specific focus on children and adolescents. Finally, Moroccan, Romanian, and Chinese migrant fluxes in Italy are described in more detail, as to shed light on the specific and unique socio-cultural contexts of each ethnic community. These ethnicities represent three of the largest ethnic groups in Italy and are the target populations of the present research project. Overall, the aim of the chapter is to provide the reader with some basic knowledge on the socio-cultural context of majority and minority groups in Italy, to enable a deeper understanding of the issues involved in the study of immigrant children from different cultural backgrounds in this recently receiving society.

2.1. Contextualizing immigration in Italy: a historical perspective

Immigration is a far-reaching, global phenomenon and represents a crucial topic for political and social agendas across continents. In recent years, migration fluxes to Italy and to other countries of the European Union (EU) have significantly increased due to a complex combination of political, social, and economic factors.

Immigration in Italy has a long history: migrants have been part of the Italian society since the very beginning. Italy has always had a presence up to 1 or 2% of

foreign citizens. However, until the 1960s and 1970s Italy was mainly a country of emigration, since in those years emigrants outnumbered immigrants, mirroring the European scenario (Colombo & Sciortino, 2004). Europe shifted increasingly from being an area of emigration, where people were leaving in search of a better quality of life, to an area of immigration, with a peak after the Second World War. In the 1950s, especially in the United Kingdom, France and Germany, an increasing need of workers was observed due to the post-war economic boom (Colombo & Sciortino, 2004). Such workers started to be recruited mostly from Eastern Europe and from colonies and ex-colonies, and later on from developing countries. A few years later, the same phenomena took place in Mediterranean countries like Italy because of stricter immigration policies adopted in the European top receiving countries, and of reasons specifically linked to some attractive characteristics of the Italian society (e.g., economic growth, welfare system, importance of small and medium businesses) (Paparusso, Fokkema, & Ambrosetti, 2016). This is how Italy turned into a country of immigration at the beginning of the 1970s, despite the restrictive and rigid policies always adopted by Italian authorities.

Immigrant fluxes changed considerably over time. In the 1960s immigrants came typically from former colonies or other European countries, but starting from the 1970s there was a shift towards other immigration fluxes: from Tunisia to Sicily, from the Balkans to Friuli-Venezia Giulia, from Libya and Eritrea to Lazio and Lombardy, just to mention a few. The heterogeneous nature of Italian immigration became clear in those years, but other changes were in progress. In the 1980s, both Moroccan and Chinese immigrations started to grow, being among the top ten nationalities in Italy in the 1990s when Albanian refugees started to arrive consistently, escaping their collapsing political system. It is informative that the top ten nationalities in Italy represented 13% of

foreigners in 1970, with the percentage growing to 40% in 1990, and reaching 51% in 2002 (Colombo & Sciortino, 2004). These numbers shed light on one of the aspects which will always define Italian immigration, namely the presence of heterogeneous and mixed migration fluxes.

After tracing a brief history of immigration, it is important to explore the reasons why immigrants came to Italy in the first place. Besides the small number of immigrants coming as students or refugees, until the 1990s one of the main reasons which led migrants to settle down in Italy was the possibility to find a job or to start a business, whereas starting from the 1990s most migrants came to join a relative or partner after he or she managed to settle down in the host country (Colombo & Sciortino, 2004). Hence, immigrant reunited families started to grow in number, together with the presence of immigrant women and children.

Reconstructing the history of immigration in Italy is a challenging task, due to a lack of information linked to the government's refusal to recognize, accept, and actively discipline the growing immigration fluxes. Across the years and the many changes immigration went through in Italy, the presence of undocumented and irregular migrants has always been sizeable. The Italian authorities have kept dealing with immigration as a recent and unknown emergency, not inscribing such phenomenon as a considerable and structural part of the current Italian society (Paparusso et al., 2016). All political measures failed to address the issues linked to immigration entry policies on one side, and those linked to the integration and regularization of the immigrant presence on the other side, often confounding two different aspects of the same phenomenon. Indeed, immigrants in Italy keep facing many challenges due to vaguely defined and long bureaucratic issues and to the uncertainty of their regular status, which contributed to the growth and persistence of a large number of illegal and

undocumented migrants on the national territory.

Even in the last decades, in an effort to increase sensitivity to documented and undocumented migration in line with European guidelines, the decisions taken by the government did not manage to improve migrants' situation and quality of life. Mutual agreements with some countries granting annual quotas for immigrants and the introduction of the sponsorship scheme in the past decades did not solve the existing problems, and the government was forced to promote frequent regularization procedures, mirroring a "Mediterranean model of immigration" (Doomernik & Bruquetas-Callejo, 2016).

The well-known Bossi-Fini Law ('Legge 89/02') in 2002 followed the raise in Italy of the Lega Nord, an Italian political party openly against immigrant settlements. Such a law made immigration policies even stricter and was highly criticized as xenophobic. This law was held responsible for perpetuating immigrants' unstable quality of life. Its effect was to further increase the number of undocumented and irregular migrants and was followed by the largest Italian regularization program (Colombo & Sciortino, 2004).

It is striking that in all these years and across different policies and parties, almost half of the Italian immigrant population managed to legalize their position by means of one of the many amnesties promoted by the government throughout the years (Carafagna, 2002). These regularization programs are probably the only constant of all Italian migration policies (Ciafaloni, 2004).

However, despite the Italian uncoherent and restrictive way of dealing with migration policies, the truth is that Italy needs its migrants, since specific sectors of the Italian economy have a high demand of low qualified workers, and immigrants' employment is crucial in labour market niches such as agriculture or household

activities, where there is no competition with the Italian population (Colombo & Sciortino, 2004). All these aspects highlight the specific characteristics of the hosting Italian society, depicted as inconsistent, unprepared and naïve in managing migration fluxes and integration policies, and distinguishing it from immigration to other European and American countries.

Italian public opinion, initially tolerant towards immigrants, has become more overtly hostile, helped by the reported lack of clarity of immigration policies and by the inefficiency of the public administration (Kosic, Mannetti, & Sam, 2005). In addition, the recent and rapidly growing presence of immigrants may have affected Italians' attitude towards them. According to Eurobarometer (2015), ethnic discrimination is the most common form of discrimination in Italy (73%), and has increased since 2012, in line with overall trends in the European Union (64%).

Overall, mainstream Italians do not report a consistent preference for a specific acculturation strategy of immigrants, but seem to prefer assimilative policies towards immigrants, especially when they report high levels of prejudice (Kosic et al., 2005). However, according to national education guidelines, Italy has chosen the total integration of everyone into the school system and intercultural education as the main cultural aim (Ministry of Education, 1994).

At present, Italian citizenship can be obtained on the basis of Italian ancestors (*ius sanguinis*). For the naturalization of non-EU citizens, the legal residence in Italy for 10 years is required. Children born in Italy to non-Italian parents, who are residents, can obtain citizenship if they have been living in the country until they reach legal age. In this case, they have to give a statement declaring their desire to obtain Italian citizenship before they turn 19 (Ministry of Foreign Affairs, 1992).

2.2. The present situation of immigrant youth in Italy

To better understand the growing importance of migration phenomena in Italy, a closer look at the cultural, socio-demographic, and territorial distributions and characteristics of the legal presence of foreign residents in Italy is fundamental.

As can be easily inferred from this brief historical portrait, Italy is the country of destination of many different migrations, and this becomes evident when looking at the composition and distribution of the registered presence of foreign residents on the national territory. Despite acknowledging the existence of an important part of undocumented and illegal migrants in Italy and of a growing number of refugees, in this dissertation we focus only on legal labor immigrants, since holding a legal status was one crucial condition for participating in this research project.

According to the Italian National Institute of Statistics, in 2015 there were 5.014.437 foreign residents legally residing in Italy, representing 8.2% of the overall Italian population (Istat, 2016). Such an incidence is higher than the European average (6.7% of the entire population). The registered migrant presence in Italy showed a slow and steady growth in the last years (Figure 2.1), and it is not surprising that, according to Eurostat (2016), Italy currently represents one of the top receiving countries in Europe in terms of immigration, ranking third after Germany and the UK.

Romanians are the largest migrant group in Italy (1,131,839), followed by Albanians (490,483), Moroccans (449,058), and Chinese (265,820). Overall, immigrants in Italy come from around 200 different countries, even if the majority originates from other countries of the European Union (see Figure 2.2). These data underline the heterogeneous nature of immigration in Italy, in line with what emerged from the previous paragraph. According to the latest estimates, Christian religion is the most common among migrants (2.7 millions), followed by Islam (1.6 million), whereas

other religious groups are much smaller in size.

Figure 2.1 Growth of the immigrant population in Italy from year 2002 to year 2016 (Istat, 2016)

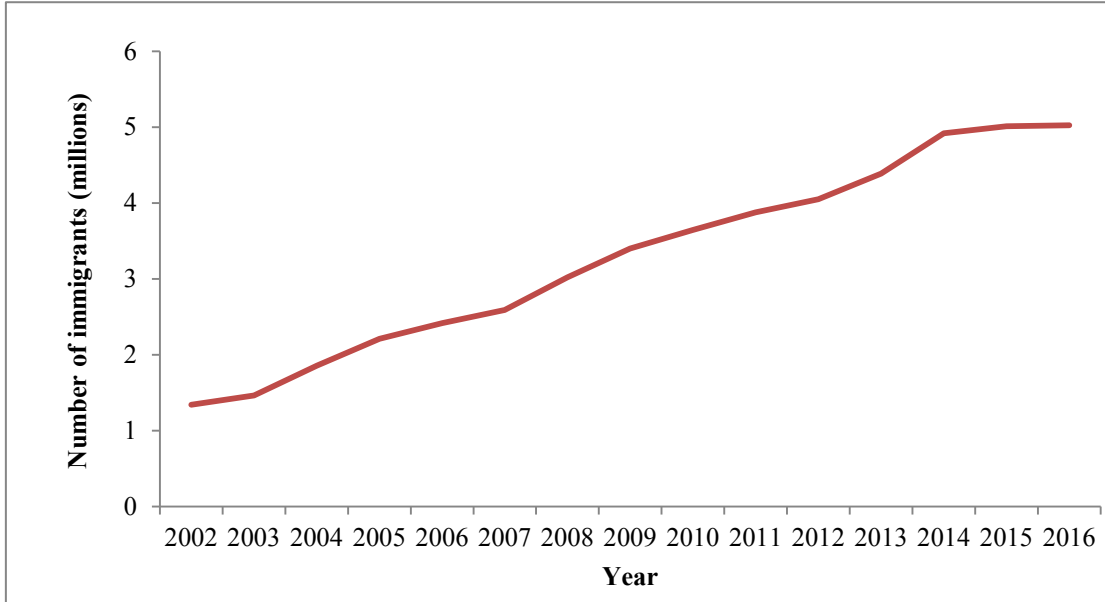
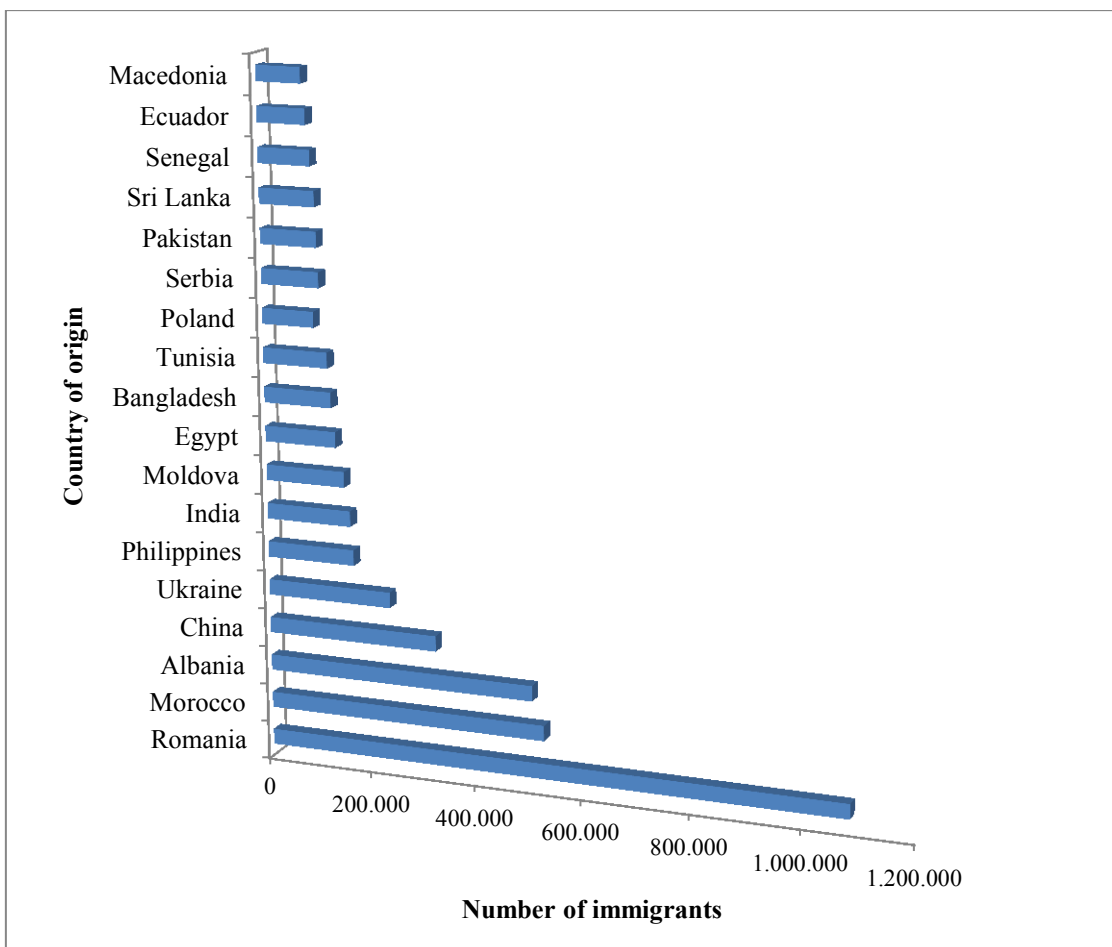
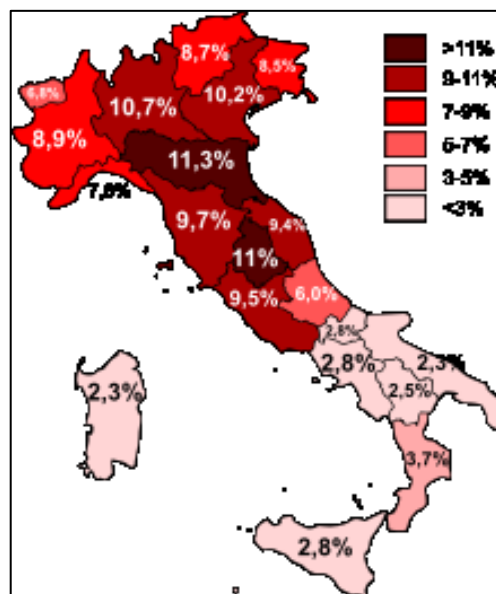


Figure 2.2 Main countries of origin of immigrant groups in Italy (Istat, 2016)



As regards the territorial distribution, immigrants are very unevenly distributed in Italy due to robust regional differences in socio-economic development between the North and the South. As a result of this North-South divide, migration fluxes shifted progressively from the Southern regions (which are close to important gates of illegal entry to the country) to Northern ones, in particular to the more economically developed and industrialized areas in the Northeast and Center, where there is a higher demand for work (D'Agostino, Regoli, Cornelio, & Berti, 2015). At present, Lombardy, Lazio, Emilia-Romagna, and Veneto are the Italian regions with the largest immigrant population, and overall the Northern regions host 59% of registered immigrants (Figure 2.3). Specifically, 10% of the total immigrant population lives in Veneto, a region in the North East of Italy where most of our data have been collected (Istat, 2016).

Figure 2.3 Immigrant population in Italy as a percentage of the regional population (Istat, 2016).



In terms of age, the Italian immigrant population is extremely young, with a mean age of 31 years as opposed to the mean age of 44 of the Italian non-immigrant population. Speaking of age, it is important to notice that the younger component of

immigration is growing in the national picture of migrants, deserving careful attention. Children born in Italy from both foreign born parents represent 15% of total births (75,067), and foreign youth enrolled in schools keeps growing, representing in 2015 9.2% of the total children enrolled. More and more children (22%) and women (53%) can be found in the immigrant population, confirming the increase of immigrant families on the national territory (Idos, 2015). As can be easily inferred, immigrants represent an important source of population growth and of overall productivity of the society (D'Agostino et al., 2015).

The estimates available from the Italian Ministry of Education (Miur, 2015) show that immigrant children represent 10% of children enrolled in lower secondary school, which targets the 11-13 age range on which our study is focused. Among them, 44% are second generation immigrants (i.e., immigrants born in Italy from at least one foreign-born parent, see Figure 2.4). Overall, second generations in schools have shown a 7% growth compared to the previous academic year, representing 52% of total foreign students. These estimates underline how the number of minor immigrants has increased significantly since 2000, around three times the rate of the growth of the Italian-born population.

The territorial distribution of immigrant minors varies according to regional areas, mirroring the higher concentration of immigrants in schools in the northern and central regions of Italy (14% and 11% on the total number of students, respectively), and a much lower incidence in the South (3%). The highest incidence of immigrant students can be found in the north-east of Italy, where one child out of every five children is of immigrant origin. The most represented nationalities in Italian schools are Romanians, Moroccans, Albanians and Chinese. Interestingly, the number of native Italian students in schools is decreasing (-0,6% in 2015), whereas the number of foreign students keeps

growing (+1,4% in 2015).

In the present thesis the focus is on Moroccan, Romanian and Chinese immigrants in Italy (see Figure 2.5 for a representation of the composition of these migrant groups).

Figure 2.4 Distribution of immigrant minors in Italian schools (Istat, 2016).

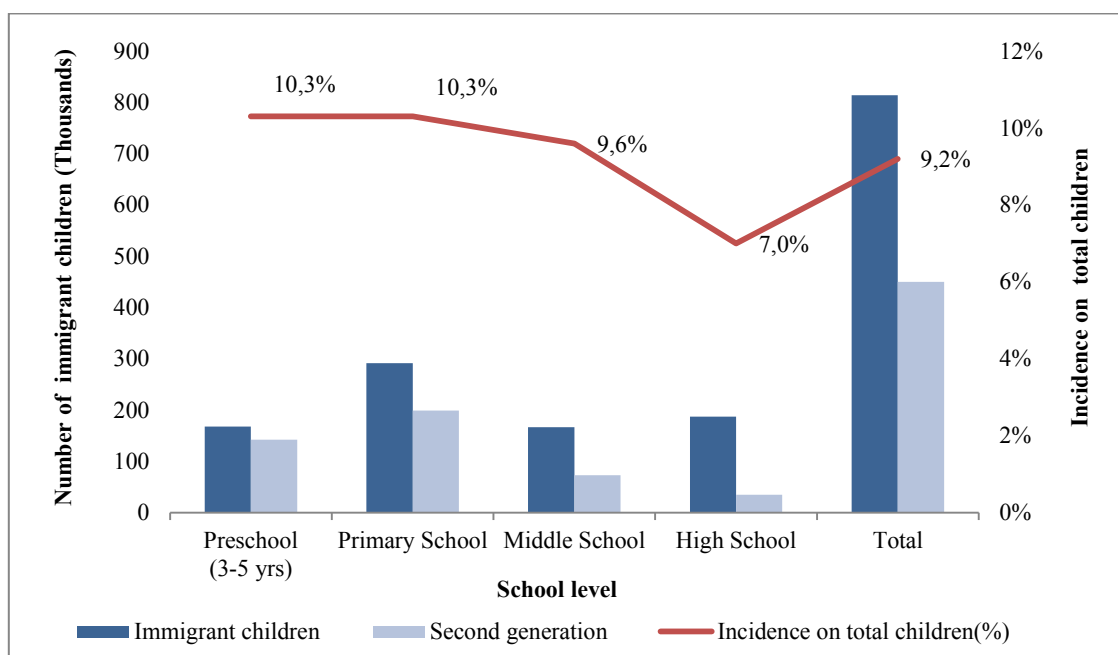
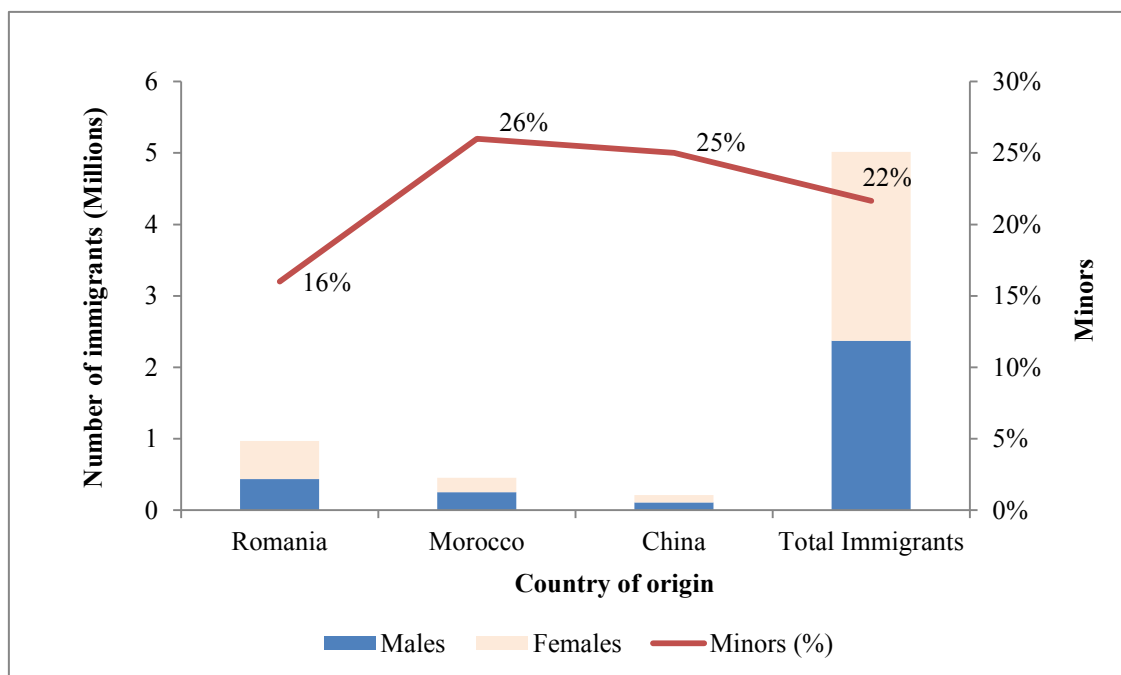


Figure 2.5 Composition of Romanian, Moroccan and Chinese migrant population in Italy (gender distribution and percentage of minors; Istat, 2016)



These immigrant communities have been chosen since they represent three of the largest immigrant groups in Italy as well as in Europe. Despite their noteworthy presence in the European scenario, research on their socio-emotional adaptation is still scant. In addition, each of these ethnic groups presents some relevant differences in terms of religion, cultural distance from the mainstream Italian society, language and visibility in terms of somatic traits which could impact differently on their adaptation.

2.2.1. The Moroccan community

Morocco is a North African country with a lower-middle income economy (<http://data.worldbank.org/about/country-and-lending-groups>) and it is a constitutional monarchy with an elected parliament. It is considered a collectivistic and Muslim society, where commitment to the member “group” in terms of family, extended family, religious community and society more broadly, is highly valued (Hofstede, 2001). The king is both the secular political leader and the "Commander of the Faithful" as a direct descendant of the Prophet Mohammed.

Moroccan immigration to Italy dates back to more than 30 years and is still quantitatively important, since Moroccans are the largest ethnic minority in Italy after Romanians and Albanians. However, Moroccan immigration is older than both the Romanian and Albanian ones. This is why the Moroccan immigrant has been the stereotype of immigrants in Italy since the very first migrant fluxes: from around a thousand regular Moroccan migrants in the 1980s, this number grew to 80 thousands in the 1990s to reach 450 thousands in 2015 (Colombo & Sciortino, 2004; Istat, 2016). It started as labor migration, and continues today predominantly by means of family reunification channels, with a growing number of immigrant women (46%) (Heering, van der Erf, & van Wissen, 2004).

The stabilization of Moroccan migration is confirmed by high fertility rates and by a growing number of minors (Di Bartolomeo, Gabrielli, & Strozza, 2015), who represent 26% of the Moroccan immigrant population (Istat, 2016). Moroccans are therefore a well-established community in Italy, and show high levels of integration in the labor market, being predominantly employed as workers in small industries and service industries. Males are usually employed, while females are expected to take care of the household and the family and typically do not look for a job. These aspects mirror Moroccan masculine culture, where men are responsible for economic and material success, whereas women are expected to serve and care for the family and for children (Arends-Toth & van de Vijver, 2009). The father is considered the absolute chief and exerts his authority on his wife and children (Sadiqi, 2010). Children as well are expected to help the family by contributing to the household and by taking care of younger siblings (Heering et al., 2004).

Overall, Moroccan immigrants tend to be less qualified and less educated than other migrant groups in Italy (Di Bartolomeo et al., 2015). The massive immigration of Moroccans in Europe in the 1960s and 1970s was due to national labor shortages in European countries, as well as to Moroccan authorities' strategies for dealing with unemployment and benefitting from migrants' remittances (Heering et al., 2004). The Moroccan government adopted a consistent policy with regard to emigration, promoting it for the country's benefit. Integration in the receiving country was highly discouraged, and immigrants were invited to maintain links with their country of origin both economically by means of remittances, and in terms of culture and religion. In this sense, the Moroccan government itself keeps investing in religious and cultural instruments abroad as to revive and safeguard Moroccan and Muslim cultures, for instance by organizing Arab language classes or by sending imams abroad to support

mosques and religious associations for migrants' descendants (Di Bartolomeo et al., 2015; Fargues, 2004).

There is some evidence that geographic proximity with the country of origin and the strong cultural norms about consanguineous marriages and family ties play a role in complicating the integration and identification of the Moroccan immigrant group with the Italian majority group (Giuliani & Tagliabue, 2015). Moroccan and religious identity are perceived by Moroccan immigrants as fundamental aspects of their personal identity (Caneva & Pozzi, 2014). Regalia and Giuliani (2012) found that Muslim immigrants in Italy experience a complex transition, with feelings of solitude and social isolation, high perceived discrimination and strong religious identification. Indeed, in the post 9/11 era, characterized by the Charlie Hebdo events, by the terrorist attacks in Paris in 2015 and by the recent attacks in Brussels in 2016, Muslims are more at risk of religious and societal discrimination, being perceived as a potential threat to society (Adida, Laitin, & Valfort, 2010; Ambrosini, 2013; Eurostat, 2016). At present, Muslims are the most discriminated religious group in the European Union (Eurobarometer, 2015). The present situation of Muslims worldwide may represent a significant barrier against integration that needs to be mentioned when trying to draw a picture of Moroccan immigration in this specific historical moment.

However, in Italy there is some preliminary evidence suggesting that Moroccans, especially adolescent girls, tend to adhere to the Western model of emancipated and independent women and their attachment to Moroccan culture and Muslim religion is more limited (Giuliani & Tagliabue, 2015). Nonetheless, research on this particular ethnic group in Italy is still lacking (Salih, 2009).

2.2.2. The Romanian community

Romania is a European low-middle income economy (<http://data.worldbank.org/about/country-and-lending-groups>) and a member of the European Union. Like Morocco, it is a collectivistic society where family ties and social bonds are of crucial importance. It is a semi-presidential republic, and even if Romania has no state religion, most Romanians identify as orthodox Christians.

At present, Italy hosts the largest community of Romanians abroad, and Romanian immigrants are the first national group in number in Italy, with the highest rates of settlement and integration (Colombo, 2013; Istat, 2016). In Padova, one of the main cities involved in our data collection, 30% of immigrants have a Romanian background (Colombo, 2013). In addition, Romanian youth are the largest group of immigrants in Italian schools, which underlines a general stabilization of Romanian immigration and a shift towards a more family-oriented immigration (Colombo, 2013).

Most Romanian immigrants in Italy come from several regions of Transylvania in North-western Romania (Ban, 2012). Linguistic and cultural similarities between Romania and Italy, as well as geographical proximity and an easy access to underground and illicit labor markets, facilitated the choice of Italy as a primary destination for many Romanians (Uccellini, 2010). Another peculiar aspect of Romanian immigration is the possibility to rely on kinship migratory chains for their settlement (Weber, 2004). These socio-cultural proximity aspects and the availability of networks of social support are important resources that played a role in facilitating the integration of Romanians in the Italian culture.

Most Romanians emigrate because they are underpaid in their homeland taking into account their educational level, and therefore look for higher earnings and better opportunities for their children abroad. This often translates in reducing the education-

income gap on the one hand, but leads to the creation of an education-occupation gap on the other hand, with highly educated immigrants taking unskilled jobs (Alexandru, 2007). In Italy, Romanians have an average income of 1,030 euros per month and are employed predominantly in the sectors of construction, cleaning services, trade, industry, and social care (Popescu, 2008). Unlike Moroccan immigration, Romanian immigration has never been dominated by men, and Romanian immigrant women represent 57% of the Romanian population in Italy. Romanian immigrant women come to Italy looking for a job typically in hospitals, domestic work or elderly care (Stan, 2005).

From a historical perspective, Romanian migration to Italy is a relatively recent phenomenon compared to Moroccan immigration. It started in the early 1990s after the overthrow of Ceausescu's regime in 1989, with many Romanians being finally able to escape from the communist regime and economic crisis. After 2000, the Romanian flow into Italy was impressive. In that year the policy requiring a visa for travelling to other European countries was abolished, and almost 60% of all Romanian migrants chose Italy or Spain as preferred destinations (Popescu, 2008). Romanians entered Italy mostly as irregular immigrants or as tourists, and became the largest group of regularized immigrants who benefited from the various Italian regularization programs (Ban, 2009). In 2007 with the entry of Romania in the European Union, there was an 83% growth in the number of regular Romanian migrants in Italy (Ban, 2012). Since then, Romanians remained the largest ethnic minority in Italy.

Romanians living in Italy are generally more satisfied with their daily lives than their counterparts living in Romania. They are proud of being Romanian, but also report a desire to highlight the social and cultural distance from other immigrant communities, feeling closer to native Italians than to other migrant groups (Colombo, 2013). Indeed,

the Romanian culture shares more similarities with the Italian mainstream culture compared to other non-European minorities. Both Romanian and Italian cultural values emphasize strong family ties and mutual intergenerational support (Castiglioni, Haragus, Faludi, & Haragus, 2016; Ratliff, Rossano, & Panico, 2012). A typical Romanian family is based on equality of spouses, and women participate economically in the family management. In addition, the Italian and Romanian languages are similar, and both Romanian immigrant children and parents highlight the importance of learning the Italian language and have skills in this language, thus reducing the parent-child acculturation gap (Castiglioni et al., 2016).

However, Romanian parents tend to strongly invest on their children's school achievement and show a more rigid family structure compared to Italian families, with an asymmetric and patriarchal organization, where children are expected to respect parental authority and decisions, often creating parent-child relational issues with the entry of children in adolescence (Colombo, 2013; Moscardino, Bertelli, & Altoè, 2011; Robila, 2009). Specifically, education is highly valued by Romanian immigrant parents as a means to enhance social and financial security (Moscardino et al., 2011). Despite the cultural affinity between the Italian and the Romanian cultures, as well as the special status of Romanians as Europeans, Romanian citizens are often victims of discrimination in Italy, 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).

2.2.3. The Chinese community

China is an Asian country with an upper-middle income economy (<http://data.worldbank.org/about/country-and-lending-groups>) and with a dominant

collectivistic ideology (Hofstede, 2001). It is a sovereign state, governed by the Communist Party of China. The government is officially atheist, but the Chinese collectivist culture has its roots in Confucianism, a philosophy which sees the individual as responsible for collective good. Hence, Chinese people highly value the maintenance of relationships and social order, whereas the pursuit of personal needs and rights becomes secondary (Voronov & Singer, 2002). Human relationships are conceived in terms of hierarchical patterns linking the individual, the family, and the state, and have to conform to the existing orderly world (Lai, 2008).

Chinese immigrants represent the largest Asian migrant group in Italy and the fourth largest ethnic minority on the Italian soil after Romanians, Albanians, and Moroccans (Istat, 2016). Moreover, they represent the largest Chinese community in Europe (Idos, 2015). The Chinese community in Italy reports the lowest rate of unemployment among all groups of migrants, and there seems to be an advantage in terms of income for the Chinese compared to the other ethnic minority groups (Ministry of Labor and Social Policy, 2013). Interestingly, Chinese immigration in Italy has some peculiar characteristics which distinguish it from all other foreign groups.

First, a typical trait of Chinese immigration is the high homogeneity in the area of origin: around 70% of the Chinese living in Italy comes from the area of Southern Zhejiang, an eastern coastal Chinese province, and therefore shares the same cultural, economic and social backgrounds. This Chinese region is traditionally known as the “land of fish and rice”, and at present has a strong home-grown economy and represents a very attractive land for foreign investors (Skinner, Kuhn, & Joseph, 2001).

Second, Chinese immigration is a form of entrepreneurial investment, and starting and running small family businesses seems to be the ultimate goal of the migratory project, in line with the situation in their region of origin. In fact, the percentage of

Chinese self-employed workers is the highest among all ethnic groups in Italy. Most of these family businesses were historically characterized by the presence of Chinese employers and employees, mostly in the sectors of manufacturing activities, trade, and catering-related businesses. This persistent self-employment within the ethnic economy often resulted in a delay in creating solid links with the host society (Pedone, 2013). For these reasons, many first-generation immigrants who did not attend Italian public schools speak only Chinese, but require perfect Italian and Chinese from their second-generation children along with success in Italian schools (Ceccagno 2004; Pedone, 2006). At the same time, a strong connection with the area of origin is maintained thanks to Chinese media and to frequent trips to China, whenever possible (Pedone, 2013).

Third, Chinese migrants show a tendency to reconstitute the family unit in Italy (Campani, Carchedi, & Tassinari, 1994) and this aspect contributes to the equal balance between the number of both genders (49% women) (Istat, 2016). At present, 5% of foreign students in Italian schools have a Chinese background, and Chinese youngsters are the fourth largest migrant group in Italian schools (Miur, 2015).

Finally, Chinese migrant fluxes to Italy are characterized by frequent transfers from one city to another due to entrepreneurial activities, not only in Italy, but more broadly all over Europe (Pedone, 2013).

Moving on to the historical background, the first group of Chinese migrants arrived in Italy in the 1920s, after leaving other European countries as a consequence of the economic depression of those years. Hence, the Chinese migration flow in Italy has lasted now almost a century (Pedone, 2013). With time, the first migrants were joined by their relatives and in this way the first ethnic businesses started. Chinese immigrants grew significantly in number in the 1980s, along with the development of their areas of

origin in China. The latter created a huge divide between those Chinese families who could take advantage of the economic growth, and those who could not survive competition and preferred to emigrate (Pedone, 2013).

Italy was chosen as a destination because of the frequent amnesties offered to migrants, which could help obtain a residence permit. It becomes clear that Chinese immigrants did not leave China because of unfavorable political conditions or poverty in their home country, but in search for better opportunities. Moreover, all Chinese migrants could benefit in Italy from the so called “Chinese migration chain”, which refers to the habit of being invited by other Chinese entrepreneurs to come to Italy. Hence, Chinese migrants arrived in Italy with a job, food, and lodging since the very first day, which could explain the low unemployment rates among this group. Since the 1980s, Chinese migration flows to Italy kept growing and began to slow down only in 2000, due to the Italian economic crisis (Di Corpo, 2008). In those years, China entered the World Trade Organization (WTO) and witnessed a florid economic development for the export. Hence, many Chinese entrepreneurs in Italy preferred to switch from manufacturing to retail or import-export (Pedone, 2013).

Nowadays, Chinese immigrants’ reality in Italy is changing, and more and more Chinese ambitious entrepreneurs prefer other destinations. Apparently, Chinese migrants who remain in Italy despite the economic crisis are slowly modifying their priorities, valuing freedom and a better quality of life over wealth (Berti, Pedone, & Valzania, 2013).

As regards Chinese immigrant youth in Italy, research is still scarce. However, there is some evidence that first generation Chinese adolescents in Italy, despite acculturation and language barriers, report better psychological adjustment, life satisfaction, and academic achievement compared to their native peers (Laghi, Pallini,

Baiocco, & Dimitrova, 2014). When dealing with Chinese adolescents, it is important to remember the emphasis Chinese families place on filial piety, which implies respect and reverence toward parents (Manzi, Regalia, Pelucchi, & Fincham, 2012).

Chinese immigrant children feel responsible toward their families and are socialized to be independent as not to interfere with their parents' work, but at the same time are expected to help at home and in family business. The parent-child relationship can be easily described by the notion of *guan*, which refers to aspects of control, care, and love (Pedone, 2011). Compared to their Italian peers, Chinese youngsters show more emotional detachment from their parents. Chinese parents are usually very busy at work, and it is a common practice for them to send their children back to China to attend school there, learn Chinese, and get full attention from their grandparents (Pedone, 2013). This can compromise their acquisition of the Italian language, which, in turn, could jeopardize their chances to make friends with their Italian peers: minors of Chinese origin in Italy report so far the lowest percentage of time spent with national peers among all other ethnic groups (Dalla Zuanna et al., 2009).

CHAPTER 3

Study 1: Executive functioning as a moderator of the relationship between self-construal and social adjustment: A study of immigrant and non-immigrant early adolescents

3.1. Abstract

This study investigated whether the relationship between independent and interdependent self-construal and social adjustment varied as a function of levels of executive functions (EFs) and ethnic background. Participants were 116 Moroccan immigrant, 124 Romanian immigrant, and 248 non-immigrant Italian youths aged 11-13 years (46% girls) and their parents. A combination of self and parent-report questionnaires, as well as performance tasks, was used. Regression analyses indicated that preadolescents with higher levels of interdependent self-construal were more likely to exhibit increased prosocial behavior and social competence, while no association was found for independent self-construal. In addition, EFs and ethnicity moderated these relationships. High levels of inhibitory control were found to enhance the positive relationship between interdependence and prosocial behavior for non-immigrant early adolescents, whereas the same was true in links with social competence for Moroccan immigrant adolescents. In addition, high levels of flexibility boosted the interdependence-social competence link both for Moroccan and Romanian immigrants. In contrast, their interdependent non-immigrant peers were more socially competent at low levels of flexibility. The findings underscore the importance of different components of EFs in moderating the relation between self-construal and social outcomes in early adolescence, and suggest that these effects may vary as a function of cultural background.

Keywords: self-construal, social adjustment, executive functions, early adolescents, immigration, model selection

3.2. Introduction

Early adolescence is a critical developmental stage during which the individual starts to be increasingly oriented towards social interactions with peers in the process of striving for autonomy from the family and formulating a sense of self (Baker, Grant, & Morlock, 2008; Liu & Goto, 2007; Steinberg & Monahan, 2007). This period may be especially stressful for immigrant youth, who have to face the challenges of growing up in a sociocultural environment that often has norms and expectations vastly different from those held by their parents. Given that better social abilities during adolescence have been linked to health and well-being later in life for both immigrant and non-immigrant samples (Carlo, Crockett, Wilkinson, & Beal, 2011; Davis et al., 2016), studies aiming to investigate potential correlates of positive adjustment at this developmental stage are warranted.

To date, most research on adolescents with a migration background has focused on internalizing and externalizing problems (Dimitrova, Chasiotis, & van de Vijver, 2016; Garcia-Coll & Marks, 2011), whereas much less is known about positive adjustment in preadolescent immigrants, especially in countries other than the US or Canada. This is surprising, given that scholars in the field of migration research have underlined how migrant youngsters often show advantages over their non-immigrant peers due to culturally unique protective processes (Garcia-Coll & Marks, 2011; Main, Zhou, Liew, & Lee, 2016), inviting researchers to overcome the traditional deficit perspective in favor of a more positive-oriented one (Cabrera, 2013). Given the salience of social functioning for successful development, studies concerning its individual and cultural correlates are paramount to plan effective intervention and prevention programs aimed to reduce the risk of disparities between immigrant and non-immigrant youth in

terms of psychological well-being.

The present study focuses on two distinct, but related, aspects of social adjustment which become crucial in the transition towards adolescence, namely prosocial behavior and social competence. Prosocial behaviors are voluntary actions undertaken to benefit others, such as sharing, consoling, and helping (Eisenberg, Fabes, & Spinrad, 2006). Social competence refers to the effectiveness in social interactions to achieve personal goals through the capacity to initiate and maintain positive social relationships, and is linked to a variety of social skills, such as complying with social rules and taking turns (Sette, Baumgartner, & MacKinnon, 2015). In brief, while prosociality refers to a limited set of behaviors all aimed to benefit others, social competence encompasses a broader set of social skills with the final aim of being successful, implying the need to endorse different social behaviors according to the specific situation, not necessarily to benefit others (Charlesworth, 1996; Ostrov & Guzzo, 2015).

Although previous research suggests that self-related constructs (e.g., identity, self construal) and executive function (e.g., behavioral control) are related to child and adolescent socioemotional adjustment (Liew, 2012; Smith, Walker, Fields, Brookins, & Seay, 1999), little is known about how these factors may interact to explain prosocial behavior and social competence among immigrant and non-immigrant early adolescents.

3.2.1. Independent and interdependent self-construals and social adjustment

The self has been conceptualized as the link between culture and socio-emotional adjustment (Marsella, 1985; Okazaki, 2002). As such, it may be viewed as a construct bridging the proximal and distal environments of the developing individual, as it refers to the environments in which s/he interacts with ethnic or native peers and other people,

but it is also related to personal variables. One way of understanding the self in terms of individual cultural orientation is by the concept of independent and interdependent self-construals (Markus & Kitayama, 1991), which derives from the individualism-collectivism cultural syndrome (Triandis, 1996). Self-construal refers to one's definition of the self in relation to others. The independent self is highly socialized in individualistic cultures (e. g., United States), whereas the interdependent self-construal is typical of collectivist cultures (e. g., East Asian countries). Individuals with an independent self-construal perceive themselves as unique and independent from others, whereas individuals with an interdependent self-construal perceive themselves as connected to others, and highly value group memberships, relationships, and social roles. Self-defining processes such as self-construals play a crucial role in cognition, emotion, and behavior in the context of close relationships (Cross, Hardin, & Gercek-Swing, 2010; Cross & Madson, 1997; Harter, 1998).

Previous findings suggest that having an interdependent self is linked to more attention to the social context and to more prosocial and cooperative tendencies, whereas an independent self is related to more self-interest oriented behaviors (Cross et al., 2010; Kawabata, 2016; Utz, 2004). However, existing evidence is limited by the almost exclusive focus on adults and by the traditional bipolar (independence vs interdependence) conceptualization of self-construal. Mounting evidence suggests that independent and interdependent self-construals represent a bidimensional orthogonal construct, and can thus coexist in the same individual. Furthermore, given the extensive literature showing how one's self-concept in terms of relationships is formed during early adolescence (Baker et al., 2008; Marcia, 1966), the study of self-construals in the transition to adolescence becomes particularly relevant. Yet, only few studies have examined both self-construals in preadolescent samples. Of these, most have focused on

negative outcomes (i.e., internalizing and externalizing problems). For example, Liu and Goto (2007) investigated interdependent and independent self-construals in a sample of Asian American adolescents, and found that the independent self had a protective effect in terms of mental health as opposed to the interdependent self, which in turn was a risk factor for mental health. However, only the interdependent self was positively associated to positive family functioning. Kawabata, Tseng, and Crick (2014) investigated interdependent self-construal in links with depressive symptoms in a sample of Taiwanese school-aged children, and their findings supported a positive association of interdependence with prosocial behavior, friendship intimacy, and peer acceptance. Preliminary evidence on Latino youth in the United States suggests that when both collectivistic and mainstream individualistic values are accounted for, the weak but positive association between independence and prosociality disappears in favor of its much stronger association with interdependence (Armenta, Knight, Carlo, & Jacobson, 2011). This finding is in line with the well-documented protective role of maintaining both heritage and mainstream cultural orientations for migrant youths' positive adaptation (Nguyen & Benet-Martinez, 2013).

To the best of our knowledge, however, no study investigated both independent and interdependent self-construals in links with both prosocial behavior and social competence in immigrant and non-immigrant early adolescents.

3.2.2. Executive function and ethnicity

The current study takes an interdisciplinary approach to study immigrant youth's positive adjustment. Specifically, we draw on the theoretical framework recently proposed by Motti-Stefanidi, Berry, Chrysochoou, Sam, and Phinney (2012) which integrates findings from developmental, social psychological, and acculturation

research. The authors conceive their model in terms of three interconnected levels: the individual level (e.g., self-regulation, personality), the level of interaction (e.g., relationships with peers, family practices), and the societal level (e.g., cultural beliefs, ideologies). In contexts of immigration, this model is particularly useful to understand both proximal and distal influences on psychological adaptation as it moves beyond individual factors to include characteristics of the larger sociocultural environment (Motti-Stefanidi & Masten, 2013). In this paper, we focus on executive function (EF) and ethnicity as variables located at the individual and societal levels, respectively. In separate lines of research, these variables have been shown to impact on children's social adjustment in diverse cultural settings.

Early adolescence is a crucial and overlooked stage for the investigation of EFs. EFs are adaptive, top-down brain processes governed by the prefrontal cortex region of the brain and enable individuals to override more automatic or established thoughts and responses as to implement goal-directed behaviors (Mesulam, 2002). EFs overlap with the concept of self-regulation (Zhou, Chen, & Main, 2012) and encompass three separate, but related sub-domains: working memory, inhibitory control, and cognitive flexibility (Miyake & Friedman, 2012). EFs have been assessed mostly in young children and toddlers, but increasing evidence suggests that they keep developing through adolescence, making this phase particularly interesting and innovative for research (King, Lengua, & Monahan, 2013; Prencipe, Kesek, Cohen, Lamm, Lewis, & Zelazo, 2011). EFs have been recently theorized as possible moderating mechanisms able to explain variation in psychological and socio-cultural outcomes (Hofmann, Schmeichel & Baddeley, 2012; Li-Grining, 2012), that is, better self-regulatory capacities could overall interact with other culturally relevant personal factors in explaining social and emotional outcomes. For these reasons, scholars highlight the

importance of situating minority and immigrant children's self-regulation in sociocultural context (Li-Grining, 2012).

Extensive evidence shows that children and adolescents with better self-regulatory capacities are less likely to manifest disruptive behaviors and more likely to engage in prosocial behavior and successful relationships (Farley & Kim-Spoon, 2014). However, research using behavioral measures to assess the three separate components of EFs in early adolescence is still lacking. Preliminary evidence suggests that EFs may become more differentiated over time, starting from this stage of development (Shing, Lindenberger, Diamond, Li, & Davidson, 2010).

Among EFs, inhibitory control is the most widely studied in links with social functioning especially in early childhood, when it plays a crucial role for behavior regulation in social interactions and problems with peers (Balaraman, 2003; Hughes, Dunn, & White, 1998; Hughes, White, Sharpen, & Dunn, 2000; Rhoades, Greenberg, & Domitrovich, 2009). Less is known about working memory and cognitive flexibility.

A study on a sample of adults and college students found that cognitive flexibility and working memory, but not inhibitory control, were associated with aggressive behavior (Sprague, Verona, Kalkhoff, & Kilmer, 2011). However, a single measure for both working memory and flexibility was used, making it difficult to disentangle their separate contributions. Overall, the relationship between each separate EF and social outcomes is underexplored in early adolescence, when cognitive processes mature and improve (Steinberg, 2005). Here, we propose that the effect of an interdependent orientation on social functioning is likely to vary as a function of the individual's capacity for executive processes to modulate and regulate one's self-construal and interdependent impulses. In other words, having better EF resources may be particularly salient for regulating interdependent orientations as to endorse positive social

interactions across the new and diverse social contexts to which early adolescents are increasingly exposed. Although EFs have been theorized as potential moderators in the association between personal variables and socio-emotional adjustment (Hofmann et al., 2012; Vergara-Lopez, Lopez-Vergara, & Colder, 2013), to the best of our knowledge, no study has investigated how the interplay of self-construals and components of EF among immigrant and non-immigrant early adolescents is associated with positive social outcomes.

So far, most studies dealing with either self-construals or self-regulation in links with immigrant youths' social outcomes have been conducted on Latino and Asian American populations in the US (Knight & Carlo, 2012), thus questioning the generalizability of findings to other ethnic minority groups in the European context. At present, Romanian and Moroccan immigrants represent two of the largest migrant groups in Europe, including Italy (Eurostat, 2015).

In this country, Romanian immigrants report high rates of integration and a satisfactory social status as opposed to Moroccan immigrants, who tend to be less qualified and educated (Colombo, 2013; Di Bartolomeo, Gabrielli, & Strozza, 2015; Istat, 2016). Italian culture can be defined as individualistic, although within-country differences exist (Duncan, Ornaghi, & Grazzani, 2013). In contrast, Moroccan and Romanian families have a collectivistic cultural background (Hofstede, 2001) and are socialized by their families to endorse interdependent values, which emphasize obligations and social roles (Triandis, 1994). However, cultural distance from mainstream society in terms of religion and language is larger for Moroccan compared to Romanian immigrants. Overall, Moroccan and Romanian immigrant youth may face challenges and discrepancies related to different cultural norms, values and behaviors during social interactions in the different contexts they are exposed to. Nonetheless,

mounting evidence points to the potential beneficial effect of having an immigrant background for social development. Indeed, children from migrant families are exposed to different experiences and sets of values and learn diverse and complementary social skills.

In such diverse and challenging social contexts, the possibility to count on better EFs may boost their capacity to balance and integrate different perspectives and result in more appropriate social behaviors (Cabrera, 2013; Fuligni, 2001; Fuligni & Tsai, 2015). In this sense, not only inhibitory control, but also cognitive flexibility (i.e., the capacity to shift from one rule/context to another) may interact with their interdependent self in predicting social functioning. Yet, the interplay among self-construals and EFs in explaining prosocial behavior and social competence among ethnically diverse immigrant youth remains virtually unexplored.

3.2.3. The present study

The current study aimed to investigate the impact of both independent and interdependent self-construals on prosocial behavior and social competence among Moroccan and Romanian immigrant early adolescents and their non-immigrant peers in Italy, postulating the moderating role of EFs (i. e. working memory, inhibitory control, and cognitive flexibility) and ethnicity. Overall, the study adds to the literature in several ways.

First, we adopt an interdisciplinary and multi-method approach integrating different research areas (i.e., developmental, social, and cross-cultural psychology) and measures (i.e., self and parent-reports, performance tasks) to reduce shared variance and desirability biases, which usually compromise the validity of findings in cross-cultural research (Dimitrova et al., 2016; Motti-Stefanidi et al., 2012).

Second, we included immigrant groups that are underrepresented in the North American literature (i.e. Moroccans, Romanians), thus allowing to assess if findings can be generalized to immigrant youngsters in a European country such as Italy, which is witnessing a recent and important growth of migratory fluxes.

Third, our focus is on early adolescence, a developmental stage which has often been overlooked in the migration literature, despite being a crucial time for social and self-development.

Fourth, we investigated both independent and interdependent self-construals and all three main components of EFs as to identify potential links to different social outcomes (i.e., prosocial behavior and social competence), thereby overcoming the deficit perspective traditionally adopted in migration studies in favor of a more positive oriented one.

Our first purpose was to examine the role of independent and interdependent self-construals on immigrant and non-immigrant early adolescents' prosocial behaviors and social competence. In line with previous research, a positive association between interdependent self-construal and both social outcomes was expected (Cross et al., 2010; Kawabata et al., 2014; Utz, 2004). By contrast, given the marginal role of having and independent self-construal when simultaneously considering interdependent impulses, we did not expect any direct or indirect associations between independent self-construal and social outcomes across groups (Armenta et al., 2011).

The second purpose of this study was to investigate how EFs and ethnicity serve to moderate the expected effect of self-construals on prosocial behavior and social competence. Specifically, we postulated that the interaction of interdependence and EFs would differ according to ethnic background (i.e. three-way interaction). Precisely, we expected the moderating role of cognitive flexibility on the association between

interdependent self-construal and social outcomes to be more salient for early adolescent immigrants. Unlike their non-immigrant peers, early adolescent immigrants are exposed to different social and cultural contexts and need to shift from one context to another in order to adapt to social expectations (Fuligni & Tsai, 2015). Due to the larger cultural distance between Moroccans and mainstream youth, we postulated flexibility to play a more crucial role for Moroccan than for Romanian early adolescents. Given the scant and controversial findings on the role of specific components of EFs in relation to social and cultural factors in early adolescence, no a priori hypotheses were formulated as regards inhibitory control and working memory.

Last, on the basis of the broad set of skills involved in the acquisition of social competence compared to the more universal disposition underlying prosociality, we expected social competence to be more sensitive to the moderating effects of EFs and ethnic background compared to prosocial behavior (Charlesworth, 1996; Ostrov & Guzzo, 2015).

3.3. Method

3.3.1. Participants

Participants were recruited in the north-eastern region of Italy and were part of a larger study on early adolescents' socio-emotional adjustment. The sample included 116 Moroccan immigrant (39.7% girls; 25% first-generation), 124 Romanian immigrant (49.2% girls; 56.5% first-generation) and 248 non-immigrant Italian preadolescents and their parents. Participants were aged between 11 and 13 years. The mean age was 12.06 ($SD = .82$), 12.15 ($SD = .79$), and 12.14 ($SD = .80$) for Moroccan, Romanian, and non-immigrant Italian youth, respectively. On average, first-generation Moroccan immigrants had been residing in Italy for $M = 7.57$ years ($SD = 2.50$, range 2-13) and

first-generation Romanian immigrants for $M = 6.76$ years ($SD = 2.62$, range 1-12).

Among parents, 375 mothers (76.8%) completed the questionnaire, while the remaining 113 (23.2%) were fathers. The majority (91%) of adolescents were from two-parent families, whereas 7.5% were from single-parent (including never married, divorced, or widowed) families. Eight parents (1.6%) did not report on their marital status.

In terms of socioeconomic status (SES), Moroccan immigrant, Romanian immigrant, and national adolescents reported a medium level as assessed via the Family Affluence Scale (FAS; Currie, Molcho, Boyce, Holstein, Torsheim, & Richter, 2008) ($M = 4.25$, $SD = 1.79$, range 1-8; $M = 5.52$, $SD = 1.79$, range 1-9; $M = 5.73$, $SD = 1.91$, range 1-9, respectively). Significant differences in SES were found across groups $F(2.485) = 26.09$, $p < .001$, $\eta^2_p = .10$. Bonferroni post-hoc analysis revealed that Romanian immigrant and Italian non-immigrant adolescents were more likely to report medium-high SES than their Moroccan peers. Gender and age were balanced across the three groups. The study protocol and procedures were approved by the Ethics Committee of the School of Psychology, University of Padova (protocol #1473-2014).

3.3.2. 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 preadolescents were asked for additional verbal consent. Eligibility criteria were as follows: (a) the early adolescent was between 11 and 13 years old; (b) the adolescent lived with at least one of her/his

biological parents, (c) both parents were born in Italy (for national non-immigrants) (d) at least one biological parent was born either in Morocco or Romania (for immigrants), (d) the preadolescent was either first generation (born outside Italy) or second generation (born in Italy with at least one foreign-born parent) (for immigrants). Consistent with the European Commission guidelines, in this study the term “immigrant” refers to first (foreign born) and second generation (born in Italy from at least one foreign born parent) immigrants, whereas all subsequent generations (rarely found in Europe) are not covered (Kouider, Koglin, & Petermann, 2014). Data collection with preadolescents took place at school. Each adolescent 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, Romanian and non-immigrant samples were 60%, 61% and 85%, respectively.

Immigrant parents could decide to complete the questionnaires either in their native or in Italian language. Overall, 117 (48.8%) immigrant parents completed the questionnaires in the Italian language, whereas the remaining 123 (51.2%) preferred to complete them in their native language. All parents completed the questionnaires at home. Early adolescents were tested in Italian in two separate sessions of approximately 45 minutes 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. Preadolescents’ EFs were 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 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.

3.3.3. *Measures*

Self-construals. Youths' independent and interdependent self-construals were evaluated by means of the Self-Construal Scale (SCS; Singelis, 1994). This scale builds on concepts of the self in relation to others and culture and has been extensively used in cross-cultural research, also during adolescence (Liu & Goto, 2007; Singelis, 1994; Yeh, 2002). It consists of 30 items, 15 of which refer to the self as independent (e.g., 'My personal identity is independent of others, and this is very important to me'), and 15 to the self as interdependent (e.g., 'My happiness depends on the happiness of those around me'). All statements are rated on a 7-point Likert scale, where 1 corresponds to 'strongly disagree', and 7 to 'strongly agree'. The reliabilities of the two dimensions fall mainly within the .60–.70 range (Oyserman, Coon, & Kemmelmeier, 2002; Singelis, Bond, Sharkey, & Lai, 1999). In the present study, we used the Italian version of the measure, which has shown adequate psychometric properties (Duncan et al., 2013). Internal consistency (Cronbach Alpha and McDonald's Omega; Green & Yang, 2009) of the independent self-construal subscale was $\alpha = 0.72$ and Omega = 0.71 for Moroccan, $\alpha = 0.75$ and Omega = 0.75 for Romanian, and $\alpha = 0.61$ and Omega = 0.61 for non-immigrant samples; reliabilities of the interdependent self-construal subscale were $\alpha = 0.79$ and Omega = 0.79 for Moroccan, $\alpha = 0.78$ and Omega = 0.78 for Romanian, and $\alpha = 0.74$ and Omega = 0.74 for non-immigrant samples.

Executive functions. As a measure of working memory, participants completed the

digit span subtest of the WISC-IV (Wechsler, 2003). In the “forward” condition, children are instructed to listen to and then repeat increasingly longer strings of digits presented at approximately 1 second intervals. Two trials were administered at each string length. Digit backward was administered in the same fashion, but participants were required to repeat the digits in the reverse order. If a participant erred on both trials of a string length, the test was ended; otherwise the string length was increased by one. The raw scores for each subtest reflected the highest number of digits repeated in the correct order. The Italian version of this subtest has been validated by Orsini, Pezzuti and Picone (2012), showing good psychometric properties. The standard score was used, with higher scores indicating better performance.

The Hearts and Flowers version of the Dots Task (Davidson, Amso, Anderson, & Diamond, 2006) was used in the present study as a measure of inhibitory control and cognitive flexibility. The task consisted of three blocks of 20 trials each. Each of the first two blocks started with a block of four practice trials. Prior to the third block, no practice trials were presented. In the first block, a red heart was presented either at the left or right on the screen on each trial. The instructions were to press a key on the same side as the heart was shown as quickly and accurately as possible (congruent block, baseline). In the second block, a red flower was presented to the left or right. The instructions in this block were to press the key on the opposite side to where the flower was shown (incongruent block, inhibitory control). The third block (mixed block, cognitive flexibility) included randomly presented hearts and flowers, to the left or right, with the instructions to press on the same side when a heart was shown and to press on the opposite side when a flower was shown. The response button for the left side was the ‘z’ key on the computer keyboard, and the response button for the right side was the ‘m’ key. For each block, instructions were presented on the computer

screen and read aloud by the researcher. The trial sequence of events started with a fixation cross for 500ms, after which the task stimulus (heart or flower) was then shown for 750ms, resulting in a total trial duration of 1250ms (Davidson et al., 2006). Performance on the task was assessed by both accuracy (% correct responses) and RTs (on correct trials). All RTs shorter than 200ms were considered anticipatory responses and therefore removed from data analysis. Aggregate scores were calculated only for the subjects who did not fail the practice blocks (75% correct trials) and when at least 75% of overall trials were useable (95.87% valid cases, see paragraph on data analysis). In order to control for baseline RTs, we created a difference score by subtracting the median RT on the congruent block from the median RT on the incongruent and mixed blocks, yielding a measure of RTs for inhibitory control and cognitive flexibility, respectively. The median RT, rather than the mean value, was used to reduce the effect of outlying RTs. Next, we created a composite index by treating RT and accuracy as two indicators of a latent performance construct, separately for each block. First, we scaled both variables in the same direction, so that higher scores corresponded to better performance in each variable. Then, we conducted analyses on the average of the z scores for the RT and accuracy variables, separately for the two blocks, yielding a composite score for inhibitory control and cognitive flexibility, where higher scores correspond to better abilities (Salthouse & Hedden, 2002).

Prosocial behavior. Preadolescents' prosocial behavior was 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 divided between five scales of five items each, generating scores for Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems and Prosocial Behavior; all scales

but the last are summed to generate a Total Difficulties score. 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, Salcuni, Chessa, Raudino, Lis, & Altoè, 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). 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 prosocial behavior subscale. In the present study, Cronbach Alphas for this subscale were 0.61, 0.67, and 0.72 and Omegas were 0.62, 0.68, and 0.73 for the Moroccan, Romanian and national samples, respectively.

Social competence. The parent version of the Social Skills Questionnaire (SSQ; Spence, 1995) was used to evaluate children's social competence. The measure requires respondents to rate their children's social skills with peers over the past four weeks on a Likert scale ranging from 0 (not true) to 2 (mostly true). It consists of 30 positively phrased statements (e.g., My child controls his/her temper during disagreements with other kids; My child says nice things to others when they deserve it). All items are summed to generate a total social competence score, with higher scores indicating better social competence. The SSQ has been validated on children from 8 to 17 years, showing good internal consistency both in the Australian context (Spence, 1995) and on an ethnically diverse sample of children in Germany (Essau, Conradt, Sasagawa, & Ollendick, 2012). Cronbach Alphas and Omegas for this scale were 0.86, 0.88, and 0.87 for the Moroccan, Romanian and national samples, respectively.

Control variables

Age, gender, ethnicity, and nativity. Both early adolescents and their parents were asked to complete a questionnaire providing information on their age, gender, 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 socio-economic position for children. It includes four items concerning material affluence: ‘Does your family own a car?’ (0, 1, 2 or more); ‘How many times did you travel away on holiday with your family during the past 12 months?’ (0, 1, 2, 3 or more); ‘Do you have your own bedroom for yourself?’ (no = 0, yes = 1); and ‘How many computers does your family own?’ (0, 1, 2, 3 or more). 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, including the Italian context (Andersen, Krolner, et al., 2008; Vieno; Santinello, Lenzi, Baldassari, & Mirandola, 2009).

Non-verbal 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 minutes 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 $M = 96.35$, $SD = 12.65$, range 76-123, whereas Romanian immigrants

scored on average $M = 101.05$, $SD = 11.57$, range 75-124. As regards non-immigrant adolescents, the average score was $M = 105.37$, $SD = 11.11$, range 80-126.

3.3.4. 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, 68 cases (11.79%) were eliminated. The difficulties in collecting parents' complete answers to the questionnaires are the reason for this high percentage of missing values. Another 21 cases (4.13%) were excluded because their performance on the Hearts and Flowers task was invalid (i.e., failed practice block or less than 75% of valid trials), resulting in a final sample of 488 early adolescents and their parents. The remaining missing values were imputed for each subject based upon each subject's mean score on the considered measure. 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 self-construals, EFs, prosocial behavior and social competence were assessed using Pearson's correlations separately for the Moroccan, Romanian and national samples.

At the multivariate level, two series of linear regression models were conducted, one for each outcome (i.e., prosocial behavior and social competence). 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 A) was adopted using the `stepAIC` function of the package *MASS* (Hastie & Pregibon, 1992; Venables & Ripley, 2002). We relied on an exploratory rather than confirmatory model selection approach, based on the assumption that social outcomes are a very complex phenomenon that can hardly be captured in a

single confirmatory model (Roebroeck, Formisano, & Goebel, 2011).

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 McElreath (2016), 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 defined two initial models, one for each dependent variable, with self-construals (i.e., independent and interdependent), EFs (i.e., working memory, inhibitory control, and cognitive flexibility), and ethnicity as independent variables. To assess potential moderating effects of EFs and ethnicity, all two-way interactions between self-construals and EFs and all three-way interactions between self-construals, EFs, and ethnicity were included in the model. In addition, we considered the interaction between independent and interdependent selves. We also included age, gender and socio-economic status as covariates, since they have been found to influence developmental outcomes in migrant youth (see Dimitrova et al., 2016; Kouider et al., 2014). Finally, we controlled for non-verbal intelligence because there is evidence showing its impact on EF capacities across developmental stages (Arffa, 2007). We subsequently selected the best models, separately for each dependent variable, on the basis of the criteria specified above.

3.4. Results

Means and standard deviations for study variables and bivariate correlations are

reported in Table 3.1, separately for Moroccan, Romanian, and non-immigrant adolescents. The Akaike weights of all estimated models are presented in Appendix A, separately for prosocial behavior and social competence. With regard to prosocial behavior, the most plausible model is the 18th, with a probability of being the best of .35, superior to all other models (<.29) (Appendix A). This model explained 8% of the variance. All main effects, two-way and three-way interactions included in the final model are reported in Table 3.2. Results indicated that the independent self was not significantly associated with prosocial behaviors, neither directly nor by interacting with EFs or with ethnicity, whereas having a stronger interdependent self was significantly associated with more prosocial behaviors. However, the interdependent self significantly interacted with inhibitory control and ethnicity (three-way interaction).

To explore the interaction effect, we performed tests of the simple slopes (Aiken & West, 1991). As can be seen in Figure 3.1, having an interdependent self was linked to more prosocial behaviors for non-immigrant early adolescents who could count on high levels of inhibitory control ($B = .86$, $SE = .20$, $p < .001$, $\eta^2_p = .124$), whereas the same was not true for Moroccan ($B = -.30$, $SE = .44$, $p = .497$, $\eta^2_p = .012$) and Romanian immigrant youth ($B = .36$, $SE = .28$, $p = .205$, $\eta^2_p = .027$). At low levels of inhibitory control, having an interdependent self did not seem to impact on prosocial behavior neither for Moroccan ($B = .29$, $SE = .29$, $p = .318$, $\eta^2_p = .015$), nor for Romanian ($B = .37$, $SE = .29$, $p = .212$, $\eta^2_p = .028$) or national adolescents ($B = .48$, $SE = .28$, $p = .095$, $\eta^2_p = .026$).

With regard to social competence, findings clearly indicate that the most plausible model is the 12th (Appendix A), with a probability of being the best one of .43, largely superior to all other models (<.29). This model explained 19% of the variance. All main effects, two-way and three-way interactions included in the final model are reported in

Table 3.3.

Table 3.1 Descriptive statistics of study variables for Moroccan immigrant ($n = 116$), Romanian immigrant ($n = 124$) and national non-immigrant ($n = 248$) early adolescents, and bivariate correlations, separately for ethnic group.

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Moroccan immigrants ($n = 116$)							
<i>M</i>	4.92	5.20	8.72	-.14	-.03	7.59	43.12
<i>SD</i>	.81	.85	2.59	.72	.75	1.98	8.21
<i>Range</i>	2.73–6.40	3.00–6.60	3–16	-2.12–1.54	-1.79–2.61	3–10	21–58
1 Independent self	-	.34***	.06	.05	.01	-.15	.07
2 Interdependent self		-	.14	-.10	-.01	.01	.24**
3 Working memory			-	.06	-.02	.18*	.26**
4 Inhibitory control				-	-.01	.03	-.01
5 Cognitive flexibility					-	.06	.06
6 Prosocial behavior						-	.45***
7 Social competence							-
Romanian immigrants ($n = 124$)							
<i>M</i>	4.81	5.00	8.79	.02	-.07	7.74	46.22
<i>SD</i>	.83	.84	2.29	.68	.70	1.75	8.09
<i>Range</i>	2.20–6.67	2.33–6.47	3–13	-2.34–1.27	-2.54–1.55	4–10	20–59
1 Independent self	-	.34***	.06	-.04	-.09	.11	.09
2 Interdependent self		-	.07	.01	-.08	.25**	.20*
3 Working memory			-	-.02	-.02	-.02	.13
4 Inhibitory control				-	.33***	.03	.05
5 Cognitive flexibility					-	-.04	.08
6 Prosocial behavior						-	.51***
7 Social competence							-
Non-immigrants ($n = 248$)							
<i>M</i>	4.63	5.01	10.51	.06	.05	7.60	48.42
<i>SD</i>	.66	.70	2.84	.69	.63	1.81	7.08
<i>Range</i>	2.67–6.60	2.33–6.60	3–19	-4.17–1.80	-1.62–1.85	2–10	23–60
1 Independent self	-	.13*	-.02	.06	-.02	-.04	.04
2 Interdependent self		-	-.10	-.11	-.04	.26***	.15*
3 Working memory			-	-.05	.03	-.08	.03
4 Inhibitory control				-	.01	.29***	.01
5 Cognitive flexibility					-	.06	-.01
6 Prosocial behavior						-	.46***
7 Social competence							-

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

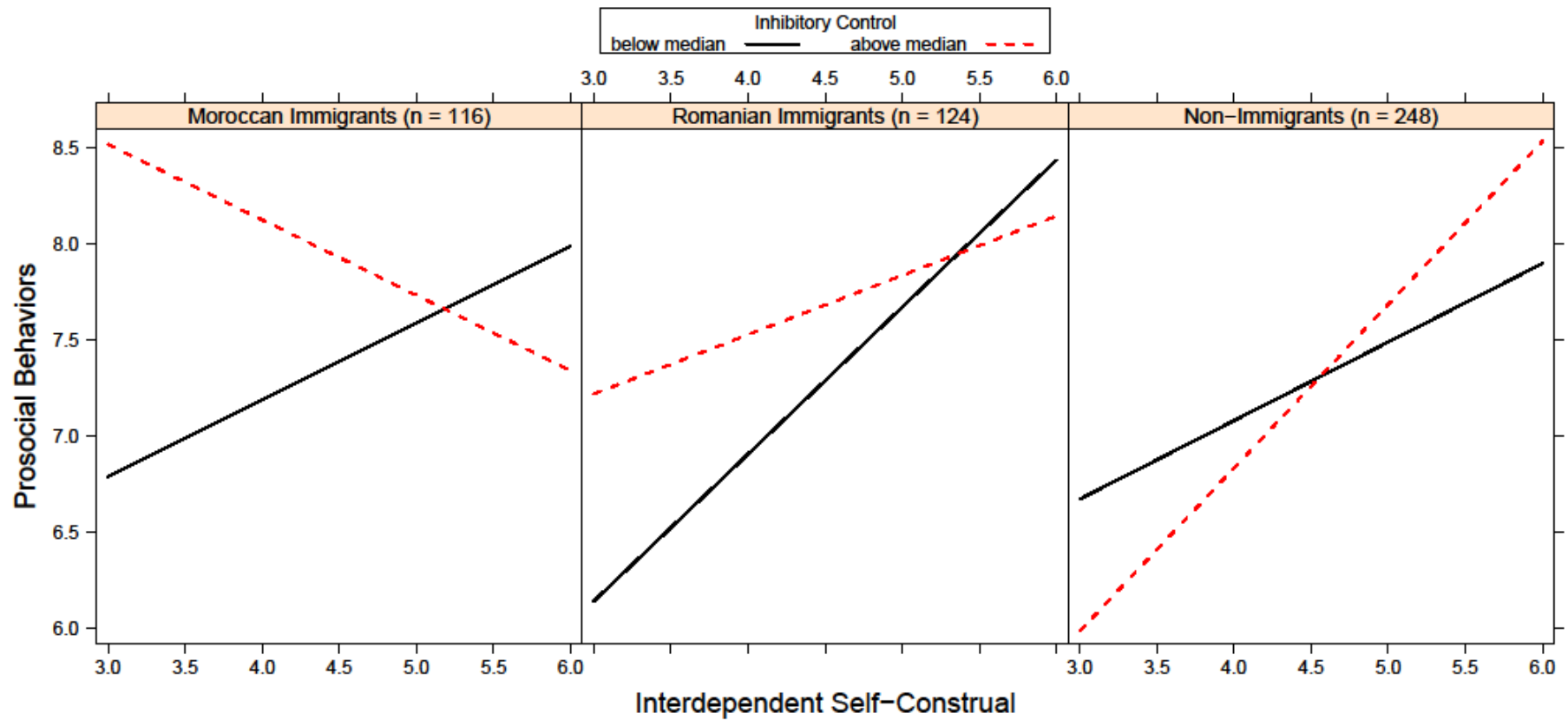
Table 3.2 Final linear regression model with prosocial behavior as dependent variable

<i>Variable</i>	<i>B (SE)</i>	Omnibus <i>F (df)</i>	η^2_p
Gender (female)	.27 (.17)	2.58(1,472)	.01
Independent self	-.81 (.37)	3.52 (1,472)	.01
Interdependent self	.67(.17)	19.32 (1,472)***	.03
Working memory	-.29 (.18)	.09(1,472)	.01
Inhibitory control	-.75 (1.07)	.68(1,472)	.01
Ethnicity		.44(2,472)	.01
Moroccan	2.88(1.37)		
Romanian	.56(1.30)		
Independent self x Working memory	-.03(.02)	2.83(1,472)	.01
Interdependent self x Inhibitory control	-.71(.44)	.02(1,472)	.01
Interdependent self x Ethnicity		2.47(2,472)	.01
Interdependent self x Moroccan	-.57(.26)		
Interdependent self x Romanian	-.07(.26)		
Inhibitory control X Ethnicity		.09(2,472)	.02
Inhibitory control x Moroccan	3.08(1.79)		
Inhibitory control x Romanian	5.43(2.02)		
Interdependent self x Inhibitory control x Ethnicity	7.58 (4.75)	4.31(2,472)*	.02
Interdependent self x Inhibitory control x Moroccan	-.61(.34)		
Interdependent self x Inhibitory control x Romanian	-1.09(.40)		

Note. $n = 488$. Baseline category for Ethnicity was non-immigrant. Baseline category for gender was male. $R^2 = .08$.

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

Figure 3.1 The interaction effect of interdependent self-construal and inhibitory control on prosocial behaviors for a) Moroccan immigrant; b) Romanian immigrant and c) non-immigrant early adolescents ($n = 488$). Inhibitory control was divided into two levels based on median: low = below median; high = above median.



Results indicated that the independent self was not significantly related to social competence, neither directly nor in association with other variables. In contrast, gender, interdependence, working memory and ethnicity were each significantly associated with social competence. Specifically, girls were perceived as more socially competent ($M = 47.99$, $SD = 7.27$) than boys ($M = 45.42$, $SD = 8.23$).

Table 3.3 Final linear regression model with social competence as dependent variable

<i>Variable</i>	<i>B (SE)</i>	Omnibus <i>F (df)</i>	η^2_p
Gender (female)	1.66(.69)	5.79(1,463)*	.01
Age	-.74(.44)	2.93(1,463)	.01
Independent self	.26(.48)	.15(1,463)	<.01
Interdependent self	1.59(.71)	9.30(1,463)**	.01
Working memory	.14(.17)	8.02(1,463)**	<.01
Inhibitory control	-2.23(4.60)	.40(1,463)	<.01
Cognitive flexibility	18.19(6.41)	.80(1,463)	.02
Ethnicity		16.07(2,463)***	.01
Moroccan	-11.14(6.27)		
Romanian	-5.10(6.34)		
Independent self x Cognitive flexibility	-1.33(.70)	3.63(1,463)	.01
Interdependent self x Inhibitory control	.48(.87)	.38(1,463)	<.01
Interdependent self x Cognitive flexibility	-2.39(1.09)	.39(1,463)	.01
Interdependent self x Ethnicity		.05(2,463)	<.01
Interdependent self x Moroccan	-.05(1.10)		
Interdependent self x Romanian	.06(1.07)		
Working memory x Ethnicity		2.54(2,463)	.01
Working memory x Moroccan	.70(.32)		
Working memory x Romanian	.34(.34)		
Inhibitory control x Ethnicity		.01(2,463)	.02
Inhibitory control x Moroccan	.26(7.61)		
Inhibitory control x Romanian	23.12(8.68)		
Cognitive flexibility x Ethnicity		.59(2,463)	.02
Cognitive flexibility x Moroccan	-22.62(8.03)		
Cognitive flexibility x Romanian	-21.17(8.92)		
Interdependent self x Inhibitory control x Ethnicity		3.97(2,463)*	.02
Interdependent self x Inhibitory control x Moroccan	-.05(1.43)		
Interdependent self x Inhibitory control x Romanian	-4.58(1.70)		
Interdependent self x Cognitive flexibility x Ethnicity		5.34(2,463)**	.02
Interdependent self x Cognitive flexibility x Moroccan	4.58(1.54)		
Interdependent self x Cognitive flexibility x Romanian	4.44(1.73)		

Note. $n = 488$. Baseline category for gender was male. Baseline category for Ethnicity was non-immigrant. $R^2 = .19$. * $p < .05$; ** $p < .01$; *** $p < .001$

Similarly, higher interdependence and better working memory were related to more social competence. As regards ethnicity, it was found to significantly interact with interdependence and inhibitory control (three-way interaction)(Figure 3.2). Specifically, tests of simple slopes showed that having an interdependent self was linked to higher social competence for Moroccan early adolescents who could count on high levels of inhibitory control ($B = 4.08, SE = 1.66, p = .019, \eta^2_p = .140$), whereas the same was not true for Romanian ($B = .37, SE = 1.31, p = .779, \eta^2_p = .001$) and non-immigrant Italian youth ($B = .83, SE = .84, p = .322, \eta^2_p = .008$). At low levels of inhibitory control, having an interdependent self did not seem to impact on social competence neither for Moroccan ($B = 1.39, SE = .23, p = .261, \eta^2_p = .019$), nor for Romanian ($B = 1.55, SE = 1.47, p = .297, \eta^2_p = .021$) or national adolescents ($B = 1.73, SE = 1.16, p = .139, \eta^2_p = .021$).

Furthermore, a significant three-way interaction emerged among interdependent self, cognitive flexibility, and ethnicity (Figure 3.3). Test of simple slopes indicated that a stronger interdependent self was related to a better social competence at high levels of cognitive flexibility for Moroccan ($B = 2.89, SE = 1.27, p = .027, \eta^2_p = .092$) and Romanian immigrants ($B = 3.36, SE = 1.22, p = .008, \eta^2_p = .129$), but not for their non-immigrant peers ($B = -.37, SE = .93, p = .690, \eta^2_p = .001$). In contrast, non-immigrant interdependent early adolescents reported better social competence at low levels of cognitive flexibility ($B = 3.55, SE = .98, p < .001, \eta^2_p = .103$), whereas the same was not true for Moroccan ($B = .41, SE = 1.49, p = .786, \eta^2_p = .001$) and Romanian immigrants ($B = -.39, SE = 1.36, p = .774, \eta^2_p = .001$).

Figure 3.2 The interaction effect of interdependent self-construal and inhibitory control on social competence for a) Moroccan immigrant; b) Romanian immigrant and c) non-immigrant early adolescents ($n = 488$). Inhibitory control was divided into two levels based on median: low = below median; high = above median.

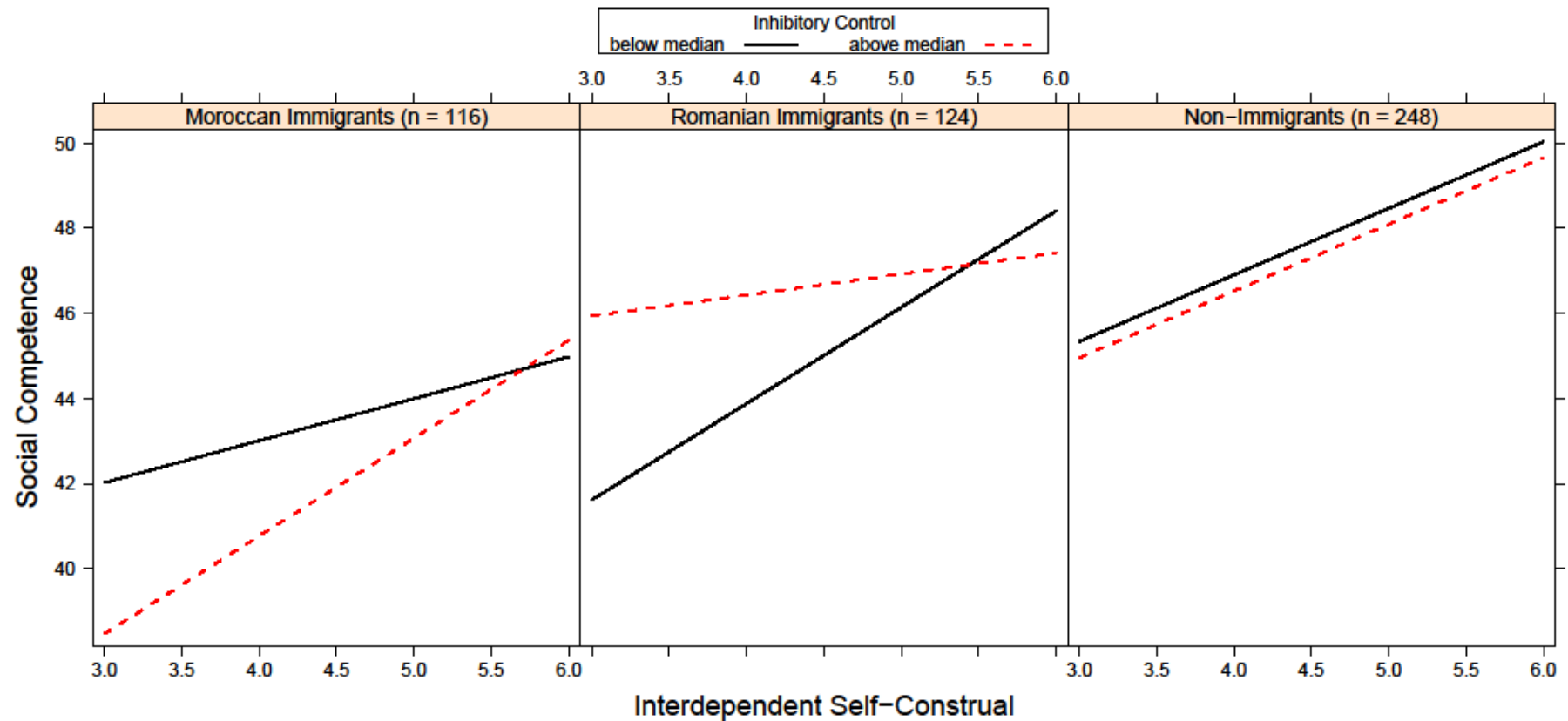
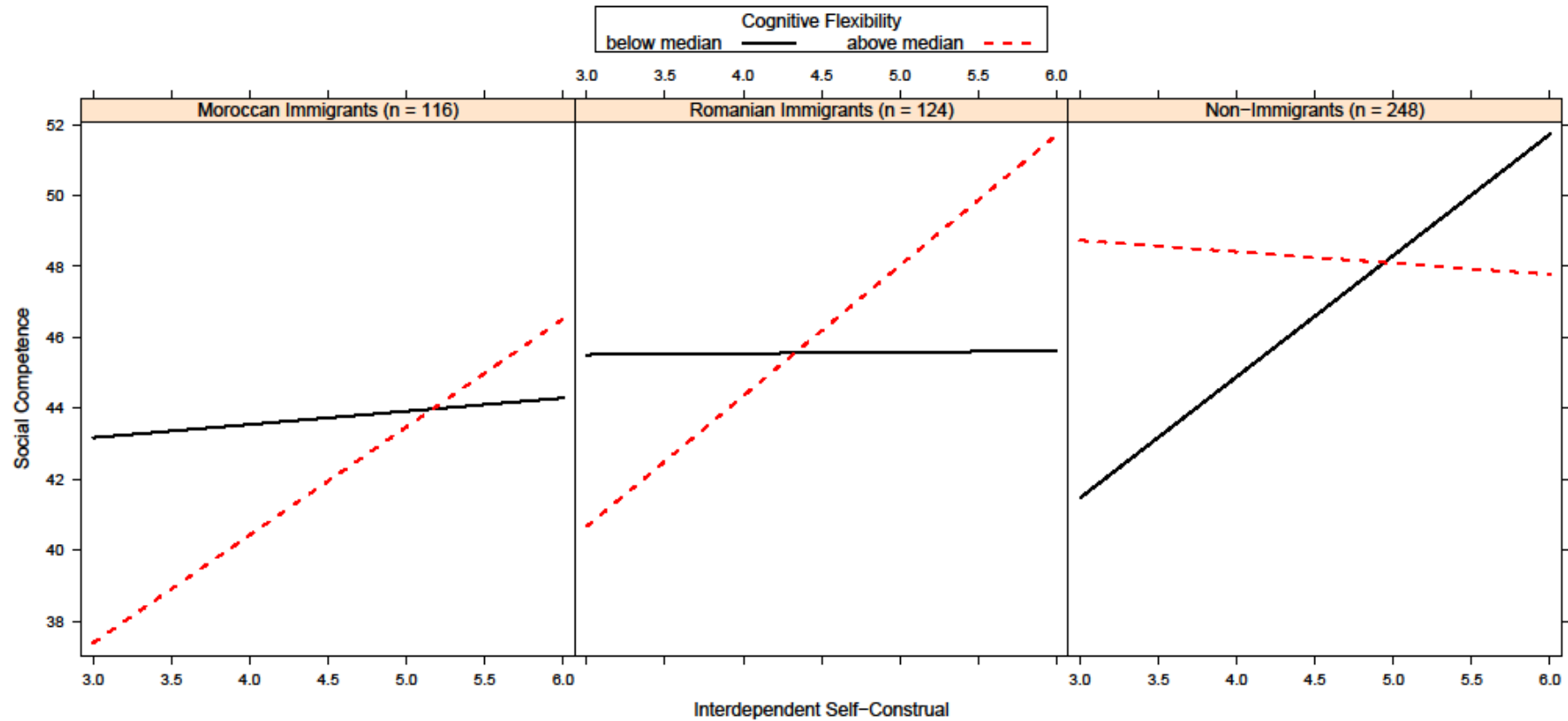


Figure 3.3 The interaction effect of interdependent self-construal and cognitive flexibility on social competence for a) Moroccan immigrant; b) Romanian immigrant and c) non-immigrant early adolescents ($n = 488$). Cognitive flexibility was divided into two levels based on median: low = below median; high = above median.



3.5. Discussion

The general purpose of this study was to examine the moderating effects of EFs (i.e., working memory, inhibitory control, and cognitive flexibility) and ethnicity in the expected association between self-construal and social adjustment among early adolescents of immigrant and non-immigrant origin. Our findings overcome some limitations of previous research, such as the adoption of a deficit perspective and the focus on older adolescents. In addition, we adopted an integrative and multi-method approach which allowed us to investigate the complex interplay of ethno-cultural influences on social outcomes in early adolescence.

In line with prior findings reporting a lack of association between independence and social outcomes when interdependence is simultaneously taken into consideration (Armenta et al., 2011), having an independent orientation did not impact on social outcomes, neither directly nor indirectly. This finding confirms the marginal role of the independent self-construal in understanding social functioning. Indeed, prior studies found that independence was more extensively linked to self-interest oriented behaviors rather than to cooperative ones (Cross et al., 2010; Kawabata, 2016; Utz, 2004). Conversely, in line with our expectations, interdependent self-construal was found to be the most important contributor to both prosocial behavior and social competence (Armenta et al., 2011). This pattern is consistent with previous research reporting strong and positive associations of interdependence with social outcomes across different ethnic groups (Cross et al., 2010; Kawabata, 2016; Kawabata et al., 2014; Utz, 2004).

The findings for prosocial behavior and social competence differed in the amount of variance explained by our models, and also in the significant moderating effects. Specifically, our hypothesized model explained more variance for social competence

than for prosociality. Prosocial behaviors may be better explained by other variables (e.g., religious identity) that were not the focus of the present study.

Nonetheless, these results indicate that a more nuanced picture of the effects of self-construals can be obtained by including multiple measures of social functioning. Indeed, prosociality is conceptualized as a universal disposition common across cultures, whereas social competence encompasses a broader set of instrumental actions (not necessarily to benefit others) as to be successful in relationships, implying the need to evaluate the diverse social and cultural norms of a given context before endorsing the most adequate behaviors (Charlesworth, 1996; Ostrov & Guzzo, 2015). Despite the links among self-construals, prosocial behaviors and social competence require further study, our findings suggest that interdependence may have differential effects when interacting with EFs and ethnicity on early adolescents' prosocial behaviors and social competence.

As regards the hypothesized interaction effects, inhibitory control interacted with ethnicity in moderating the relationship between interdependence and both social outcomes. At high levels of interdependence, higher inhibitory control was related to more prosocial behavior for non-immigrant early adolescents, whereas a higher inhibitory control was linked to more social competence for Moroccan immigrants. These findings can be read in light of variation in levels of cultural distance from the mainstream Italian society and in the endorsement of different sets of cultural values.

As regards prosocial behavior, independence and interdependence are just one culturally related dimension among many other values which have been linked to prosocial tendencies. The need for Italian preadolescents to inhibit prepotent responses as to behave in a prosocial way may be linked to the need to inhibit simultaneously other values typical of the Italian individualistic society (e. g. self-direction, self-

enhancement) which do not generally favor prosociality (Schwartz & Boehnke, 2004).

With regard to social competence, a better capacity to withhold a predisposed response in favor of a non-predisposed but more context-appropriate one may be especially salient for Moroccan adolescents, given the larger cultural distance of this migrant group from the mainstream Italian society in terms of language, physical appearance, and norms in comparison with their Romanian counterparts (Giuliani & Tagliabue, 2015; Regalia & Giuliani, 2012). In addition, Muslim immigrants are currently the most discriminated group all over Europe (Eurostat, 2015), and most of Moroccan immigrants in Italy are Muslims (Istat, 2016). Such a situation might complicate the achievement of successful relationships for Moroccan early adolescents, and a better inhibitory control may represent a protective factor allowing to behave in more socially appropriate ways.

As regards cognitive flexibility, results only partially confirmed our hypotheses. Cognitive flexibility and ethnicity were significant moderators in the relationship between interdependence and social competence, but not in the link between interdependence and prosocial behavior. As previously mentioned, it could be argued that the need to switch from one set of cultural norms to another is less pronounced when endorsing prosocial behaviors, and more crucial to be successful in peer relationships (i.e., social competence). Indeed, at high levels of flexibility, both interdependent Moroccan and Romanian immigrants showed higher social competence.

The fact that this moderation effect was significant for both immigrant groups suggests that it may rely more on the common migration background than on differences in cultural distance from the mainstream society. In contrast, Italian non-immigrant adolescents had higher social competence at low levels of flexibility. Flexibility during early adolescence is not an automatic capacity yet, and may confer

greater vulnerabilities to act in impulsive and immature ways (Crone & Dahl, 2012), which in turn could temporarily compromise social functioning. Differences in the familiarity with flexibility tasks between immigrant and non-immigrant youth could account for the different patterns of associations. It may be argued that the exposure to different cultural and social norms linked with having a migration background contributes to more familiarity with flexibility for immigrants earlier during development (Crone & Dahl, 2012), way before their non-immigrant peers.

As hypothesized, cognitive flexibility in social interactions may be particularly important for immigrant adolescents, who are exposed to a set of diverse contexts with different social norms and expectations. The ability to shift from one set of values to another according to the different contexts contributes early during development to their overall success in relationships and social competence. Conversely, flexibility is a less familiar cognitive tool for non-immigrant youth, who are exposed only to the mainstream social norms and values. The counterintuitive finding among non-immigrant preadolescents may thus be linked to the vulnerabilities associated with the slow maturation of flexibility in mainstream adolescents, who, compared to their immigrant peers, are faced later during development with the need to flexibly adjust their behaviors across different socio-cultural contexts. However, these findings need to be replicated in longitudinal studies across different ages, with larger samples, and by comparing Moroccan and Romanian youth living in the country of settlement with those living in the country of origin before any conclusions can be drawn.

Last, a better working memory emerged to be directly linked to better social competence, confirming its crucial role in the processing of social information (Riggs, Jahromi, Razza, Dillworth-Bart, & Mueller, 2006). However, working memory did not interact with interdependence to predict social outcomes. It could be argued that

working memory processes are more independent than other cognitive processes from personal and cultural influences (Engel de Abreu, Baldassi, Puglisi, & Befi-Lopes, 2013).

3.5.1. Limitations and directions for future research

There are several limitations in the present study that need to be mentioned.

First, the cross-sectional design prevents us from drawing any conclusions about causality. Longitudinal studies are needed to shed light on the developmental trajectories of variables involved in immigrant adolescents' social development.

Second, in the present study, social outcomes were reported by parents. However, parents have a limited access to their children's social interactions, and a multi-informant study is needed as to obtain a more accurate picture of adolescents' social development in different contexts (e. g. school, peers, self-perception).

Third, this study focused specifically on Moroccan and Romanian immigrants and Italian non-immigrants. Generalization of findings to other ethnic groups should be done with caution.

Last, the small effect-size of our models and of interaction effects needs to be acknowledged. The explained variance was relatively modest compared to single informant studies where shared method variance may inflate relations between constructs (Sawyer, Streiner, & Baghurst, 1998). In addition, interaction effects are generally hard to detect, and the contribution of interaction effects over and above main effects is typically small (McClelland & Judd, 1993; Wampold & Freund, 1987). By definition, as stated by Box and Draper (1987, p. 424) "Essentially, all models are wrong, but some are useful". Indeed, our exploratory intent was to test a complex and plausible model of reality able to provide new insights and hints for future research and

discussion.

In spite of these limitations, our study uniquely contributes to advancing research on early adolescence by providing evidence of similarities and differences in the moderating role of EFs in the association between self-construal and social outcomes in immigrant and non-immigrant youth. The combined use of behavioral, self-report and parent-report measures is a strength of the present study, as it allows to overcome desirability and shared variance biases, thus increasing the validity of findings. In addition, our findings point to both similarities and differences between prosocial behavior and social competence in terms of personal and contextual influences, highlighting the need to include separate measures of these two aspects in cross-cultural research. Finally, our study supports previous findings on the different role of EF sub-components in predicting social outcomes, and of the importance of situating EFs in socio-cultural context, promoting a positive youth development perspective as to overcome the traditional deficit approach adopted in migration research (Cabrera, 2013; Li-Grining, 2012).

If results of the present study are replicated and extended, clinical implications are possible. Early adolescence emerges as a very delicate and complex phase of transition during development. It may represent a suitable target for preventive interventions aimed to boost social functioning by supporting interdependent values, as to reduce the risk of disparities among immigrant and non-immigrant youths in terms of socio-emotional adjustment.

In addition, our findings suggest that ethnic background and immigrant status are important variables to consider when tailoring interventions with early adolescents. Specifically, our study supports the importance of considering the role of EFs in links with contextual influences. Although more studies are needed to more deeply

understand the complex interplay between cognitive factors and ethnic background, acknowledging the differential impact of inhibitory control and cognitive flexibility according to contextual factors may guide the implementation of effective prevention and intervention efforts.

More broadly, our findings highlight the need to consider both similarities and differences among multiple migrant groups, rejecting the controversial “one-size-fits-all approach” often adopted in prior research.

CHAPTER 4

Study 2: Perceived discrimination and problem behaviors among Moroccan and Romanian immigrant early adolescents: moderating role of acculturation orientations and impulse control

4.1. Abstract

This study investigated how acculturation orientations and impulse control (IC) moderate the relationship between perceived discrimination and problem behaviors among early adolescent immigrants living in Italy. Participants were 126 Moroccan and 126 Romanian youths (46% girls, 42% first-generation) aged 11-13 years and their parents. Perceived discrimination and acculturation orientations were assessed using self-report questionnaires, while IC was evaluated during a standardized, computer-based gambling task. Problem behaviors were assessed via parental report. Cluster analysis on acculturation orientations identified separated, assimilated, and integrated adolescents. Regression analyses indicated that higher levels of perceived discrimination were associated with more internalizing and externalizing problems in both groups. When facing discrimination, preadolescent immigrants 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 only for those who showed high levels of IC. Furthermore, low levels of IC were associated with more externalizing problems for Romanian, but not for Moroccan preadolescents. The findings underscore the importance of moving away from a one-size-fits-all approach when developing interventions and education programs for dealing with discrimination-related problem behaviors among immigrant youth.

Keywords: discrimination, acculturation, impulse control, internalizing and externalizing problems, early adolescents, immigration, model selection

4.2. Introduction

Early adolescence represents a critical time for the onset and development of internalizing and externalizing problem behaviors (Andersen & Teicher, 2008; Dahl, 2004), especially for immigrant youth (Kouider, Koglin, & Petermann, 2014). It is during early adolescence that immigrant children start to develop a greater awareness of cultural and personal differences, and begin to question their own group memberships and identities (Phinney, 2006). They start to define their sense of belonging to the mainstream and heritage cultures, and social demands including exposure to discrimination increase (Phinney, 1989). Perceived ethnic discrimination is at present a pressing public health concern and represents a crucial risk factor for youth's internalizing and externalizing difficulties (Dimitrova, Chasiotis, & van de Vijver, 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 the immigrants' potential, as well as to prevent behavioral and emotional risks and disparities between children of immigrant and non-immigrant origin (Motti-Stefanidi & Masten, 2013).

The present study aimed to investigate how perceived discrimination impacts on problem behaviors in a sample of Moroccan and Romanian early adolescent immigrants in Italy, a southern European country representing one of the top receiving societies in Europe where immigration is growing, but nonetheless understudied. Specifically, we sought to examine whether acculturation orientations and impulse control (IC) moderate the relationship between discrimination and problem behaviors in these two immigrant groups.

4.2.1. Discrimination and problem behaviors

Ethnic discrimination is a common experience for migrant youths (Motti-Stefanidi, Berry, Chrysochoou, Sam, & Phinney, 2012). Garcia Coll et al. (1996) underlined how perceived discrimination and exclusion are the most important risk factors affecting developmental outcomes in ethnic minority youth. However, there are relatively few studies on the effect of ethnic discrimination on psychological adjustment among early adolescent immigrants, which is surprising given the increased exposure to discriminatory experiences at this developmental stage (Phinney, 1989). Furthermore, research on ethnic discrimination to date has been carried out mostly in the US and among African, Asian and Latino Americans, while studies of different migrant groups and in other countries are still scarce.

Discrimination has been widely studied in the stress-coping model, which posits that discriminatory experiences, like other daily stressors and hassles, reduce children's coping resources as well as opportunities for personal growth and well-being (Clark, Anderson, Clark, & Williams, 1999). In a more risk and resilience oriented framework, migrant youths are thought to have personal and contextual assets that can protect them against the negative effects of ethnic discrimination (Masten & Coatsworth, 1998). In this perspective, discrimination constitutes an environmental condition in which early adolescent immigrants are embedded, and which may interact with several individual characteristics to explain internalizing and externalizing outcomes. Exploring the interaction of environmental characteristics and individual factors is consistent with the ecological theory postulated by Bronfenbrenner and Morris (2006), which emphasizes interactive effects among different contextual and personal levels in links with psychological adjustment.

In line with the ecological and the risk and resilience perspectives, theories on 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 (Brody et al., 2006; Major, Quinton, & McCoy, 2002). In the present study, we focus on acculturation orientations as potential moderators of the perceived discrimination-problem behavior link. In addition, we investigate the role of IC, since in a separate line of research it has recently been theorized as a potential moderator of the relationship between both contextual and cultural variables and psychological adjustment (Hofmann, Schmeichel, & Baddeley, 2012; Li-Grining, 2012).

4.2.2. Acculturation orientations and IC

Early adolescent immigrants have typically to go through the acculturation process, namely the learning of, and adapting to, a different culture (Berry, 2003). This is a dynamic and bi-dimensional process which involves changes in acculturation orientations to both the heritage and the settlement cultures (Ward & Geeraert, 2016).

Recent research using cluster analysis failed to replicate the four standard acculturation orientation categories originally proposed by Berry (1997), supporting the validity of different degrees 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) as common strategies used by migrants during the acculturation process (Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Ward & Geeraert, 2016). Mounting evidence points to the possible promotive role of having a bicultural identity for immigrants (Nguyen & Benet-Martinez, 2013).

However, findings are mixed. For instance, Berry and Sabatier (2010) found that

the positive effect of integration was stronger for immigrant adolescents in the multicultural Canadian society than in the assimilationist French one.

Only few studies investigated the possible moderating role of acculturation orientations in the relationship between perceived discrimination and problem behaviors, focusing mainly on adolescent or young adult ethnic minorities in the US. These studies suggest that assimilated adolescents are the most vulnerable to discriminatory experiences, since a stronger orientation towards the mainstream society is thought to magnify the salience of discriminatory experiences, whereas a stronger orientation towards the heritage culture does not seem to have a significant impact (Park, Schwartz Lee, Kim, & Rodriguez, 2013; Umana Taylor & Updegraff, 2007). Experiencing discrimination (e.g. being ignored, treated unfairly, or excluded) may have more negative impact on immigrants when they view themselves as highly integrated in the majority culture.

In the European context, Cristini, Scacchi, Perkins, Santinello and Vieno (2015) did not report any significant moderation effect of ethnic and national identity on the association between discrimination and psychological adjustment in a large sample of adolescents from different cultural backgrounds in Italy. In contrast, Maes, Stevens, and Verkuyten (2014) found a protective effect of ethnic, but not national identity in a study of Muslim early adolescent immigrants in the Netherlands. Such mixed findings may be linked to differences across settlement societies and ethnic groups, but also to the use of bi-dimensional measures of acculturation orientations focusing on ethnic and national identity issues rather than on heritage and mainstream behaviors and practices (Berry & Sabatier, 2011).

Preliminary evidence indicates that, when considered simultaneously in the same model, both heritage and mainstream acculturation orientations play a protective role in

the association between ethnic discrimination and problem behaviors, suggesting a possible protective role of endorsing integration as a strategy during adolescence (Musso, Inguglia, & Lo Coco, 2015; Sabatier & Berry, 2008). However, less is known about how these associations may operate during early adolescence, a developmental stage characterized by unstable acculturation orientations due to the on-going process of identity formation. Indeed, there is some evidence showing that cultural maintenance may be protective only in the presence of stable cultural orientations (Yip, Gee, & Takeuchi, 2008).

In the clinical neuropsychology literature, an important individual variable which was found to moderate the negative effects of contextual stressors (e. g., poverty, negative parenting) on emotional and behavioral outcomes is impulse control (IC). IC has been defined as the capacity to inhibit an automatic response in order to successfully complete a goal (Bezdjian, Baker, Lozano, & Raine, 2009). The Iowa Gambling Task (IGT; Bechara, Damasio, Damasio, & Anderson, 1994) is the most widely used measure of “hot cognition” and affective decision making (Albert & Steinberg, 2011; Kerr & Zelazo, 2004), and provides a direct assessment of impulsivity (Burdick, Roy, & Raver, 2013). Specifically, the IGT requires participants to choose from four decks with varying rewards and punishments. Two “disadvantageous” decks offer high initial rewards but higher delayed punishments, yielding net losses. Two “advantageous” decks offer low initial rewards and lower delayed punishments for net gains. Thus, a 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).

Early adolescents typically show the most disadvantageous performances at this

task, indicative of the normative J-curve model of IC (Albert & Steinberg, 2011; Smith, Xiao, & Bechara, 2012). This impairment has been linked to early risk taking behaviors and externalizing disorders later in life (Romer, Betancourt, Giannetta, Brodsky, Farah, & Hurt, 2009).

For early adolescent immigrants faced with discrimination, IC may interact with specific acculturation orientations to predict problem behaviors. That is, different acculturation orientations may be effective depending on the early adolescents' levels of IC (i.e., three-way interactions) (Li-Grining, 2012; Menting, Van Lier, Koot, Pardini, & Loeber, 2016). For example, integration may have a protective effect on youths' adjustment, so that immigrant early adolescents who endorse integration are less vulnerable to low levels of IC. Conversely, assimilated adolescents, who are generally less prepared to cope with discriminatory experiences due to their identification with the mainstream society, may benefit more from higher levels of IC, which could help them to react properly to unexpected, discrimination-related stressors.

However, to the best of our knowledge, no study has investigated the complex interplay among discrimination, acculturation orientations and IC in early adolescent immigrants.

4.2.3. The role of ethnicity

Scholars agree that the impact of immigration varies with the ethnic background of the adolescent (Fuligni & Tsai, 2015; Ikram, Snijder, de Wit, Schene, Stronks, & Kunst, 2016; Ward & Geeraert, 2016). In particular, the associations of perceived ethnic discrimination and acculturation orientations with psychological adjustment have been found to vary considerably across ethno-cultural groups (Berry & Sabatier, 2010). Cultural and individual-level variables may account for this variability (Sam, Vedder,

Liebkind, Neto, & Virta, 2008). Moreover, different cultural values may differentially emphasize inhibition and control of one's behavior, and consequently their role in problem behaviors (Fuligni & Tsai, 2015; Li-Grining, 2012).

In this study, we focused on Moroccan and Romanian early adolescent immigrants because they represent two of the largest migrant groups in Italy and in Europe (Eurostat, 2015). Moroccan immigrants are a visible non-European immigrant minority, and are currently the most discriminated group in Europe (Eurobarometer, 2015). Cultural, linguistic, and religious distance from the Italian society is emphasized (Giuliani & Tagliabue, 2015). Conversely, Romanians are of European descent, and more closely resemble the Italian culture in terms of both values and language. 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 experienced by these migrant groups, it may be expected that discriminatory experiences differently interact with acculturation orientations and IC for Moroccan and Romanian preadolescents. For example, the reduced cultural distance for Romanians may render discriminatory experiences more salient for them, who could benefit more than their Moroccan counterparts from both integration strategies and higher levels of IC.

4.2.4. The present study

The current study examined the relation between perceived discrimination and problem behaviors, as well as the moderating effects of acculturation orientations and IC among Moroccan and Romanian early adolescent immigrants in Italy.

On the basis of theory and empirical research, we predicted that discrimination

would be positively associated with increased internalizing and externalizing problems among both ethnic groups. Additionally, 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 expected a less robust association between discrimination and problem behaviors consistent with prior studies emphasizing the protective role of ethnic identity (Musso et al., 2015). We also postulated that low IC would strengthen the association between discrimination and youth problem behavior, whereas the opposed pattern was expected for high levels of IC. Furthermore, we speculated that the moderating role of acculturation orientations would depend on levels of IC (i.e., three-way interaction). In particular, we hypothesized that high levels of IC would reduce the negative effects of discrimination especially among assimilated adolescents, who are generally more vulnerable to the negative effects of this environmental stressor (Umaña-Taylor & Updegraff, 2007) and could benefit the most from the advantages of having a high IC.

Given recent evidence linking IGT performance with behavioral difficulties rather than with emotional symptoms, we expected IC to play a more salient role in links with externalizing problems rather than internalizing ones (Romer et al., 2009).

Finally, because evidence suggests that ethnic background may be related to the experience of discrimination as well as to the endorsement of specific acculturation strategies (Berry & Sabatier, 2010; Ward & Geeraert, 2016), we examined whether the patterns of association among study variables varied by ethnicity.

4.3. Method

4.3.1. Participants

Participants were recruited in the north-eastern region of Italy and were part of a larger

study on national and immigrant early adolescents' socio-emotional adjustment. The sample included 126 Moroccan immigrant (42.1% girls; 25.4% first-generation) and 126 Romanian immigrant (49.2% girls; 57.9% first-generation) 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 immigrant youth, respectively. On average, first-generation Moroccan immigrants had been residing in Italy for $M = 7.47$ years ($SD = 2.50$, range 2-13) and first-generation Romanian immigrants 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 immigrant 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).

4.3.2. 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 consent.

Eligibility criteria were as follows: (a) the preadolescent was between 11 and 13 years old; (b) the early adolescent lived with at least one of her/his biological parents, (c) the preadolescent was either of Moroccan or Romanian origin; (d) the early adolescent was either first- or second generation immigrant. Consistent with the European Commission guidelines, in this study the term “immigrant” refers to first (foreign born) and second generation (born in Italy from at least one foreign-born parent) immigrants, whereas all subsequent generations (rarely found in Europe) are not covered (Kouider et al., 2014). Data collection with preadolescents 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 samples were 60%, and 61%, respectively.

Immigrant parents could decide to complete the questionnaires either in their native or 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. All parents completed the questionnaires at home. Early adolescents were tested in Italian in two separate sessions of approximately 45 minutes 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, 2007). 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.

4.3.3. Measures

Perceived ethnic discrimination. Early adolescents' perceived discrimination was measured via the Perception of Racism in Children and Youth questionnaire (PraCy; Pachter, Szalacha, Bernstein, & Garcia 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 (e.g., How often have you: "Been watched closely or followed around by security guards or store clerks at a store or mall? Been called an insulting name?"). 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.

Acculturation 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 (e.g., "How well do you understand spoken Italian/Romanian or Moroccan?"), media use (e.g., "How often do you watch Italian/Romanian or Moroccan television?"), and social affiliations (e.g., "How many Italian/Romanian or Moroccan friends do you have?"). 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 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 $\alpha = 0.75$ and Omega = 0.72 for Moroccan and $\alpha = 0.77$ and Omega = 0.72 for Romanian samples; reliabilities of the heritage orientation subscale were $\alpha = 0.84$ and Omega = 0.82 for Moroccan and $\alpha = 0.88$ and Omega = 0.89 for Romanian samples.

Impulse Control. Participants were administered a computerized version of the Iowa Gambling Task (IGT; Bechara et al., 1994). In this task, participants were shown four decks of 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 stake of € 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, Kesek, Cohen, Lamm, Lewis, & Zelazo, 2011).

Problem behaviors. Preadolescents' internalizing and 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 divided between five scales of five items each, generating scores for Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems and Prosocial Behavior; all scales but the last are summed to generate a Total Difficulties score. 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, Salcuni, Chessa, Raudino, Lis, & Altoè, 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 alternative 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 non-clinical 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 internalizing and externalizing problems subscales. In the present study, Cronbach Alphas for the internalizing problems subscale were 0.71 and 0.66, whereas Omegas were 0.72 and 0.67 for the Moroccan and Romanian samples, respectively; for the externalizing problems subscale, Alphas were 0.73 and 0.79, whereas 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 socio-economic position for youth. It includes four items concerning material affluence: ‘Does your family own a car?’ (0, 1, 2 or more); ‘How many times did you travel away on holiday with your family during the past 12 months?’ (0, 1, 2, 3 or more); ‘Do you have your own bedroom for yourself?’ (no = 0, yes = 1); and ‘How many computers does your family own?’ (0, 1, 2, 3 or more). 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, Krolner et al., 2008; Vieno; Santinello, Lenzi, Baldassari, & Mirandola, 2009).

Non-verbal 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 minutes 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.

4.3.4. 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, 48 cases (16.5%) were eliminated, resulting in a final sample of 252 early adolescents and their parents. For each participant, the remaining missing values were imputed based upon each subject's mean score on the considered measure. 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, acculturation orientations, IC,

internalizing 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 acculturation orientations of immigrant early adolescents. Standardized scores of the Italian and heritage acculturation 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, two series of linear regression models were implemented, one for each outcome (i.e., internalizing and externalizing problems). 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 C) 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 problem behaviors in immigrant youth are a complex phenomenon that can be hardly captured in a single confirmatory model (Roebroeck,

Formisano, & Goebel, 2011). Specifically, we defined two initial models, one for each dependent variable, with discrimination, acculturation orientation clusters, IC, and ethnicity as independent variables. 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, and generation as covariates, since they have been found to influence emotional and behavioral outcomes in migrant youth (see Dimitrova et al., 2016; Kouider et al., 2014). We also used non-verbal IQ as a covariate, since there is evidence showing its impact on IC across developmental stages (Toplak, Sorge, Benoit, West, & Stanovich, 2010). We subsequently selected the best models, separately for each dependent variable, on the basis of the criteria specified above.

4.4. Results

4.4.1. Identification of acculturation orientation profiles

Cluster analysis indicated the presence of three distinct subgroups of early adolescents based on their scores on mainstream and heritage acculturation orientation subscales (see dendrogram in Appendix B). 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 ($F(2, 249) = 165.31, p < .001, \eta^2_p = .57$) and heritage cultural orientation ($F(2, 249) = 136.22, p < .001, \eta^2_p = .52$). The group profiles on the two subscales by means of the *Z*-scores are shown in Appendix B.

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 B).

Generation, gender and ethnicity were equally distributed across groups. In addition, the groups did not differ in terms of age, SES, IQ, discrimination, IC, internalizing or externalizing problems.

4.4.2. Linear regression models

Means and standard deviations for study variables and bivariate correlations are reported in Table 4.1, separately for Moroccan and Romanian immigrant preadolescents. The Akaike weights of all estimated models are presented in Appendix C, separately for internalizing and externalizing problems.

With regard to internalizing problems, the most plausible model was the fifth, with a probability of being the best of .52, largely superior to all other models ($< .30$). This model explained 21% of the variance. All main effects, two-way and three-way interactions included in the final model are reported in Table 4.2. Results indicated that perceived ethnic discrimination was significantly and positively associated with internalizing problems. In addition, we found a significant two-way interaction between acculturation orientation clusters and ethnicity. We explored the interaction in terms of simple effects (De Rosario-Martinez, 2015) via multiple contrasts. Analysis across acculturation orientations showed that the link between acculturation orientations and internalizing problems was not significant for Moroccan immigrants ($F(2, 231) = .42, p = .657$), but it was significant for Romanian early adolescents ($F(2, 231) = 4.21, p =$

.032). Romanians endorsing separation and integration reported the highest and lowest levels of internalizing problems, respectively. No other significant interactions were found.

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 ($<.25$) (Appendix C). 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 4.3. 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 acculturation orientations on externalizing behaviors. However, IC emerged to further moderate the association between discrimination and acculturation 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 4.1, among preadolescent immigrants endorsing separation, the association between discrimination and externalizing problems was positive and statistically significant for those with low levels of IC ($B = 2.04$, $SE = .72$, $p = .006$, $\eta^2_p = .103$), but not for those with high levels of IC ($B = .15$, $SE = .68$, $p = .825$, $\eta^2_p = .001$). By contrast, among assimilated adolescents, the perceived discrimination-externalizing difficulties link was significant for those who showed high levels of IC ($B = 3.18$, $SE = 1.38$, $p = .026$, $\eta^2_p = .123$), but not for those who exhibited low levels of IC ($B = 1.93$, $SE = 1.21$, $p = .119$, $\eta^2_p = .069$).

Table 4.1 Descriptive statistics of study variables for Moroccan ($n = 126$) and Romanian ($n = 126$) immigrants and correlations, separately for ethnic group

	<i>M(SD)</i>	<i>Range</i>	<i>M(SD)</i>	<i>Range</i>	1	2	3	4	5	6
	Moroccans ($n = 126$)		Romanians ($n = 126$)							
1 Discrimination	1.72(.82)	1.00-4.30	1.53(.68)	1.00-4.30		-.20*	.15	.02	.30**	.33***
2 Mainstream Orientation	3.97(.49)	2.67-4.80	3.96(.54)	2.33-5.00	.03		-.28**	.05	-.30**	-.06
3 Heritage Orientation	3.38(.67)	1.65-4.88	3.16(.76)	1.24-4.47	.06	-.13		-.03	.14	.08
4 IC	.04(.17)	-0.30-0.76	.02(.15)	-.32-.60	-.16	-.01	.02		-.04	.06
5 Internalizing problems	5.73(3.44)	0-14	5.75(3.19)	0-14	.31***	-.07	.10	-.12		.41***
6 Externalizing problems	5.96(3.42)	0-15	6.00(3.52)	0-16	.35***	-.01	.16	-.21*	.48***	

Note. Correlation coefficients displayed above the diagonal are for Romanian immigrants, below are for Moroccan immigrants.

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

Table 4.2 Final linear regression model with internalizing problems as dependent variable

<i>Variable</i>	<i>B (SE)</i>	<i>Omnibus F (df)</i>	η^2_p
Socio-Economic Status	-.20 (.11)	3.05 (1,231)	.01
Non-Verbal Intelligence	-.03(.02)	3.52 (1,231)	.02
Generation (Second)	-.71(.44)	2.62 (1,231)	.01
Discrimination	1.00 (.50)	15.43 (1,231) ***	.02
Acculturation orientation clusters		1.63 (2,231)	.03
Assimilated group	-2.77 (1.12)		
Integrated group	-3.03 (1.47)		
IC	6.54 (6.36)	.62 (1,231)	.01
Ethnicity (Moroccan)	-.85 (1.20)	.73 (1,231)	<.01
Discrimination x Acculturation orientation clusters		.95 (2,231)	.01
Discrimination x Assimilated group	.79(.62)		
Discrimination x Integrated group	.35 (.83)		
Discrimination x IC	-4.91(4.06)	.14 (1,231)	.01
Discrimination x Ethnicity (Moroccan)	-.21 (.62)	.01 (1,231)	<.01
Acculturation orientation clusters x IC		2.62 (2,231)	.01
Assimilated group x IC	-6.74 (7.36)		
Integrated group x IC	1.95 (11.18)		
Acculturation orientation clusters x Ethnicity (Moroccan)		3.17 (2,231)*	.03
Assimilated group x Ethnicity (Moroccan)	1.36 (.89)		
Integrated group x Ethnicity (Moroccan)	3.51 (1.53)		
IC x Ethnicity (Moroccan)	-12.23 (7.27)	.29 (1,231)	<.01
Discrimination x Acculturation orientation clusters x IC		2.13 (2,231)	.02
Discrimination x Assimilated group x Ethnicity (Moroccan)	6.39 (4.80)		
Discrimination x Integrated group x Ethnicity (Moroccan)	-7.27 (6.46)		
Discrimination x IC x Ethnicity (Moroccan)	7.58 (4.75)	2.55 (1,231)	.01

Note. $n = 252$. Baseline category for Ethnicity was Romanian. Baseline category for Acculturation orientation clusters was the separated group. Baseline category for Generation was First Generation. $R^2 = .21$. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4.3 Final linear regression model with externalizing problems as dependent variable

<i>Variable</i>	<i>B (SE)</i>	<i>Omnibus F (df)</i>	η^2_p
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
Acculturation 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 x Acculturation orientation clusters		3.53 (2,233)*	.03
Discrimination X Assimilated group	1.51 (.60)		
Discrimination X Integrated group	.36 (.75)		
Discrimination x IC	-8.30 (3.94)	.05 (1,233)	.02
Discrimination x Ethnicity (Moroccan)	-.98 (.60)	1.35 (1,233)	.01
Acculturation orientation clusters x IC		2.23 (2,233)	.02
Assimilated group x IC	-7.94 (7.22)		
Integrated group x IC	17.17 (10.60)		
IC X Ethnicity (Moroccan)	-21.99 (7.09)	3.02 (1,233)	.04
Discrimination x Acculturation orientation clusters x IC		6.26 (2,233)**	.05
Discrimination x Assimilated group x IC	7.99 (4.70)		
Discrimination x Integrated group x IC	-15.61 (6.29)		
Discrimination x IC x 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. Baseline category for Cultural orientation clusters was the separated group. $R^2 = .29$.

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

Among integrated immigrant youth, IC did not significantly moderate the discrimination-externalizing difficulties association, neither at low ($B = 16.65$, $SE = 10.52$, $p = .148$, $\eta^2_p = .217$) nor at high levels ($B = -2.48$, $SE = 19.48$, $p = .903$, $\eta^2_p = .003$). Finally, a three-way statistically significant interaction emerged among discrimination, IC, and ethnicity. As depicted in Figure 4.2, in the face of discrimination, low levels of IC were associated with more externalizing problems for Romanian ($B = 1.98$, $SE = .85$, $p = .024$, $\eta^2_p = .081$), but not for Moroccan ($B = .62$, $SE = .67$, $p = .356$, $\eta^2_p = .016$) early adolescent immigrants. In contrast, the association between perceived discrimination and externalizing symptoms was not statistically significant for either Moroccan ($B = -.14$, $SE = .98$, $p = .888$, $\eta^2_p = .001$) or Romanian immigrants ($B = .21$, $SE = .72$, $p = .767$, $\eta^2_p = .001$) at high levels of IC.

Figure 4.1 The interaction effect of perceived ethnic discrimination and IC on externalizing problems for: a) Separated adolescents; b) Assimilated adolescents; c) Integrated adolescent ($n = 252$). IC was divided into two levels based on median: low = below median; high = above median.

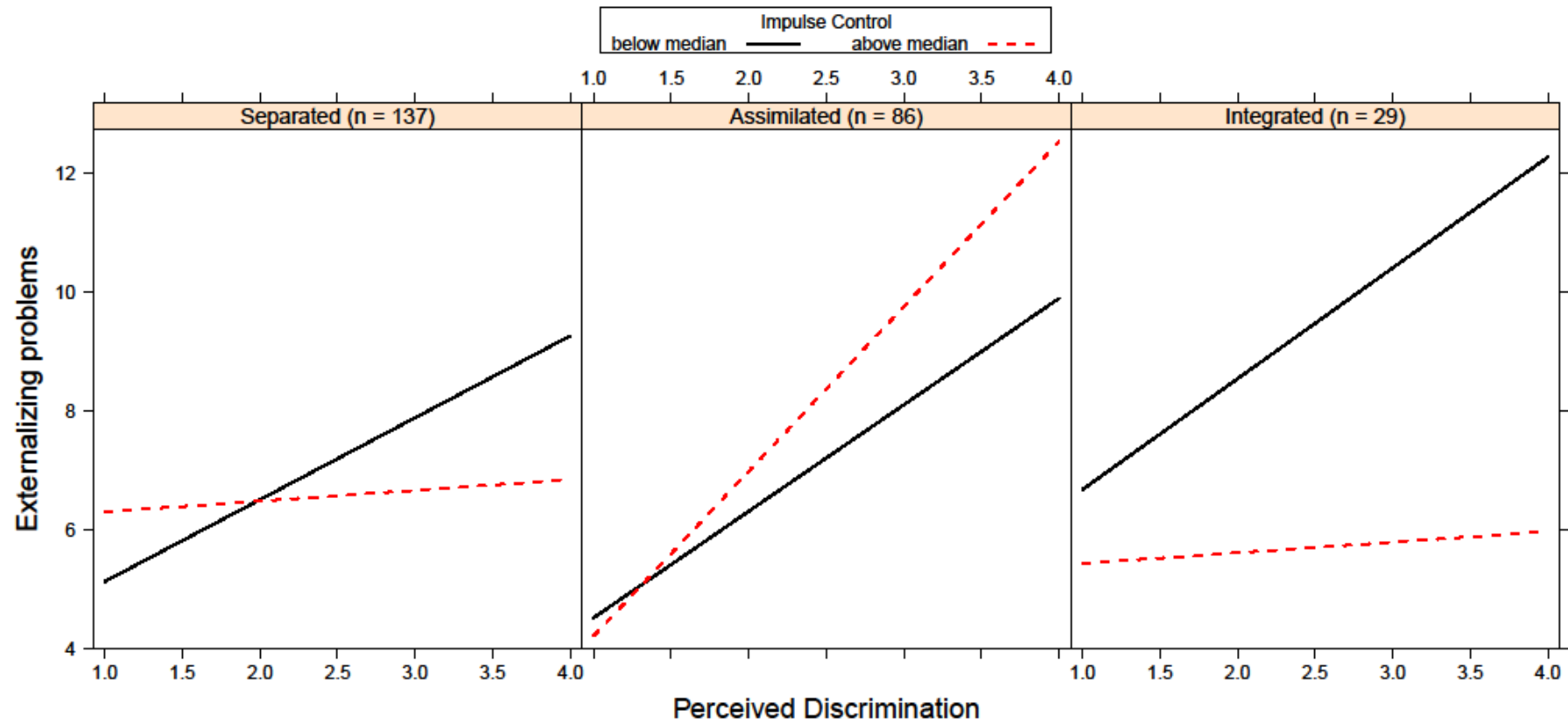
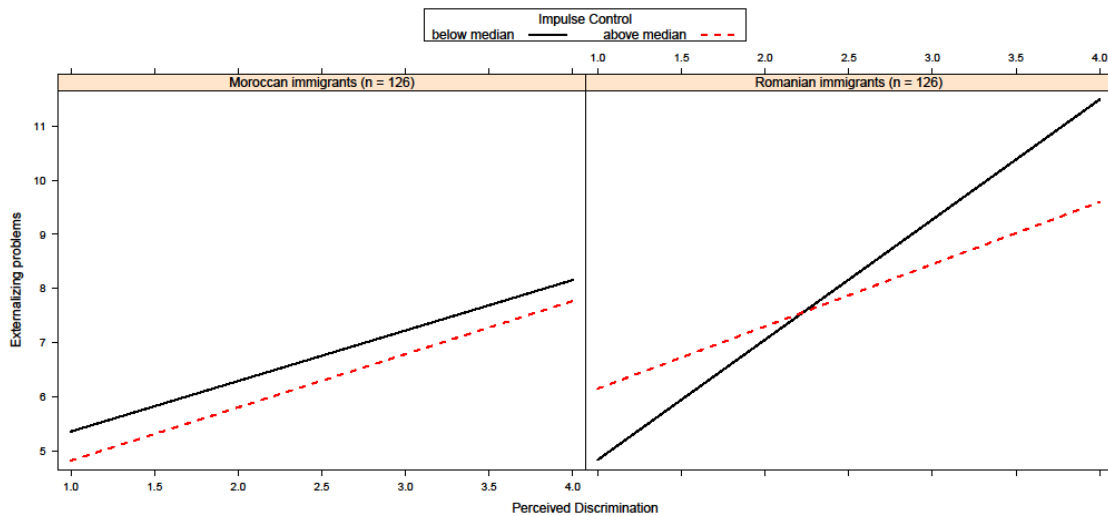


Figure 4.2 The interaction effect of perceived ethnic discrimination and IC on externalizing problems for: a) Moroccan; b) Romanian immigrant adolescents ($n = 252$). IC was divided into two levels based on median: low = below median; high = above median.



4.5. Discussion

This study examined preadolescent immigrants' acculturation orientations (separation, assimilation, and integration) and levels of IC (high vs low) as potential moderators of the association between perceived discrimination and internalizing and externalizing problems. We also considered the role of ethnicity in these relationships by focusing on Moroccan and Romanian youth, two nationalities that are largely underrepresented in the North American literature but which are part of the most sizeable immigrant groups in the European context.

Perceived discrimination was found to be an important contributor to both internalizing and externalizing difficulties. Such a result is in line with the extensive literature showing the strong and direct negative influence of ethnic discrimination on socio-emotional adjustment (Fueller-Rowell, Evans, & Ong, 2012; Stevens, Vollebergh, Peels, & Crijnen, 2005a; Stevens, Vollebergh, Peels, & Crijnen, 2005b; Yip, 2014) across different ethnic groups (Pascoe & Smart Richman, 2009). However, perceived

discrimination was found to interact with other personal variables in predicting problem behaviors. The findings for internalizing and externalizing difficulties differed in that the hypothesized moderating effects were found only for externalizing difficulties, thus indicating that a more differentiated picture of the effects of discrimination can be obtained by including specific measures of psychological functioning. However, the lack of significant moderating effects in the association between discrimination and internalizing problem behaviors may also be due to the reliance on parent-reports, given that parents are generally more accurate in reporting their children's more visible externalizing rather than internalizing behaviors (Achenbach, McConaughy, & Howell, 1987).

Discrimination and acculturation orientations significantly interacted with IC in links with externalizing problems. The fact that this interaction was not significant in links with internalizing problems is not surprising and is in line with our hypothesis, given the centrality of IGT performance for externalizing rather than internalizing problems (Romer et al., 2009).

Specifically, lower levels of IC represented a risk factor, but only for separated adolescents. 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. In contrast, a paradoxical effect of IGT performance emerged for those preadolescents who endorsed assimilation, such that in the context of high perceived discrimination, higher levels of IC represented a risk factor. Previous research has shown that early 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

(Umana-Taylor & Updegraff, 2007). This greater distress may have more impact on adolescents with better IGT performance given that they are more sensitive to affective cue influences, which may bias them towards endorsing more risky behaviors. Indeed, preliminary findings suggest that individuals with better IGT performance show worse behavioral outcomes in the context of emotional distress in clinical samples of both children and adults (Garon, Moore, & Waschbusch, 2006; Wardle, Gonzalez, Bechara, & Martin-Thormeyer, 2010).

Such paradoxical effects may be due to individual differences in awareness linked to the emotional activation during the task (Garon et al., 2006; Wardle et al., 2010). Other intervening psychological factors (e. g. personal meaning, motivation, preoccupation about the future) may explain a different degree of emotional activation across acculturation strategies. Indeed, mounting evidence points to the role of contextual and motivational influences on IGT performance (Albert & Steinberg, 2011; Okdie, Buelow, & Bevelhymer-Rangel, 2016). However, further research is needed before we can draw any firm conclusions from these preliminary findings.

Interestingly, no significant interactions emerged for integrated adolescents. It can be argued that IC is less salient for bicultural adolescents, who can count on the support and protective role of both heritage and mainstream groups. However, given the small sample of integrated adolescents in our study, results should be interpreted with caution. The fact that integration emerged to be the least preferred acculturation strategy in our preadolescent sample may be linked to the specific developmental stage considered, but it may also be indicative of a general lack of integration policies at school and more broadly at the societal level in Italy. Future studies may assess mainstream early adolescents' orientations to get to a more complete understanding of acculturative processes. Indeed, adaptation is the result of the acculturation processes of both host

majority and immigrant groups as influenced by state integration policies (Bourhis, Moise, Perreault, & Senecal, 1997).

In addition, the moderating effect of IC appeared to vary across ethnic groups, again only in links with externalizing difficulties. A scarce IGT performance emerged to have a detrimental effect only for Romanian immigrants. Romanian immigrants, as opposed to the visible Moroccan minority, are an immigrant minority with a reduced cultural distance from the mainstream Italian culture. It could be argued that Romanian early adolescents are less prepared than their Moroccan counterparts to be discriminated because of their ethnic origin, thus being 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.

Another possible explanation lies in the meanings and motivations elicited by the gambling task, which have been shown to vary across different ethnic groups. Gambling behaviors and economic investment are highly discouraged among Islamic cultures (Jacoby, von Lersner, Schubert, Leoffler, Heinz, & Mörsen, 2013; Raylu & Oei, 2004), whereas economic and academic success are emphasized among Romanian immigrants (Robila, 2009). In addition, recent studies suggest that IGT performance as well as decision-making abilities are influenced by contextual and motivational aspects (Albert & Steinberg, 2011; Okdie et al., 2016), thus pointing to the need to further test the validity of this measure across ethnic groups and across clinical and normative adolescent populations (Okdie et al., 2016; Steingroever, Wetzels, Horstman, Neumann, & Wagenmakers, 2013). Given the many cultural and contextual factors involved in our sample, it could be that this task triggered different motivational and personal meanings across groups.

No statistically significant interaction emerged among discrimination, acculturation orientations and ethnic background, suggesting that the relationship between perceived discrimination and acculturation orientations in links with problem behaviors does not vary as a function of ethnicity. It may be argued that the impact of cultural differences on the discrimination-acculturation link becomes less salient in the Italian assimilationist society, due to the common perception of immigrants and of their acculturation strategies by the mainstream society regardless of ethnic origin (Kosic, Mannetti, & Sam, 2005).

4.5.1. 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 immigrant adolescents' acculturation process as well as internalizing and externalizing difficulties.

Second, although recent evidence suggests that immigrant adjustment varies according to generational status (Dimitrova et al., 2016; Kouider et al., 2014), sample size concerns did not allow us to test whether generational status could further moderate the associations among our variables in this group of immigrants. Future studies drawing on larger samples should address this issue.

Third, the role of parents' acculturation orientations has not been taken into consideration. Given that parent-child acculturation 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.

Last, IC was assessed by means of one single behavioral measure, raising doubts as regards its validity across ages and ethnicities. Future studies using different tasks and measurement tools to assess IC are needed as to shed light on this issue.

In spite of these limitations, our study uniquely contributes to advancing research on immigrant youth in several ways.

First, we integrate separate research traditions (i.e., developmental psychology, acculturation research, and clinical neuropsychology) to better understand the risk and protective factors involved in the effects of discrimination on preadolescent immigrants' psychological adjustment.

Second, we focus on early adolescence, a developmental stage which has been often overlooked especially in acculturation and migration studies, despite being a crucial time for the emergence of internalizing and externalizing problems and for self-development.

Third, we include immigrant 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.

Fourth, we rely on a specific bi-dimensional measure of acculturation tapping both identity and behavioral domains, and adopt a person-centered approach which provides a more accurate and complex picture of early adolescents' acculturation preferences.

The present study provides useful implications for policy and research concerning immigrant early adolescents' adjustment. Given the crucial negative impact of discriminatory experiences on youth's mental health, it becomes necessary at an

institutional level to work for dismantling discriminatory policies and promote inter-cultural contact and a more positive social climate. In this sense, schools may represent an important target for intervention during early adolescence.

At the individual level, our findings suggest that a combination of personal cognitive (e.g., IC) and cultural (e.g. acculturation strategies) factors matter in coping with discrimination. Professionals should explore the acculturation strategies immigrant youngsters use to deal with discrimination and the role of IC in their use of these strategies. For example, it might be helpful to explain students the benefits and costs associated with the use of separation/assimilation.

More broadly, at the societal level policies favoring integration should be implemented to reduce the risks associated with endorsing uniquely 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 migrant groups.

Despite the exploratory nature of the present study, our results point to the need for scholars to further investigate the complex interplay among ethnic discrimination, acculturation orientations and IC in immigrant early adolescents. Broadening our understanding of how different individual factors interact to reduce or increase the negative impact of ethnic discrimination on youth’s adaptation is crucial as to implement interventions in a prevention-oriented effort.

CHAPTER 5

Study 3: Parental practices, executive functions, and emotional and behavioral problems in Chinese immigrant and non-immigrant early adolescents

5.1. Abstract

This study aimed to examine whether the association between parental practices and emotional and behavioral problems depends on levels of executive functions (EFs). In addition, we tested if these associations vary as a function of ethnic background. Participants were 97 Chinese immigrant and 165 non-immigrant Italian youths aged 11-13 years (52% girls) and their parents. A combination of self and parent-report questionnaires as well as performance tasks were used. Regression analyses indicated that higher levels of perceived positive parenting and better working memory capacity were independently associated with fewer problems, regardless of ethnic background. Across ethnicities, poor parental supervision was linked to increased emotional and behavioral difficulties, but only for preadolescents with low levels of inhibitory control. In addition, the strength of the association between poor parental supervision and problem behaviors was enhanced by more cognitive flexibility, but only among Chinese early adolescents. Such findings underscore the importance of different components of EFs in moderating the relation between parenting and emotional and behavioral problems in early adolescence, and point to the importance of situating cognitive functioning in socio-cultural context.

Keywords: parental supervision, positive parenting, executive functions, early adolescents, Chinese immigrants, model selection

5.2. Introduction

The impact of parental practices on youths' psychological adjustment has been extensively documented (Lansford et al., 2016). However, research indicates that the effects of specific parental practices may differ across contexts and developmental levels. Indeed, parental practices are guided by specific socialization goals and values which consistently vary across cultures and ethnic groups (Chen, Liu, & Li, 2000; Pardini, Fite, & Burke, 2008; Wang, Pomerantz, & Chen, 2007). In addition, recent evidence highlights the crucial role of parenting during early adolescence, when issues of autonomy and independence begin to arise, and increasing time is spent away from home (Kim, Wang, Shen, & Hou, 2015).

Given the many challenges and transitions typically faced during this phase, early adolescence also represents a critical time for the onset and development of emotional and behavioral problems (Andersen & Teicher, 2008; Dahl, 2004), especially for immigrant youth (Dimitrova, Chasiotis, & van de Vijver, 2016; Kouider, Koglin, & Petermann, 2014). In particular, findings indicate that during early adolescence parental supervision starts to become crucial for preventing the manifestation of problem behaviors, whereas the importance of positive parenting decreases due to the growing importance of peers rather than parents for one's identity formation (Laird, Pettit, Bates, & Dodge, 2003; Menting, Van Lier, Koot, Pardini, & Loeber, 2016).

Since emotional and behavioral difficulties in early adolescence are a major public health concern (World Health Organization, 2011), identifying individual and contextual correlates of such difficulties is crucial to detect potential protective and risk factors which may guide the implementation of effective intervention programs with youths in multicultural settings (Zhou, Tao et al., 2012).

The present study aimed to investigate how parental supervision and positive

parenting impact on Chinese immigrant and Italian non-immigrant early adolescents' emotional and behavioral problems. Specifically, we sought to examine whether EFs moderate the parenting-problem behavior link across these two different ethnic groups.

We focused on Chinese immigrants because in the European context, Italy is among the countries with the largest Chinese population (Latham & Wu, 2013). Moreover, the cultural distance between mainstream and heritage cultures is maximized in Chinese families, rendering parenting especially salient for the study of immigrant adaptation (Chen, Hua, Zhou, Tao, Lee, Ly, & Main, 2014; Ho, 2014).

5.2.1. Parental practices and emotional and behavioral problems

To date, most research on parenting with adolescents has focused on parenting styles, highlighting the positive influence of an authoritative parenting and the negative influence of an authoritarian style on youths' socio-emotional adjustment (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Piko & Balázs, 2012). However, these broad categories have been defined on the basis of Western values and may not apply to non-Western cultures, such as Asian populations (Bornstein, 2013; Kim et al., 2015). In addition, the focus on broad parenting styles rather than specific parental behaviors and practices may be less informative about universal and culture-specific mechanisms linking parenting to psychological adjustment.

The current study focused on parental supervision and positive parenting as two specific parental practices which are among the most common targets of intervention and prevention programs with parents (Chu, Bullen, Farruggia, Dittman, & Sanders, 2015; Dishion & McMahon, 1998). Parental supervision refers to parental knowledge and management of children's activities and whereabouts, while positive parenting concerns parents' use of positive reinforcement and praise with their children (Dishion

& McMahon, 1998).

Extensive evidence shows that youths raised by parents who exhibit low levels of supervision and positive reinforcement are at increased risk of problem behaviors in both clinical and community adolescent samples (Hoeve, Dubas, Eichelsheim, Van der Laan, Smeenk, & Gerris, 2009; Menting et al., 2016). However, the extent to which a lack of supervision and of positive parenting may represent risk factors for the onset of emotional and behavioral problems during early adolescence is less clear. Most studies reporting a robust association between parental practices and problem behaviors focused either on positive or on negative parenting dimensions (Parent, McKee, Rough, & Forehand, 2016). Yet, when both parental supervision and positive parenting were considered simultaneously in the same model, only a lack of parental supervision was found to be significantly associated with more emotional and behavioral difficulties during late childhood and early adolescence (Menting et al., 2016; Parent et al., 2016).

Indeed, mounting evidence points to a stronger impact of positive parenting on children's adjustment earlier during development (Pardini et al., 2008). Overall, these findings provide support for the growing importance of parental monitoring and supervision in the transition to adolescence, whereas the salience of positive parenting tends to decrease due to children's gains in independence and to the increasing amount of time spent with peers outside the family environment.

In this paper, we draw on a recently proposed model by Zhou, Tao et al. (2012) to study Asian minorities' adaptation. According to this model, proximal contextual factors (e.g., parenting) might interact with both cultural (e.g., ethnic background, immigrant status) and personal (e.g., EFs) variables to explain youths' psychological adjustment. In line with this theoretical model, in the present study we postulate that the association between parental practices and problem behavior would depend on levels of

EFs. In addition, we test if these associations vary as a function of ethnic background, as to shed light on common and culture-specific influences on adaptation (Zhou, Tao et al., 2012).

5.2.2. The moderating roles of EFs and ethnic background

Extensive evidence shows that children and adolescents with better self-regulatory capacities are less likely to engage in emotional and behavioral problems (Dishion, 2016; Hughes, & Ensor, 2011; Luciana, 2016; Pratt & Cullen, 2000), and that EFs represent an important point of entry for intervention efforts with youth in diverse contexts (Blair, 2016). EFs are adaptive, top-down brain processes governed by the prefrontal cortex region of the brain and enable individuals to override more automatic or established thoughts and responses as to implement goal-directed behaviors (Mesulam, 2002). EFs overlap with the concept of self-regulation (Zhou, Chen, & Main, 2012) and encompass three separate, but related sub-domains: working memory, inhibitory control, and cognitive flexibility (Miyake & Friedman, 2012).

EFs have been recently theorized as possible moderating mechanisms explaining variation in psychological and socio-cultural outcomes (Hofmann, Schmeichel & Baddeley, 2012; Li-Grining, 2012), that is, better self-regulatory capacities could overall interact with other culturally relevant personal factors in explaining social and emotional outcomes. Most studies on self-regulation involved infants and toddlers, generally including a single subcomponent of EFs or a composite score. Overall, results support the idea of EFs as potentially protective factors in the link between environmental-familial functioning and problem behavior (Li-Grining, 2012; Menting et al., 2016; Zhou, Tao et al., 2012).

Across studies, inhibitory control has been the most widely investigated

component of EF in links with parenting and emotional and behavioral problems, showing that better capacities represent a protective factor in the face of stressful conditions (Bernier, Carlson, & Whipple, 2010; Menting et al., 2016; Moffitt et al., 2011). In contrast, less is known about working memory and cognitive flexibility.

Salari, Bohlin, Rydell, and Thorell (2016) found that lower working memory capacity and inhibitory control and more inconsistent parenting were each significantly associated with more externalizing symptoms in a sample of community adolescents, but the interaction between parenting and EFs was not included in the model. In addition, the authors did not use a measure of cognitive flexibility. Sarsour, Sheridan, Jutte, Nuru-Jeter, Hinshaw, and Boyce (2011) considered all three subcomponents of EFs, and found that family composition and socio-economic status were associated with both inhibitory control and cognitive flexibility in a sample of school-aged children from diverse socio-economic backgrounds, but not with working memory. However, they did not include a measure of psychological adjustment.

In addition, different results may be linked to the age-dependent association of EFs with both parenting and problem behavior, such that the predictive value of each subcomponent may change according to developmental stage (Salari et al., 2016). Although preliminary evidence suggests that EFs may become more differentiated over time, starting from early adolescence (Shing, Lindenberger, Diamond, Li, & Davidson, 2010), research using behavioral measures to assess the three separate components of EFs in early adolescence is still lacking, and even less is known about how these components would interact with parental supervision and positive parenting.

Menting et al. (2016) reported preliminary evidence showing that in a poor social and familial environment, lower self-control and lower intelligence were associated with an increased probability of developing disruptive behaviors in a diverse sample of

at risk boys in the US. The authors suggested that when there is no parental control to compensate for the increased cognitive risk, the negative effect of both factors on problem behavior is exacerbated. However, the role of ethnic background was not taken into account. Hence, it is not clear how such findings would generalize to community samples of boys and girls from different migration and ethnic backgrounds.

Given the growing number of migrant youths worldwide, scholars highlight the importance of situating minority and immigrant youngsters' self-regulation in sociocultural context (Li-Grining, 2012; Zhou, Tao et al., 2012). Although differences in ethnic background are unlikely to modify the direction of the relation between parenting, EFs and adjustment, these differences may impact on the strength of these associations (Wang et al., 2007; Zhou, Tao et al., 2012).

Yet, scant research has investigated the relationship among parenting, EFs and preadolescents' adjustment across different ethnic groups living in the same receiving society. In addition, the few available studies were mostly conducted with American or ethnic minority samples in the US, thus compromising the generalizability of findings to other countries.

For example, Pardini et al. (2008) found no significant differences in parental supervision and positive reinforcement between African-American and Caucasian youth. However, their study did not address the potential moderating role of EF. Liu and Chang (2016) investigated parental control in links with obedience in adolescents Taiwan and found a moderating role of EFs. However, their focus was exclusively on aspects of parental control, and they relied on a single self-report measure to assess global aspects of EFs. Furthermore, their study involved only mainstream adolescents, thus not making it possible to test for the moderating role of ethnicity.

Only comparisons of parental practices between different ethnic groups allow to

detect the universal and culturally specific effects of parental behaviors on youth's adaptation. As a matter of fact, parent-child relationships are more interdependent for Chinese families than for Italian ones, and it is possible that the impact of parenting on child behaviors may be stronger for Chinese immigrant preadolescents (Chen et al., 2000; Kawabata, Alink, Tseng, van Ijendoorn, & Crick, 2011).

The moderating role of inhibitory control and cognitive flexibility may also be stronger for Chinese immigrants. Indeed, given the typical Chinese parental expectations of hard work, self-discipline, and obedience, the dimension of self-control has been found to be crucial among Chinese youth (Qu, Shan, Yip, Li, & Zelazo, 2012). Flexibility has been recently theorized as a crucial aspect of immigrants' adaptation especially at the entry in adolescence, due to the exposure of immigrant youth to diverse social and cultural contexts and the subsequent need to adapt one's behaviors according to different social demands (Fuligni & Tsai, 2015).

Yet, to the best of our knowledge, the complex interplay among positive and negative parental practices, EFs, and emotional and behavioral problems has not been systematically addressed in Chinese immigrant and national non-immigrant early adolescents.

5.2.3. The present study

The current study aimed to investigate the impact of poor parental supervision and positive parenting on problem behavior in Chinese immigrant and national non-immigrant early adolescents, postulating the moderating role of EFs (i.e., working memory, inhibitory control, and cognitive flexibility). To reduce shared method variance, early adolescents' EFs were assessed using behavioral measures, whereas parenting practices and youth problem behaviors were assessed by means of parent

reports.

Based on extant research, we anticipated that high levels of poor parental monitoring and low levels of positive parenting would be associated with more emotional and behavioral difficulties (Hoeve et al., 2009; Laird et al., 2013; Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). However, we expected these links to be moderated by levels of EFs and ethnic background.

Specifically, we hypothesized that higher inhibitory control and higher cognitive flexibility would buffer the negative effects of poor supervision and scarce positive parenting on problem behavior (Menting et al., 2016; Zhou, Tao et al., 2012), and that this buffering effect would be more relevant among Chinese immigrant than Italian non-immigrant early adolescents (three way interaction between parental practices, EFs and ethnic background). This hypothesis was based upon prior evidence of the crucial role of these cognitive abilities for Chinese immigrant early adolescents (Fuligni & Tsai, 2015; Qu et al., 2012; Wang et al., 2007). In addition, the more interdependent nature of family relationships linked to Chinese cultural values may confer greater value to the parental role in this ethnic group (Kawabata et al., 2011). Conversely, we hypothesized that scarce inhibitory control and cognitive flexibility capacities would increase the detrimental effect of negative parenting practices on emotional and behavioral difficulties, representing a risk factor especially for Chinese immigrant early adolescents.

Given the lack of studies on the role of working memory in links with parental practices and emotional and behavioral difficulties in cultural context, no a priori hypotheses were formulated in this regard.

5.3. Method

5.3.1. Participants

Participants were recruited in the north and central regions of Italy and were part of a larger study on early adolescents' socio-emotional adjustment. The sample included 97 Chinese immigrant (58.8% girls; 26.8% first-generation), and 165 non-immigrant Italian preadolescents (48.5% girls) and their parents. Participants were aged between 11 and 13 years. The mean age was 12.35 ($SD = .75$), and 12.19 ($SD = .82$) for Chinese and non-immigrant Italian youth, respectively. On average, first-generation Chinese immigrants had been residing in Italy for $M = 5.35$ years ($SD = 2.98$, range 2-12). Among parents, 194 mothers (74%) completed the questionnaire, while the remaining 68 (26%) were fathers. The majority (93.5%) of adolescents were from two-parent families, whereas 5% were from single-parent (including never married, divorced, or widowed) families. Four parents (1.5%) did not report on their marital status. All Chinese immigrant families came from the Zhejiang region of China.

In terms of socioeconomic status (SES), Chinese immigrant and national adolescents reported a medium level as assessed via the Family Affluence Scale (FAS; Currie, Molcho, Boyce, Holstein, Torsheim, & Richter, 2008) ($M = 4.80$, $SD = 1.92$, range 1-9; $M = 5.59$, $SD = 1.70$, range 1-9; respectively). Significant differences in SES were found across groups $F(1,260) = 11.98$, $p < .001$, $\eta^2_p = .04$, so that national non-immigrants reported a higher socio-economic status compared to their immigrant peers. Gender and age were balanced across the two groups. The study protocol and procedures were approved by the Ethics Committee of the School of Psychology, University of Padova (protocol #1473-2014).

5.3.2. Procedure

Data were collected between January 2015 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 preadolescents were asked for additional verbal consent.

Eligibility criteria were as follows: (a) the child was between 11 and 13 years old; (b) the child lived with at least one of her/his biological parents, (c) both parents were born in Italy (for national non-immigrants), (d) the child was either first generation (born outside Italy) or second generation (born in Italy with at least one foreign-born parent) (for immigrants). Consistent with the European Commission guidelines, in this study the term “immigrant” refers to first (foreign born) and second generation (born in Italy from at least one foreign born parent) immigrants, whereas all subsequent generations (rarely found in Europe) are not covered (Kouider et al., 2014). Data collection with early adolescents took place at school. Each participant 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 Chinese immigrant and non-immigrant samples were 61% and 85%, respectively.

Immigrant parents could decide to complete the questionnaires either in their native or in Italian language. Overall, only 11 (11.3%) immigrant parents completed the questionnaires in the Italian language, whereas the remaining 86 (88.7%) preferred to complete them in their native language. All parents completed the questionnaires at home. Early adolescents were tested in Italian in two separate sessions of approximately 45 minutes each within a week-time distance. The assessments consisted of

questionnaires, performance and computer-based tasks. In the first session, adolescents completed the Raven's Standard Progressive Matrices and the Peabody Picture Vocabulary Test, followed by a set of self-report measures. Participants' EFs were assessed during the second session on a laptop computer with E-Prime 2 software (Schneider, Eschman, & Zuccolotto, 2007). For each task, the participant and experimenter were seated side by side at a table. All questionnaires and verbal instructions 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.

5.3.3. Measures

Parental practices. The Alabama Parenting Questionnaire – Parent version (APQ; Frick, 1991) was used as a measure of parenting practices. It consists of 35 items assessing five parenting constructs: parental involvement (10 items; e.g., "You play games or do other fun things with your child?"), positive parenting (6 items; e.g., "You let your child know when s/he is doing a good job with something"), parental poor monitoring and supervision (10 items; e.g., "Your child stays out in the evening past the time he/she is supposed to be home"), inconsistent discipline (6 items; e.g., "You threaten to punish your child and then do not actually punish him or her"), and parental use of corporal punishment (3 items; e.g., "You spank your child with your hand when he s/he has done something wrong"). Parents rate the frequency of their behaviors at home on a 5-point Likert scale (1 = never to 5 = always). High scores are interpreted

differently depending on the scale. In the present study we focused on the poor supervision and positive parenting scales, with higher scores indicating inefficient supervision and adequate reinforcement, respectively. The APQ has been translated in several languages, included Chinese and Italian, showing good psychometric properties (Benedetto & Ingrassia, 2012; Esposito, 2011; Guo, Morawska, & Sanders, 2016; Lau, Fung, Ho, Liu, & Gudiño, 2011). Internal consistency (Cronbach Alpha and McDonald's Omega; Green & Yang, 2009) of the positive reinforcement subscale were $\alpha = 0.87$ and Omega = 0.87, whereas for the poor supervision subscale were $\alpha = 0.72$ and Omega = 0.71 for Chinese immigrant. For non-immigrant Italian parents, reliabilities for the positive reinforcement and poor supervision subscales were $\alpha = 0.75$ and Omega = 0.77 and $\alpha = 0.70$ and Omega = 0.69, respectively.

Executive functions. As a measure of working memory, participants completed the digit span subtest of the WISC-IV (Wechsler, 2003). In the “forward” condition, preadolescents were instructed to listen to and then repeat increasingly longer strings of digits presented at approximately 1 second intervals. Two trials were administered at each string length. Digit backward was administered in the same fashion, but participants were required to repeat the digits in the reverse order. If a participant erred on both trials of a string length, the test was ended; otherwise the string length was increased by one. The raw scores for each subtest reflected the highest number of digits repeated in the correct order. The Italian version of this subtest has been validated by Orsini, Pezzuti and Picone (2012), showing good psychometric properties. The standard score was used, with higher scores indicating better performance.

The Hearts and Flowers version of the Dots Task (Davidson, Amso, Anderson, & Diamond, 2006) was used in the present study as a measure of inhibitory control and cognitive flexibility. The task consisted of three blocks of 20 trials each. Each of the

first two blocks started with a block of four practice trials. Prior to the third block, no practice trials were presented. In the first block, a red heart was presented either at the left or right on the screen on each trial. The instructions were to press a key on the same side as the heart was shown as quickly and accurately as possible (congruent block, baseline). In the second block, a red flower was presented to the left or right. The instructions in this block were to press the key on the opposite side to where the flower was shown (incongruent block, inhibitory control). The third block (mixed block, cognitive flexibility) included randomly presented hearts and flowers, to the left or right, with the instructions to press on the same side when a heart was shown and to press on the opposite side when a flower was shown. The response button for the left side was the 'z' key on the computer keyboard, and the response button for the right side was the 'm' key. For each block, instructions were presented on the computer screen and read aloud by the researcher. The trial sequence of events started with a fixation cross for 500ms, after which the task stimulus (heart or flower) was then shown for 750ms, resulting in a total trial duration of 1250ms.

Performance on the task was assessed by both accuracy (% correct responses) and RTs (on correct trials). All RTs shorter than 200ms were considered anticipatory responses and therefore removed from data analysis. Aggregates were calculated only for the subjects who did not fail the practice blocks (75% correct trials) and when at least 75% of overall trials were useable (95.8% of valid cases, see paragraph on data analysis).

In order to control for baseline RTs, we created a difference score by subtracting the median RT on the congruent block from the median RT on the incongruent and mixed blocks, yielding a measure of RTs for inhibitory control and cognitive flexibility, respectively. The median RT, rather than the mean value, was used to reduce the effect

of outlying RTs. Next, we created a composite index by treating RT and accuracy as two indicators of a latent performance construct, separately for each block. First, we scaled both variables in the same direction, so that higher scores corresponded to better performance in each variable. Then, we conducted analyses on the average of the z scores for the RT and accuracy variables, separately for the two blocks, yielding a composite score for inhibitory control and cognitive flexibility, where higher scores correspond to better abilities (Salthouse & Hedden, 2002).

Emotional and behavioral problems. Early adolescents' psychological difficulties were assessed by means of the parent version of the Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman, Meltzer, & Bailey, 1998). The SDQ is a brief and widely used behavioral screening questionnaire. It consists of 25 items divided between five scales of five items each, generating scores for Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behavior; all scales but the last are summed to generate a Total Difficulties score. In the parent 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 measure has been used in many countries worldwide and was validated in Chinese and Italian languages, showing good psychometric properties (Di Riso, Salcuni, Chessa, Raudino, Lis, & Altoè, 2010; Du, Kou, & Coghill, 2008; Marzocchi et al., 2004). In the present study, the Total Difficulties score was used. Further information about sample items, scoring, reliability and convergent validity can be found on www.sdqinfo.com. In our samples, Cronbach alphas were 0.77, and 0.73, whereas Omegas were 0.78, and 0.74 for Chinese immigrant and non-immigrant parents, respectively.

Control variables

Age, gender, ethnicity, and nativity. Both children 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 socio-economic position for children and adolescents. It includes four items concerning material affluence: ‘Does your family own a car?’ (0, 1, 2 or more); ‘How many times did you travel away on holiday with your family during the past 12 months?’ (0, 1, 2, 3 or more); ‘Do you have your own bedroom for yourself?’ (no = 0, yes = 1); and ‘How many computers does your family own?’ (0, 1, 2, 3 or more). 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, including the Italian context (Andersen, Krolner, et al., 2008; Vieno, Santinello, Lenzi, Baldassari, & Mirandola, 2009).

Non-verbal 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 adolescent 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 minutes 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 Chinese adolescents was $M = 109.20$, $SD = 11.23$, whereas non-immigrants scored on average $M = 106.47$, $SD = 11.35$.

Italian receptive vocabulary. Early adolescents were administered the Peabody

Picture Vocabulary Test – Revised (PPVT-R; Dunn & Dunn, 1981), one of the most commonly used standardized tests of vocabulary, which demonstrated good psychometric properties (Dunn & Dunn, 2007). This is an individually administered, untimed test of receptive vocabulary that uses a multiple-choice non-verbal response format. The participant must select one among four pictures that best represents an orally presented stimulus word. Approximately, the average time required for completion is of 15 minutes. In the present research, the Italian standardized version was used (Stella, Pizzoli & Tressoldi, 2000). The average raw score for Chinese immigrants was $M = 116.61$, $SD = 30.12$, whereas non-immigrants scored on average $M = 158.45$, $SD = 12.78$.

5.3.4. 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, 12 cases (4.20%) were eliminated. Another 12 cases (4.20%) were eliminated because their performance on the Hearts and Flowers task was invalid (i.e., failed practice block or less than 75% of valid trials), resulting in a final sample of 262 early adolescents and their parents. The remaining missing values were imputed for each subject based upon each subject's mean score on the considered measure. 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 parenting, EFs, and problem behaviors were assessed using Pearson's correlations, separately for the Chinese immigrant and non-immigrant samples.

At the multivariate level, a linear regression model 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 D) was adopted, using the stepAIC function of the package MASS (Hastie & Pregibon, 1992; Venables & Ripley, 2002). We relied on an exploratory rather than confirmatory model selection approach, based on the assumption that problem behaviors are a very complex phenomenon that can hardly be captured in a single confirmatory model (Roebroeck, Formisano, & Goebel, 2011).

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).

Specifically, we defined an initial model with parental practices (i.e., poor supervision and positive parenting), EFs (i.e., working memory, inhibitory control, and cognitive flexibility), and ethnicity as independent variables. To assess moderating effects, all two-way and three-way interactions between parental practices, EFs and ethnicity were included in the model. In addition, the interaction between poor monitoring and positive parenting, and all two-way interactions among EFs were included. We also included age, gender and socio-economic status as covariates, since they have been found to influence developmental outcomes in migrant youth (see Dimitrova et al., 2016; Kouider et al., 2014). In addition, we controlled for non-verbal intelligence and receptive vocabulary, since there is evidence showing their impact on

EF capacities across developmental stages (Arffa, 2007; Hongwanishkul, Happaney, Lee, & Zelazo, 2005). We subsequently selected the best model on the basis of the criteria specified above.

5.4. Results

Means and standard deviations for study variables and bivariate correlations are reported in Table 5.1, separately for Chinese immigrant and Italian non-immigrant early adolescents.

The Akaike weights of all estimated models are presented in Appendix D. The most plausible model is the 18th, with a probability of being the best of .41, superior to all other models (<.20) (Appendix D). This model explained 30% of the variance.

All main effects, two-way and three-way interactions included in the final model are reported in Table 5.2. At a multivariate level, results indicated that working memory and positive parenting were significantly and negatively related to emotional and behavioral difficulties. However, the effect of positive parenting on our dependent variable was negligibly small. In addition, poor supervision was significantly and positively related to the outcome variable, but this association was moderated by inhibitory control (two-way interaction). To explore the interaction effect, we performed tests of the simple slopes (Aiken & West, 1991).

As can be seen in Figure 5.1, poorly supervised preadolescents with low inhibitory control capacity were significantly more vulnerable to emotional and behavioral problems ($B = .35$, $SE = .10$, $p < .001$, $\eta_p^2 = .086$), whereas the link between poor supervision and problem behaviors was not statistically significant at high levels of inhibitory control ($B = .05$, $SE = .08$, $p = .481$, $\eta_p^2 = .004$).

Table 5.1 Descriptive statistics of study variables for Chinese immigrant ($n = 97$) and national non-immigrant ($n = 165$) early adolescents and correlations, separately for each group.

	<i>M(SD)</i>	<i>Range</i>	<i>M(SD)</i>	<i>Range</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
	Chinese immigrants ($n = 97$)		Non-immigrants ($n = 165$)							
1 Poor supervision	18.89(5.69)	10-39	14.07(3.85)	10-34	-	-.16	-.14	.04	.06	.28**
2 Positive parenting	19.20(5.45)	6-30	23.46(3.68)	12-30	-.45**	-	.11	.23*	.24*	-.30**
3 Working memory	8.43(2.44)	3-15	10.21(2.56)	3-18	-.07	.05	-	.21*	.17	-.18
4 Inhibitory control	.12(.68)	-2.26-1.12	-.07(.73)	-2.45-1.94	.05	-.04	-.06	-	.34***	-.14
5 Cognitive flexibility	-.06(.67)	-2.50-1.35	.03(.62)	-1.65-1.86	.04	.01	.06	-.04	-	-.17
6 Emotional and behavioral problems	9.69(5.30)	2-26	6.07(3.88)	0-21	.16*	-.11	-.23**	.05	-.01	-

Note. Correlation coefficients displayed above the diagonal are for Chinese immigrants, below are for non-immigrants.

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

Table 5.2 Final linear regression model with emotional and behavioral problems as dependent variable

<i>Variable</i>	<i>B (SE)</i>	<i>Omnibus F (df)</i>	η^2_p
Non-verbal IQ	-.04(.02)	2.81(1,246)	.01
Receptive vocabulary	-.02(.01)	3.49(1,246)	.01
Poor supervision	.14(.10)	8.61(1,246)**	.01
Positive parenting	-.02(.10)	5.29(1,246)*	<.01
Working memory	-.23(.11)	4.36(1,246)*	.02
Inhibitory control	6.23(2.25)	.26(1,246)	.03
Cognitive flexibility	1.93(1.94)	.46(1,246)	<.01
Ethnicity (Chinese)	3.48(4.10)	1.59(1,246)	<.01
Working memory x Inhibitory control	-.23(.14)	2.62(1,246)	.01
Poor supervision x Inhibitory control	-.23(.08)	8.16(1,246)**	.03
Poor supervision x Cognitive flexibility	-.15(.13)	.06(1,246)	.01
Poor supervision x Ethnicity (Chinese)	.09(.12)	.99(1,246)	<.01
Positive parenting x Ethnicity (Chinese)	-.20(.13)	2.32(1,246)	.01
Cognitive flexibility x Ethnicity (Chinese)	-7.82(3.54)	.21(1,246)	.02
Poor supervision x Cognitive flexibility x Ethnicity (Chinese)	.43(.20)	4.70(1,246)*	.02

Note. $n = 262$. Baseline category for Ethnicity was non-immigrant. $R^2 = .30$.
 * $p < .05$; ** $p < .01$

We also found a significant three-way interaction among poor supervision, cognitive flexibility, and ethnicity. As can be seen in Figure 5.2, at high levels of cognitive flexibility, poor parental supervision was significantly and positively associated with problem behaviors for Chinese immigrant ($B = .39, SE = .14, p = .009, \eta^2_p = .166$), but not for Italian non-immigrant ($B = .06, SE = .13, p = .649, \eta^2_p = .003$) early adolescents.

At low levels of cognitive flexibility, poor supervision and problem behaviors were not significantly associated neither among Chinese immigrant ($B = .16, SE = .13, p = .229, \eta^2_p = .032$) nor among non-immigrant ($B = .10, SE = .13, p = .430, \eta^2_p = .009$) youth.

Figure 5.1 The interaction effect of poor parental supervision and inhibitory control on emotional and behavioral problems for Chinese immigrant and non-immigrant early adolescents ($n = 262$) at low levels and high levels of inhibitory control. Inhibitory control was divided into two levels based on median: low = below median; high = above median.

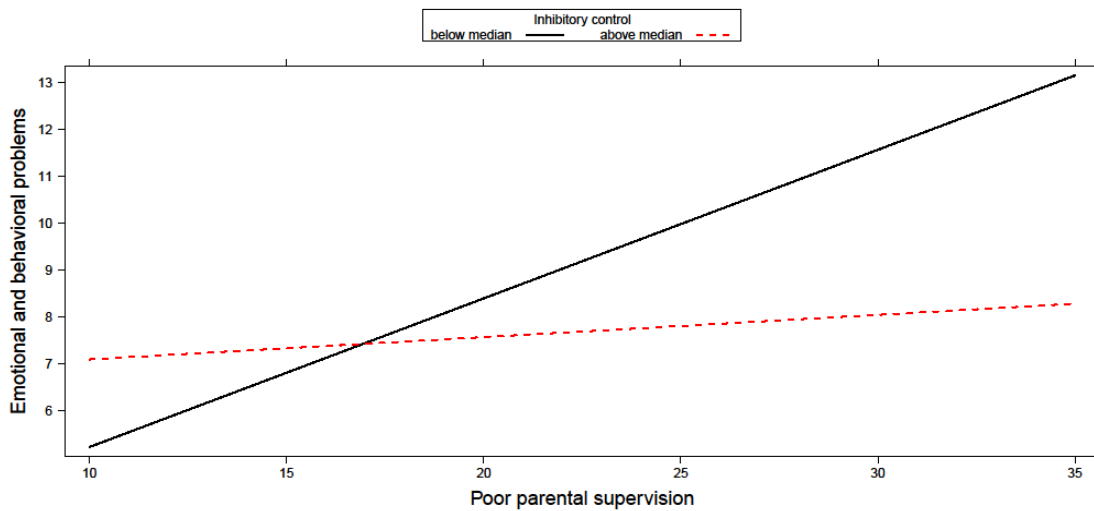
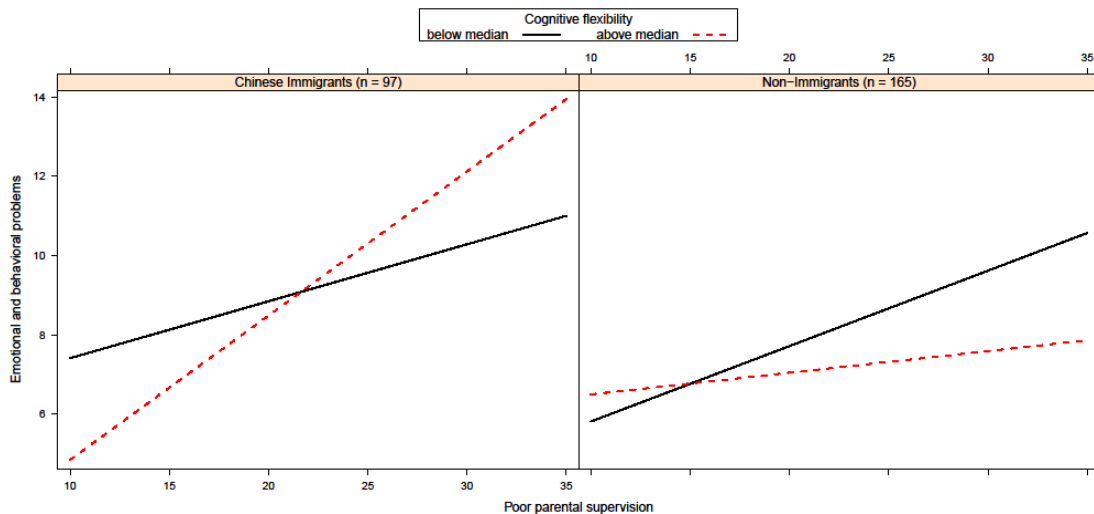


Figure 5.2 The interaction effect of poor parental supervision and cognitive flexibility on emotional and behavioral problems for a) Chinese immigrant; b) non-immigrant early adolescents ($n = 262$). Cognitive flexibility was divided into two levels based on median: low = below median; high = above median.



5.5. Discussion

To the best of our knowledge, the present study is the first to empirically test the moderating role of EFs (i.e., working memory, inhibitory control, cognitive flexibility) in the association between specific parenting practices (i.e., poor supervision, positive

parenting) and early adolescents' emotional and behavioral difficulties.

Moreover, by focusing on both Chinese immigrant and Italian non-immigrant youth, our study extends prior findings which mostly relied on Chinese immigrant minorities in the US, thus allowing to assess the common and unique contributions of personal (i.e., EFs), parental (i.e., parental practices) and cultural variables (ethnicity) on psychological adjustment in a European country with a relatively short history of immigration.

Overall, findings demonstrate a statistically significant and negative relationship between positive parenting and problem behaviors in our sample (Hoeve et al., 2009). However, the effect size was small, suggesting a marginal role of positive reinforcement during early adolescence (Laird et al., 2003; Larson et al., 1996; Menting et al., 2016). In line with our hypothesis, the beneficial effects of parental praise during early adolescence are less pronounced, given the increasing reliance on peers in out of home contexts for self-development.

Another possible explanation lies in the fact that parents reported on both parental practices and their offspring's emotional and behavioral problems. The presence of negative bias in parents' perceptions may inflate the relation between negative parenting and youth symptomatology, but not the one between positive parenting and outcomes (Parent et al., 2016). This link was not moderated by EFs or ethnic background, suggesting that other variables than those considered in our study (e.g., adolescents' self-perceptions, quality of the parent-child relationship) may interact with positive parenting in links with psychological adjustment.

As expected, poor parental supervision was significantly associated with more problem behaviors, but this direct effect was in turn moderated by EFs and ethnicity. Specifically, inhibitory control moderated the association between poor supervision and

the total difficulties score, showing that inadequate parental supervision had a detrimental effect on psychological adjustment, but only at low levels of inhibitory control. Consistent with prior findings, low inhibitory control appears to be a risk factor for youth socio-emotional adjustment. The parents' failure to provide external control may impact more on preadolescents with low inhibitory control capacities. It could be argued that these youngsters cannot rely on internal regulatory competences to compensate for the lack of external supervision (Menting et al., 2016). Despite the crucial importance attributed to self-control in Chinese socialization practices, this effect was similar across the two ethnic groups.

Albeit unexpected, this result confirms previous findings showing that the relation between supervision and problem behavior holds across neighborhoods and ethnic groups (Dishion & McMahon, 1998; Pardini et al., 2008). Thus, the need for external guidance may be universal during early adolescence, when youths of all ethnic backgrounds are struggling with issues of independence and autonomy outside their home environment (Kim et al., 2015).

In addition, poor parental supervision interacted with cognitive flexibility and ethnic background in predicting emotional and behavioral problems (three-way interaction). In line with our hypothesis, the poor supervision-problem behavior link was stronger for Chinese immigrants, confirming the crucial role of flexibility among early adolescents of immigrant origin, who need to switch from one set of cultural values to another as to adjust to everyday life requirements in different contexts (Fuligni & Tsai, 2015). However, our results indicated that unsupervised Chinese preadolescents showed more emotional and behavioral difficulties at high levels of cognitive flexibility, whereas in the face of an adequate parental supervision, more flexible Chinese adolescents had the lowest level of symptoms.

This paradoxical effect may be interpreted in light of the specificities of Chinese immigrant families in Italy. Chinese immigration to Italy is a form of entrepreneurial investment, and running small family businesses is the ultimate goal of the Chinese migratory project to Italy (Laghi, Pallini, Baiocco, & Dimitrova, 2014). Chinese parents are usually very busy at work and it is a common practice for them to send their children back to China to attend primary school there, as to be educated according to Chinese cultural values and get full attention from their grandparents (Pedone, 2013). In line with Confucian values, Chinese children are socialized to feel responsible and respectful towards their family. Parents expect their adolescent children to be independent as not to interfere with their work, to be successful in school, but at the same time adolescents need to help with the family business and at home, for instance by taking care of younger siblings (Laghi et al., 2014; Pedone, 2013). In this context, it may be argued that if unsupervised, more flexible Chinese preadolescents may lack a clear structure to adapt their behavior according to Chinese values, becoming more likely to switch to mainstream cultural values, thus standing opposite their parents' expectations and incurring in more conflicts with them. Further research including measures of parent-child conflict, acculturation preferences in the family, and social support systems is needed to shed light on this issue.

Last, a better working memory was significantly associated with fewer emotional and behavioral problems. This result confirms previous findings which highlighted the crucial role of working memory for psychological adjustment, representing a potential substrate for the use of other self-regulatory skills (Otto et al., 2016). However, this direct effect did not interact either with parental practices or with ethnicity, suggesting that working memory processes are more independent than other cognitive processes from personal and cultural influences (Engel de Abreu, Baldassi, Puglisi, & Befi-Lopes,

2013).

5.5.1. Limitations and directions for future research

Several limitations need to be considered when interpreting the results.

First, the cross-sectional design prevents us from drawing conclusions about causality. Longitudinal studies are needed to shed light on the developmental trajectories of variables involved in early adolescents' problem behavior.

Second, this study focused on Chinese immigrants living in Italy, a recently receiving society with a specific history of immigration and integration policies that differ from those shared by the well-established and long-term immigration patterns to the US or Canada. Hence, generalization of findings to other ethnic groups or to Chinese youths settled in other countries should be done with caution.

Third, although recent evidence suggests that immigrant adjustment varies according to generational status (Dimitrova et al., 2016; Kouider et al., 2014), sample size concerns did not allow us to test whether generational status could further moderate the associations among our variables in Chinese immigrants. Future studies drawing on larger samples should address this issue.

Fourth, mothers and fathers may differ in their parenting practices and in the impact of such practices on children's emotional-behavioral adjustment. Although this aspect was not the focus of the present work, future studies involving both parents would inform on the specific role of maternal and paternal practices on psychological adjustment in immigrant and non-immigrant early adolescents (Simons & Conger, 2007).

Last, although interaction analyses are a commonly used method to test moderation, interaction effects may be hard to replicate and tend to have small effect

sizes (McClelland & Judd, 1993; Wampold & Freund, 1987). Indeed, our exploratory intent was to test a complex and plausible model of reality able to provide new insights and hints for future research and discussion. Therefore, interaction findings should be interpreted with some caution, and be replicated in future research.

In spite of these limitations, our study uniquely contributes to advancing research by providing evidence of similarities and differences in the moderating role of EFs in the association between parental practices and emotional and behavioral problems in early adolescents of immigrant and non-immigrant background. The combined use of behavioral and parent-report measures is a strength of the present study, as it allows to overcome desirability and shared variance biases, thus increasing the validity of findings.

Early adolescence emerges as a very delicate and complex phase of transition during development. It may represent a suitable target for preventive interventions targeting both parental practices via parenting training programs, and children's EFs, via individual or school-based trainings. Nevertheless, our results suggest that the specific effects of parental practices in interaction with subcomponents of EFs on early adolescents' problem behavior may vary according to ethnic background.

If results of the present study are replicated and extended, clinical implications are possible. Interventions aimed to improve parental supervision and enhance parents' knowledge and interest in their children's whereabouts may be useful to reduce the risk of emotional and behavioral difficulties for both Chinese and Italian families in Italy.

Our findings also emphasize the relevance of targeting inhibitory control and working memory to reduce the negative impact of inadequate parental practices on psychological adjustment. Indeed, computerized working memory training and martial arts seem to have promising results in improving youths' cognitive functioning (Blair,

2016; Diamond & Lee, 2011). However, more research is needed to better understand the diverse impact of cognitive flexibility in links with negative parenting practices in Chinese immigrant early adolescents. Acknowledging cultural influences on the complex interplay among parenting and cognitive factors may guide practitioners to implement effective and culturally-sensitive interventions.

CHAPTER 6

General discussion

*“Every human is like all other humans,
some other humans,
and no other human”
Clyde Kluckhohn (1949, p. 89)*

Findings in the current dissertation provide support for the argument that immigrant early adolescents’ socio-emotional adjustment arises from multi-determined and complex interactive processes involving personal, family/social, and cultural influences. All our empirical chapters shed light on both culture-specific and common influences on socio-emotional adjustment in immigrant youth (Motti-Stefanidi, Berry, Chryssochoou, Sam & Phinney, 2012; Zhou, Tao et al., 2012). Thus, the answer to the question formulated in the first chapter, “Does one size really fit all?” according to our results is “Not really”. In this perspective, the integrative theoretical framework proposed by Motti-Stefanidi et al. (2012) to understand immigrant youths’ positive adjustment provides a useful model to guide future studies on the topic by acknowledging the complexity of interactions among different levels of analysis, both at the personal and at the broader social and cultural levels.

The salient and powerful role of differences in ethnic background was evident in that this variable was able to influence not just the strength of associations among different constructs, but in some cases also the direction of these associations, leading to some unexpected paradoxical effects. Thus, the risk and/or protective role of the variables considered in our study may vary according to youths’ ethno-cultural

background. This finding is in line with recent theories emphasizing how cultural contexts and personal characteristics both shape the development of behavior and its display in daily life (Motti-Stefanidi et al., 2012; Sam & Berry, 2006), and suggests that caution is needed in generalizing results obtained in mainstream adolescent samples to ethnic minority groups.

For instance, the individual level of cognitions (here represented by cold and hot EFs) was not independent from contextual and cultural influences, and may represent either a protective or a risk factor according to the specificities of each ethnic group and to the contextual variables under examination. In addition, sharing an immigration background can influence psychological adjustment over and above ethnic differences, as suggested by some interaction effects emerging in both Moroccan and Romanian samples, but not in Italian mainstreamers.

Overall, our results point to the importance of situating preadolescents' socio-emotional adjustment in cultural context. In line with recent evidence, even cognitive processes such as EFs need to be understood in their social environment, assuming different meanings and different roles across contexts (Dishion, 2016). This is true especially as children become adolescents, a time in which they develop capacities providing different perspectives on themselves and the world relative to the broad social environment (Piaget, 1970). Thus, the need to build a bridge between cultures and contexts by situating personal variables in the broader socio-cultural environment becomes evident to achieve a deeper understanding of how individuals adapt in multicultural societies.

In this chapter, a summary of the main findings discussed in the previous chapters is provided, separately for each empirical study. Next, a discussion of the studies' limitations, some suggestions for future research, and theoretical and practical

implications of the results of this dissertation are presented.

6.1. Self-construals and social adjustment in Moroccan and Romanian immigrant early adolescents

In Chapter 3, independent and interdependent self construals in relation to social competence and prosocial behavior were the focus of the study, representing a bridge between distal and proximal influences on early adolescents' social adjustment.

Having an interdependent orientation emerged to be generally associated with better social adjustment, in line with extensive prior evidence linking interdependence and collectivism to more prosocial and cooperative tendencies (Kawabata, 2016; Utz, 2004), but the situation emerged to be more complex than that. Better cognitive flexibility capacities boosted the positive interdependence-social adjustment link, but only for Moroccan and Romanian immigrant preadolescents. However, this effect was in the opposite direction for mainstream Italian early adolescents. These findings indicate that flexibility may be differently socialized among immigrant and non-immigrant youth.

As proposed by Fuligni and Tsai (2015), the capacity to adaptively shift from one context to another, namely the capacity to be flexible according to contextual demands, may be crucial for immigrant youths' adaptation. Migrant children and adolescents are exposed to different cultural values and norms (i.e., heritage and mainstream cultures), and need to flexibly adapt their behavior to different social and cultural situations early during development. Non-immigrant youngsters begin to be exposed to different out-of-home contexts involving different contextual demands and rules predominantly during early adolescence. For them, flexibility may be a new and unfamiliar ability which could temporarily represent a vulnerability (Crone & Dahl, 2012). More flexibility may put mainstream preadolescents at more risk of social difficulties given their exposure to

one mainstream cultural context which usually does not require high levels of this capacity.

In addition, inhibitory control was useful to boost social competence only for Moroccan immigrants. The collectivistic cultural values of this immigrant group are very distant from mainstream Italian values, but are distant also from the Romanian cultural values, which share more similarities and proximity to the Italian society. Thus, inhibitory capacities may help especially Moroccan preadolescents to inhibit a set of culture-specific behaviors as to adopt more appropriate social interactions according to contextual demands. The larger the distance between two cultural sets, the bigger the effort to inhibit one or the other according to situational demands. Interestingly, high levels of inhibitory control enhanced the interdependence-prosociality link only for the traditionally individualistic Italian non-immigrant preadolescents, suggesting that the endorsement of prosocial behaviors may need the suppression and inhibition of specific self-oriented personal values that, in contrast, are generally less salient in collectivistic-oriented ethnicities (e.g., Morocco, Romania).

Finally, working memory played a positive role in youths' social adjustment regardless of ethnicity, suggesting its impact to be more independent from contextual and cultural influences than the other EF subcomponents.

To sum up, cognitive flexibility seems to play a key role in immigrant youths' social adjustment, while at the same time being a relatively new and challenging task for non-immigrant preadolescents. Inhibitory control may be of help when the adolescent needs to inhibit a set of rules or cultural values which vary considerably from one context to another, thus interfering with the endorsement of appropriate social behaviors in a specific context. Overall, these results support the idea that differences in levels of social adjustment among different migrant and non-migrant groups depend

upon cultural and cognitive factors, supporting the need to explore influences on socio-emotional adjustment, instead of simply investigating outcome differences (Dimitrova, Chasiotis, & Van de Vijver, 2016; Kouider, Koglin, & Petermann, 2014; Motti-Stefanidi et al., 2012).

6.2. Perceived ethnic discrimination and problem behaviors in Moroccan and Romanian immigrant early adolescents

In Chapter 4 we took a closer look at the experiences commonly faced by immigrant youth by targeting only Moroccan and Romanian immigrants, as to concentrate on migration-specific variables.

The focus was on one of the most pressing public health concerns at present, namely perceived ethnic discrimination. Ethnic discrimination is the most common form of discrimination in Italy, and represents a crucial contextual stressor able to compromise youth's socio-emotional adjustment. However, some other personal or cultural variables may influence the discrimination-problem behaviors link, attenuating or further enhancing the negative impact of discriminatory experiences on psychological adjustment.

A crucial migration-specific aspect which cannot be ignored in links with discrimination is acculturation (Ward & Geeraert, 2016). Mounting evidence points to the protective role of having a bicultural identity and of endorsing integration in immigrants' positive adaptation (Nguyen & Benet-Martinez, 2013). Overall, our study suggests that integration is not common among preadolescent immigrants in our sample, who tended to prefer assimilation and separation strategies. This pattern may be linked to the specific developmental phase of early adolescence, in which identity is unstable since individuals are still exploring their multiple identities (Musso, Inguglia, & Lo Coco, 2016).

In addition, we focused on the hot components of EFs, given the emotional activation which discriminatory experiences are thought to elicit in everyday life. Our findings indicate that the influence of acculturation orientations on the discrimination-problem behavior link is similar across ethnicities, suggesting that the perception of acculturation orientations in the assimilationist Italian society does not vary much as a function of ethnic background, and that the endorsement of one's ethnic and national identity assumes similar meanings across Moroccan and Romanian youth.

However, lower impulse control was a risk factor, enhancing the negative impact of discrimination especially for Romanian immigrants. It could be hypothesized that the reduced cultural distance of Romanians from the mainstream society may render this ethnic group especially vulnerable to the negative consequences of discriminatory experiences, and the impossibility to rely on average control capacities in front of emotional activation may be particularly detrimental. Low impulse control was a risk factor also for early adolescents who endorsed separation, neutralizing the beneficial effect of a strong ethnic identity by impulsive and immediate reactions. Conversely, high instead of low impulse control emerged as a risk factor for assimilated preadolescents.

Again, our findings highlight how powerful contextual and cultural influences are in shaping personal meanings and influences on adaptation. Whereas low impulse control becomes a risk for separated adolescents, high impulse control paradoxically becomes a risk for assimilated youth. Although this paradoxical effect is counterintuitive, previous research with clinical samples has reported similar findings (Garon, Moore, & Waschbusch, 2006; Wardle, Gonzalez, Bechara, & Martin-Thormeyer, 2010). One possible interpretation refers to individual differences in awareness linked to the emotional activation during the task (Garon et al., 2006; Wardle

et al., 2010).

From a cultural-contextual perspective, it is possible that the wins and losses in the task we used to assess impulse control (i.e., IGT) triggered motivational and personal meanings which differed across groups. Differences in levels of emotional arousal and meanings attributed to the task do not represent the same assessment contexts, and one specific task may measure slightly different constructs across different people (Albert & Steinberg, 2011; Okdie et al., 2016). Indeed, impulse control is socialized differently across youths from different ethnic and migration backgrounds, and such differences may impact on the effects of specific cognitive aspects on psychological functioning (Fuligni & Tsai, 2015; Ward & Geeraert, 2016). Although these findings merit further investigation, they highlight the importance of considering that a same emotion or thought may assume different meanings, and thus may benefit some individuals, while putting others at more risk. This calls for the importance of investigating individual differences and personal meanings when tailoring interventions for immigrant youth.

6.3. Parental practices and emotional-behavioral difficulties in Chinese immigrant youth

In Chapter 5 we considered another contextual variable which has been found to significantly impact on youth's emotional and behavioral difficulties across different cultures and contexts, namely parenting (Lansford et al., 2016).

In this study we focused on Chinese immigrants in Italy, a group in which the cultural distance between mainstream and heritage cultures is maximized, rendering parental practices especially salient for the study of immigrant preadolescents' adaptation. Results confirmed the complex interplay between cultural, family/social, and personal factors in explaining psychological adaptation, highlighting both

commonalities and differences between immigrant Chinese and non-immigrant national youth.

Whereas the association between parental reinforcement and praise and mental health seems to be of secondary importance during early adolescence, poor parental supervision emerged to be a potential risk factor for early adolescents' well-being (Menting, Van Lier, Koot, Pardini, & Loeber, 2016). However, this detrimental effect was evident only for those who reported scarce inhibitory control, suggesting that external supervision might be particularly important to compensate for a lack of internal regulatory competences, at least during a delicate phase such as the entry into adolescence (Menting et al., 2016).

In addition, cognitive flexibility emerged once more as a crucial aspect especially for immigrant youths' adjustment (Fuligni & Tsai, 2015). However, differently from what we found in Study 1, Chinese immigrant preadolescents who were unsupervised were at higher risk when they could count on better levels of cognitive flexibility. Such unexpected finding made us reflect upon the specificities of Chinese families in Italy, and once more the contextualization of findings and constructs in a socio-cultural context helped us to make sense of such a counterintuitive result. Flexible Chinese early adolescents may be the ones to more actively experience and endorse mainstream cultural values and contexts when not controlled by their parents, and this could originate more conflicts at home which, in turn, may lead to a more negative perception of children on behalf of the parents.

Indeed, the lowest level of symptoms was reported for those Chinese adolescents who could rely on high levels of both cognitive flexibility and adequate supervision from parents. When such different contexts have clear boundaries and expectations, preadolescents may be able to switch from one to another flexibly without breaking any

rules and incurring in unmet parental expectations. Conversely, when boundaries at home are not well defined and somehow less clear, the flexible adolescent may turn to mainstream values and peers during the spare and unsupervised time, thus increasing the cultural gap with parents.

Finally, in line with the results of Study 1 (Chapter 3), a better working memory capacity was related to fewer problem behaviors, regardless of any contextual or cultural influences.

6.4. Wrapping up findings across studies

“No size fits all”, no universal approach can be applied with immigrant youth without taking into account cultural, family/social, and personal aspects. Overall, our findings suggest that when ethnic background is considered simultaneously in the same model together with other contextual and personal variables, its main effect on socio-emotional adaptation becomes interactive, highlighting how having an immigrant background may represent a risk factor, but only under specific conditions. And these conditions vary across cultures and contexts.

There are resources and risks which distinguish some ethnic groups from others, and such resources and risks may vary according both to prior and present contextual and cultural influences. All immigrants have to face many challenges and stressors, and to do so they need to develop personal adaptive capacities based on their daily experiences (Fuligni & Tsai, 2015; Masten, Liebkind, & Hernandez, 2012). Nonetheless, the adaptive capacities of one immigrant adolescent may be different in type and meaning from those of another immigrant adolescent. However, in this complex interplay, there are some hints that can be gathered across our chapters to make sense of the intricate reality of immigrant youth’s socio-emotional adjustment.

First, cognitive flexibility appeared to play an important role in links with contextual influences on both social and problem behaviors across immigrant groups with different ethnic backgrounds. It can be argued that in the multicultural context of peer interactions, a flexible attitude may generally help immigrants to endorse positive social interactions, promoting the adaptive interaction with both ethnic and mainstream peers. In contrast, in the home environment such flexibility may be less adaptive for immigrant youth, since it may increase the probability for the adolescent to incur in conflicts with parents. Notably, different contexts require different abilities. However, a certain degree of conflict with parents is necessary during adolescence, as to develop and define one's identity and handle the gains in independence and autonomy. Adolescent immigrants are, first of all, adolescents. The extent to which cognitive flexibility, search for autonomy, and parent-child conflict would be considered normative and typical developmental processes in immigrant families at the entry of adolescence remains an important question for future research (Fuligni & Tsai, 2015).

Second, the "cold" dimension of inhibitory control seems to provide an important internal resource to handle situations across different contexts, such as lack of parental supervision at home or one's interdependent orientation during social interactions. Inhibitory control may be especially salient at the entry into adolescence, when the possibility to rely on internal regulatory capacities becomes crucial to face the challenges related to the new gains in autonomy and independence typical of this age. However, the beneficial effect of better inhibitory control and the detrimental effect of low inhibitory control in links with psychological adjustment manifest themselves in some contexts for some ethnic groups, and in other contexts for other ethnic groups. It is likely that other specific cultural values intervene to determine the degree of inhibition needed across contexts and ethnic groups. In this sense, the degree of cultural distance

between mainstream and heritage cultures may play a central role. For instance, in the context of an interdependent orientation, inhibition may be useful for individualistic Italian youth to be more prosocial, but not for their Moroccan or Romanian group-oriented peers. At the same time, inhibitory control may be an especially valid tool for Moroccan immigrants to be more socially competent with peers given the larger cultural distance between Moroccan and mainstream values, but not for Romanians or Italians who can count on more cultural proximity.

Third, in a context of strong emotional activation, such as when facing discriminatory experiences, impulse control as measured by the IGT may assume different meanings and have different influences across individuals on socio-emotional adjustment. Again, even when examining impulse control, the degree of cultural distance from the mainstream society shows its influence, this time on how emotional reactions impact on adaptation. Indeed, the degree of integration into the mainstream society seems to influence how discriminatory experiences are perceived and regulated at the personal level.

Last, as regards working memory, its positive influence on both social and emotional-behavioral outcomes seems to hold across contexts and ethnicities, such that better working memory represents an overall positive influence on Moroccan, Romanian, Chinese and Italian youth's adaptation. Compared to inhibitory control and cognitive flexibility, working memory seems to be more independent from external influences. Working memory has been found to be independent from external influences also in studies on bilingual children (Bialystok, 2001; Engel de Abreu, 2011).

In line with such findings, we may postulate that some cognitive control processes such as inhibitory suppression and switching are more involved than working memory in resolving the conflicts arising from the exposure to different languages/cultural

contexts. In addition, our working memory task involved digits, which may be very familiar to all preadolescents, thus representing an automatic ability not linked to cognitive control mechanisms (Engel de Abreu, 2011; Engel de Abreu, Baldassi, Puglisi, & Befi-Lopes, 2013).

To conclude, our findings point to the importance of each single component of EFs in early adolescent immigrants, supporting the need to situate the influences of cognition on socio-emotional adjustment in socio-cultural context. Working memory, inhibitory control, and cognitive flexibility may all represent potential risk or protective factors putative of intervention efforts for immigrant youth. A deeper understanding of various forms of adaptation across different contextual and cultural influences will enhance the potential for prevention as well as avoid iatrogenic intervention strategies with misinformed targets (Dishion, 2016).

6.5. Limitations and future directions

Several limitations of this research should be noted. Many of them have already been mentioned in the previous chapters. However, such limitations are recalled in the present paragraph to summarize and more explicitly define how future studies could overcome these issues, as to advance knowledge on immigrant youths' socio-emotional adjustment.

First, our analyses and the cross-sectional design of our study did not allow us to address causality. Longitudinal studies are needed to better understand the developmental trajectories of variables involved in immigrant adolescents' socio-emotional adjustment.

Second, we focused on a relatively restricted age range (11-13 years). Although this selection was motivated by theoretical reasons as well as by the need to meet

homogeneity of variance assumptions in a time of numerous and fast changes in EFs (Archibald & Kerns, 1999), a larger sample with a broader age range or the inclusion of different cohorts would be recommended to test the specific role of developmental processes. This could help to disentangle the influences which are typical of early adolescence from those which keep influencing development at later stages.

Third, we conducted moderation analyses given our interest in the potential risk and protective factors able to moderate the link between cultural and family/social influences on youths' socio-emotional adjustment. Although EFs have been theorized and studied as potential moderators of the association between different environmental stressors and outcomes (Hofmann, Schmeichel, & Baddeley, 2012; Masten, Herbers et al., 2012), there is a bulk of literature demonstrating the potential mediating role of EFs, given that they are highly sensitive to social and contextual influences themselves, especially early during development (Hofmann et al., 2012; Roman, Ensor, & Hughes, 2016). Despite our conceptual models were based on extensive literature in a risk and resilience perspective, our studies cannot exclude the possibility that EFs may partially or totally mediate the impact of self-construal, discrimination or parenting on socio-emotional adjustment. However, cross-sectional approaches to mediation typically generate substantially biased estimates of longitudinal parameters even under the ideal conditions (Maxwell & Cole, 2007). Future studies should use longitudinal designs and statistical analyses that control for competing explanations (e.g., mediation or moderation).

Fourth, another methodological issue concerns measurement bias in cross-cultural research, namely the equivalence of measures across groups. Did our questionnaires and tasks measure the same psychological constructs across ethnocultural groups? A positive answer to this question is needed, as to confirm the validity of comparisons

across groups and findings (Van de Schoot, Lugtig, & Hox, 2012). Moreover, when an adaptation of existing questionnaires to different languages and cultural groups is required, the reliance on cultural informants and translation-back-translation procedures is crucial to ensure the validity and reliability of results (Abubakar, Dimitrova, Adams, Jordanov, & Stefenel, 2013). In line with these recommendations, in the present study we included all measures whose cross-cultural validity was extensively documented, followed a translation-back-translation procedure for all tasks and questionnaires which were not available in the target languages, and extensively collaborated with cultural informants. However, mounting evidence suggests this might not be enough. Researchers started to underline the salience of measurement invariance in cross-cultural research (Milfont & Fischer, 2015). Measurement invariance can be easily compromised by language and cultural differences. Thus, it is fundamental to test for measurement invariance when studying different cultural groups to increase the generalizability of findings. In addition, future studies should investigate the cross-cultural reliability and validity of the tasks used to assess EFs. The task-impurity problem may be alleviated by the use of multiple measures of each EF component under investigation, rather than one single task (Snyder, Miyake, & Hankin, 2015).

Fifth, in our models we included ethnicity as a moderator at the cultural level, defined as early adolescents' country of provenience. Ethnicity is indeed a proxy of cultural background. However, ethnicity is not informative about one's level of endorsement of heritage cultural values and norms, which could greatly vary across individuals from the same country of origin. Future studies should more specifically and directly assess the endorsement of specific cultural aspects (e.g., ethnic and national identities, cultural values) which could help in the interpretation of results.

Sixth, although much effort was put in the recruitment of immigrant families, the

response rate was modest (60% on average), and therefore the sample size for each ethnic minority group was relatively small. These response rates were mainly due to parents, who were difficult to reach and less motivated to participate compared to their children. Although our response rates are similar to those of other studies with immigrant populations (Emmen, Malda, Mesman, van Ijzendoorn, Prevoo, & Yenziad, 2013; Stevens, Pels, Bengi-Arslan, Verhulst, Vollebergh, & Crijnen, 2003), sample size concerns may have resulted in limited statistical power given the many variables involved in our analyses. In addition, the small sample size may have been subject to some self-selection. Higher nonresponse rates among ethnic minorities, especially families with low SES, have been previously reported (Feskens, Hox, Lensvelt-Mulders, & Schmeets, 2007). The low response rate may have resulted in lower representativeness of the general immigrant population in Italy. Yet, the socio-economic level of our sample was comparable to the one reported by national statistics on immigrant minorities in Italy (Istat, 2016). Furthermore, our efforts to reach families through local schools with high percentages of immigrants, the collaboration with cultural informants and the use of brochures, letters and measures in both Italian and heritage languages may have reduced potential sample bias limitations.

Seventh, this research focused specifically on Moroccan, Romanian and Chinese immigrants. Generalization of findings to other ethnic groups and to immigrants in other receiving societies should be done with caution. Moreover, our sample was recruited mostly in Northern Italy and there is evidence of differences in how immigration is perceived even within Italy itself. Northern Italy (e.g., Veneto region) is characterized by a relatively unfriendly immigration socio-political climate, whereas Southern Italy (e.g., Sicily region) has a more favorable attitude towards immigrants, supportive of open immigration policies (Musso, Inguglia, Lo Coco, Albiero, & Berry, 2016). These

within-country differences in attitudes towards immigration and multiculturalism may impact on how immigrant youths adapt to their local environments.

Last, as already mentioned in the previous chapters, our interaction effects were small in size, and the explained variance was relatively modest compared to single informant studies where shared method variance may inflate relations between constructs (Sawyer, Streiner, & Baghurst, 1998). However, as previously explained, interaction effects are generally hard to detect, and the contribution of interaction effects over and above main effects is typically small (McClelland & Judd, 1993; Wampold & Freund, 1987). By controlling for many possible confounding variables in our analyses, and by using parent report, self-report and performance tasks, we made an effort to overcome many of the methodological biases inflating effects that in the real world complexity tend to be smaller in size. However, during early adolescence parents may have limited access to their children's social interactions and emotional-behavioral issues, and a multi-informant study using a combination of teacher-, peer-, and self-reports may help to obtain a more accurate picture of immigrant adolescents' adaptation in different contexts.

In spite of these limitations, our research adds to the literature by moving the field beyond immigrant versus non-immigrant comparisons to consider how different individual, family/social, and cultural variables impact on socio-emotional adjustment. In this way, we tried to overcome the "deficit perspective" which characterized most prior research on migrant populations in favor of a more positively oriented one (Cabrera, 2013). Although this thesis provided answers to many important questions, several issues remain unresolved and some additional questions arose, deserving more attention in future research.

Our hope is that other scholars will follow this complicated but stimulating path to

get to a better understanding of the protective and risk factors involved in immigrant youth's socio-emotional adaptation.

6.6. Implications for practice and policy

Besides the theoretical implications of the research presented in this thesis, there are also a number of implications for practitioners and policy makers, which we would like to highlight in this section.

Overall, the investigation of immigrant youths' socioemotional adjustment needs to move away from a deficit perspective towards a perspective emphasizing the processes which lead to positive outcomes, as to inform preventive practices for early intervention and increase cultural sensitivity among practitioners, school staff, and researchers (Dimitrova, 2014).

Our findings suggest that early adolescence represents a critical time for prevention and intervention efforts, due to both vulnerabilities and chances linked to the renovated neural plasticity during this "key developmental window of opportunity", rendering early adolescence especially sensitive to external influences (Allen & Dahl, 2015; Fuhrmann, Knoll, & Blakemore, 2015).

Schools represent an important and obliged point of contact between immigrant families and the mainstream society (Rullo & Musatti, 2005). Hence, strategies should be implemented to prevent ethnic discrimination at school, to promote intercultural contact and the value of maintaining different ethnic identities, as well as to inform about acculturative issues in terms of integration, separation, assimilation and marginalization. However, the feasibility of such a school-based project largely depends on the competences of teachers and school personnel. Unfortunately, at least in Italy, professionals in schools generally lack a specific training in intercultural competence.

Given the increasing ethnic diversity in Italian schools (Istat, 2016; Miur, 2015), professional trainings to promote cultural sensitivity become necessary and should be included in current university curricula and delivered to teachers who already work in schools to integrate their skills. In addition, future research involving schools and teachers may represent a valid starting point for the investigation of the interactive processes involving both the ethnic and native peer groups, as suggested by Motti-Stefanidi et al.'s theoretical framework (2012). Such social and interactive processes may play a fundamental role for early adolescent immigrants' socio-emotional adjustment.

Furthermore, trained teachers able to promote a welcoming and multicultural climate in class may be more effective in building bridges with immigrant parents (Christenson, 2004). The same holds for teachers and educators in other out-of-home multicultural settings (e.g., sport training). Teachers and educators may represent the first example for children as regards how to bridge different contexts and cultures, thus in turn facilitating the daily moving of their students across diverse cultural and contextual demands. Indeed, having an ethnic background was found to impact on preadolescents' socio-emotional adjustment, highlighting the crucial role of cognitive flexibility for immigrant youths to adaptively move across diverse social situations.

In addition, the presence of an "acculturation gap" at home with parents may further compromise the possibility to move freely and adaptively across different mainstream and heritage contexts. On one hand, school-family partnerships could represent a source for favoring positive communication and reducing parent-child conflict. On the other hand, practitioners should keep in mind the crucial role of immigrant parents for their children's adjustment. Professionals should invest on parental trainings to promote adequate supervision, but at the same time they should

explore personal and cultural meanings of daily experiences for both parents and children, as to get to a potential integration and acceptance of diversity.

Notably, interventions targeting EFs are promising and increasingly common. Our results suggest that EFs represent a potential point of entry for intervention programs with immigrant early adolescents, but only if professionals keep an eye on individual differences, acknowledging that the same ability may assume different meanings and functions for different immigrants in different contexts.

In this paragraph, various actors who play a crucial role in the complex scenario of immigrant youngsters' adaptation have been mentioned, namely practitioners, teachers, researchers, parents, and local communities. We believe that coordinating prevention and intervention efforts across actors and contexts represents a crucial condition as to work effectively with immigrant children and adolescents.

However, at present integration policy in Italy takes place in a complex multi-level governance setting characterized by a high level of inconsistency between national, regional, and local definitions of integration (Caponio, 2015). This political and fragmented scenario does not favor either a nation-wide support of integration, or the support of single professionals and schools in their individual efforts towards integration and culturally sensitive approaches to immigrant families. At present, ethnic discrimination is the most common form of discrimination in Italy (Eurobarometer, 2015), and integration outcomes are not easy to achieve for immigrant preadolescents.

We believe that a key condition to allow such interdisciplinary and coordinated efforts towards integration is that policy makers invest in providing a solid and clear framework for working with migrant children in Italy, promoting interdisciplinary communication and collaboration across different professionals and contexts (e.g., schools, clinics, hospitals, university). As stated in the first paragraph, this intent would

concretely support the position of the European Union's Commission (2003) in firmly believing that to promote immigrants' adjustment, everyone should be helped to reach a full economic, social, cultural, and political participation in the host society.

6.7. Conclusions

The present research was underpinned by the assumption that development and adaptation of immigrant youth are embedded in a complex set of relationships and in a broader social, cultural and political context that affects acculturation processes, individual and cognitive functions, and adaptation outcomes (Motti-Stefanidi et al., 2012). Results from our studies largely supported this assumption.

Immigration certainly involves a wide array of life changes and challenges, including those arising from the daily need to move and adapt to different cultural worlds and contexts. Our findings provide insight into the challenges that immigrant early adolescents may face, but also show how youth with a migration background can transform these challenging experiences into resources to cope adaptively with everyday life demands. These results also suggest a potential protective role of EFs, as well as of parental practices, and point to the potential benefits of interventions aimed at reducing discrimination, promoting interdependence and aiding intercultural contact and integration to promote socio-emotional adjustment during early adolescence.

Much more needs to be done before any conclusions can be drawn, but nonetheless we hope that this work contributes to restoring the due importance of personal differences and meanings across contexts and cultures. The migratory experience should be captured in all its nuances. We need to understand that there are many common denominators of experience across ethnic groups, as well as specificities of each group and individual. For too long researchers gave way to negative perceptions

of immigrants, ignoring ethnic differences and promoting stereotypes of “problem” and “model” minorities, overlooking the complexity of immigrants’ experience.

To conclude, in the present work we tried to look directly into that complexity, as to give our contribution to the long and slow process of unravelling the knot of early adolescent immigrants’ adaptation. Indeed, crossing the bridge between cultures and contexts is possible, but it should be done with caution and with a genuine interest in the meaning that each step assumes for each immigrant. To use a paradoxical expression, in line with our findings and with the words of the anthropologist Clyde Kluckhohn (1949) cited at the beginning of the chapter, regardless of our differences we are all the same.

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Appendix A

AIC, Akaike Weights and R^2 of all models extracted separately for prosocial behavior (a) and social competence (b) as dependent variables ($n = 488$).

a)

Models	AIC	Akaike Weight	R^2
Model 1	611.60	<.01	.12
Model 2	608.31	<.01	.12
Model 3	606.00	<.01	.11
Model 4	604.01	<.01	.11
Model 5	602.03	<.01	.11
Model 6	600.07	<.01	.11
Model 7	598.12	<.01	.11
Model 8	596.23	<.01	.11
Model 9	594.52	<.01	.11
Model 10	592.66	<.01	.11
Model 11	590.93	<.01	.10
Model 12	587.77	<.01	.10
Model 13	585.92	.01	.10
Model 14	583.54	.04	.09
Model 15	581.73	.10	.09
Model 16	580.29	.20	.09
Model 17	579.54	.29	.09
Model 18	579.18	.35	.08

Note. The selected model is highlighted in bold type.

Model 1= Gender+Age+Socio Economic Status+IQ+Independent self+Interdependent self+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x Interdependent self+Independent self x Working memory+Independent self x Inhibitory control+Independent self x Cognitive flexibility+Interdependent self x Working memory+Interdependent self x Inhibitory control+Interdependent self x Cognitive flexibility+ Independent self x Ethnicity+ Interdependent self x Ethnicity +Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+ Independent self x Working memory x Ethnicity+Independent self x Inhibitory control x Ethnicity+Independent self x Cognitive flexibility x Ethnicity+Interdependent self x Working memory x Ethnicity+Interdependent self x Inhibitory control x Ethnicity+Interdependent self x Cognitive flexibility x Ethnicity;

Model 2= Gender+Age+Socio Economic Status+IQ+Independent self+Interdependent self+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x Interdependent self+Independent self x Working memory+Independent self x Inhibitory control+Independent self x Cognitive flexibility+Interdependent self x Working memory+Interdependent self x Inhibitory control+Interdependent self x Cognitive flexibility+ Independent self x Ethnicity+ Interdependent self x Ethnicity +Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+ Independent self x Working memory x Ethnicity+Independent self x Inhibitory control x Ethnicity+Independent self x

Inhibitory control+Independent self x Ethnicity+ Interdependent self x Ethnicity
 +Working memory x Ethnicity+Inhibitory control x Ethnicity+Interdependent self x
 Inhibitory control x Ethnicity;

Model 14= Gender+IQ+Independent self+Interdependent self+Working
 memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x
 Working memory+Independent self x Cognitive flexibility+Interdependent self x
 Inhibitory control+Interdependent self x Ethnicity +Working memory x
 Ethnicity+Inhibitory control x Ethnicity+Interdependent self x Inhibitory control x
 Ethnicity;

Model 15= Gender+IQ+Independent self+Interdependent self+Working
 memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x
 Working memory+Interdependent self x Inhibitory control+Interdependent self x
 Ethnicity +Working memory x Ethnicity+Inhibitory control x Ethnicity+Interdependent
 self x Inhibitory control x Ethnicity;

Model 16= Gender+Independent self+Interdependent self+Working
 memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x
 Working memory+Interdependent self x Inhibitory control+Interdependent self x
 Ethnicity +Working memory x Ethnicity+Inhibitory control x Ethnicity+Interdependent
 self x Inhibitory control x Ethnicity;

Model 17= Gender+Independent self+Interdependent self+Working
 memory+Inhibitory control+Ethnicity+Independent self x Working
 memory+Interdependent self x Inhibitory control+Interdependent self x Ethnicity
 +Working memory x Ethnicity+Inhibitory control x Ethnicity+Interdependent self x
 Inhibitory control x Ethnicity;

**Model 18=Gender+Independent self+Interdependent self+Working
 memory+Inhibitory control+Ethnicity+Independent self x Working
 memory+Interdependent self x Inhibitory control+Interdependent self x
 Ethnicity+Inhibitory control X Ethnicity+Interdependent self x Inhibitory control
 x Ethnicity**

b)

Models	AIC	Akaike Weight	R ²
Model 1	1993.74	<.01	.19
Model 2	1989.86	<.01	.19
Model 3	1986.13	<.01	.19
Model 4	1982.34	<.01	.19
Model 5	1979.10	<.01	.19
Model 6	1975.21	<.01	.19
Model 7	1973.21	.01	.19
Model 8	1971.24	.03	.19
Model 9	1969.43	.07	.19
Model 10	1967.73	.16	.19
Model 11	1966.56	.29	.19
Model 12	1965.78	.43	.19

Note. The selected model is highlighted in bold type.

flexibility+Interdependent self x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Interdependent self x Inhibitory control x Ethnicity+Interdependent self x Cognitive flexibility x Ethnicity

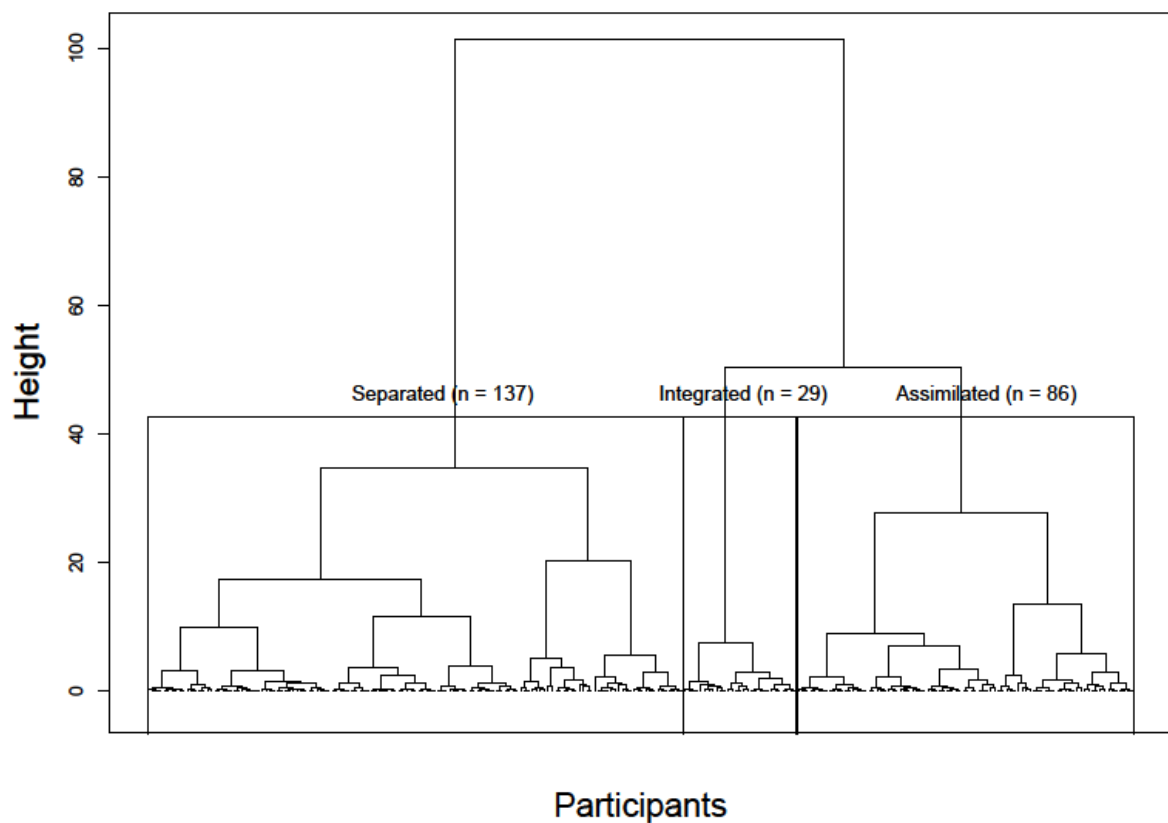
Model 11=Gender+Age+Independent self+Interdependent self+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x Working memory+Independent self x Cognitive flexibility+Interdependent self x Inhibitory control+Interdependent self x Cognitive flexibility+Interdependent self x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Interdependent self x Inhibitory control x Ethnicity+Interdependent self x Cognitive flexibility x Ethnicity

Model 12=Gender+Age+Independent self+Interdependent self+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Independent self x Cognitive flexibility+Interdependent self x Inhibitory control+Interdependent self x Cognitive flexibility+Interdependent self x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Interdependent self x Inhibitory control x Ethnicity+Interdependent self x Cognitive flexibility x Ethnicity

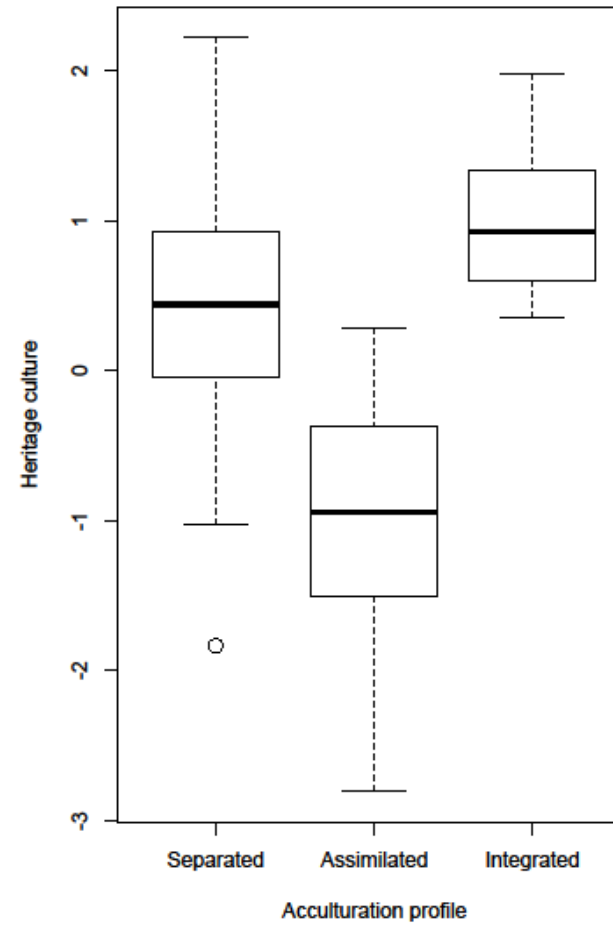
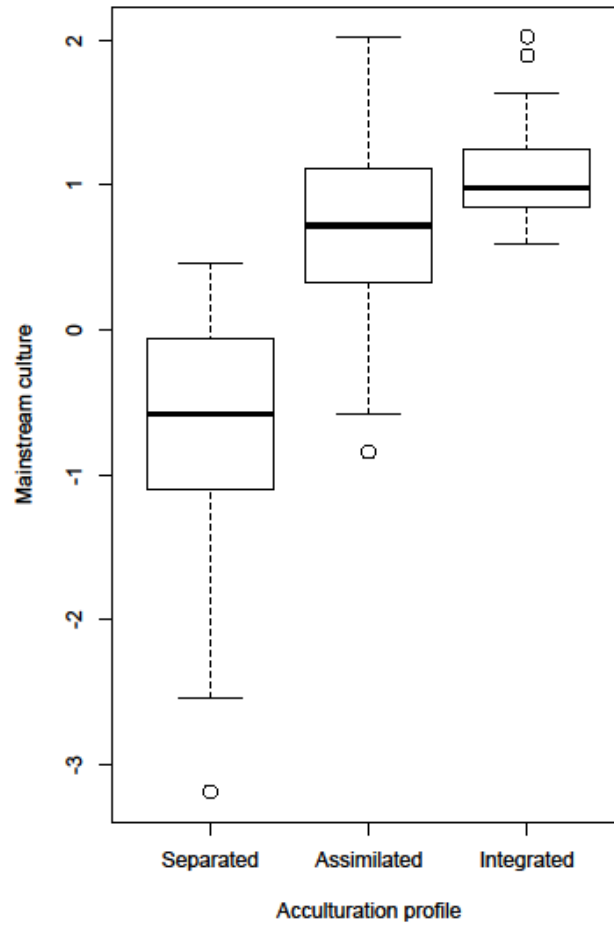
Appendix B

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 immigrant early adolescents. Error bars represent standard errors of associated means ($n = 252$; Separated $n = 137$, Assimilated $n = 86$, Integrated $n = 29$).

a)



b)



Appendix C

AIC, Akaike Weights and R^2 of all models extracted separately for internalizing problems (a) and externalizing problems (b) as dependent variables ($n = 252$).

a)

Models	AIC	Akaike Weight	R^2
Model 1	594.00	1%	.22
Model 2	591.44	4%	.22
Model 3	589.45	12%	.22
Model 4	587.62	30%	.21
Model 5	586.54	52%	.21

Note. The selected model is highlighted in bold type.

Model 1=Gender+Socio-Economic Status+Non-Verbal intelligence+Generation+Age+Discrimination+Acculturation orientation clusters+IC+Ethnicity+Discrimination x Acculturation orientation clusters+ Discrimination x IC+Discrimination x Ethnicity+Acculturation orientation clusters x IC+Acculturation orientation clusters x Ethnicity+IC x Ethnicity+Discrimination x Acculturation orientation clusters x Ethnicity + Discrimination x Acculturation orientation clusters x IC+Discrimination x IC x Ethnicity+Acculturation orientation clusters x IC x Ethnicity;

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

Model 3= Socio-Economic Status+Non-Verbal Intelligence+Generation+Age+Discrimination+Acculturation orientation clusters+IC+Ethnicity+Discrimination x Acculturation orientation clusters+ Discrimination x IC+Discrimination x Ethnicity+Acculturation orientation clusters x IC+Acculturation orientation clusters x Ethnicity+IC x Ethnicity+Discrimination x Acculturation orientation clusters x Ethnicity + Discrimination x Acculturation orientation clusters x IC+Discrimination x IC x Ethnicity;

Model 4= Socio-Economic Status+Non-Verbal Intelligence+Generation+Age+Discrimination+Acculturation orientation clusters+IC+Ethnicity+Discrimination x Acculturation orientation clusters+ Discrimination x IC+Discrimination x Ethnicity+Acculturation orientation clusters x IC+Acculturation orientation clusters x Ethnicity+IC x Ethnicity+Discrimination x Acculturation orientation clusters x IC+Discrimination x IC x Ethnicity;

Model 5=Socio-Economic Status+Non-Verbal Intelligence+Generation+Discrimination+Acculturation orientation clusters+IC+Ethnicity+Discrimination x Acculturation orientation clusters+

**Discrimination x IC+Discrimination x Ethnicity+Acculturation orientation clusters
x IC+Acculturation orientation clusters x Ethnicity+IC x Ethnicity+Discrimination
x Acculturation orientation clusters x IC+Discrimination x IC x Ethnicity.**

b)

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.

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

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

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

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

Model 5=Gender+Socio Economic Status+Age+Non-Verbal Intelligence+Discrimination+Acculturation orientation clusters+ IC+Ethnicity+Discrimination x Acculturation orientation clusters+Discrimination x IC+Discrimination x Ethnicity+Acculturation orientation clusters x IC +IC x

Ethnicity+Discrimination x Acculturation orientation clusters x IC+Discrimination x IC
x Ethnicity;

**Model 6=Gender+Age+Non-Verbal Intelligence +
Discrimination+Acculturation orientation clusters+ IC+Ethnicity+Discrimination
x Acculturation orientation clusters+Discrimination x IC+Discrimination x
Ethnicity+Acculturation orientation clusters x IC +IC x Ethnicity+Discrimination
x Acculturation orientation clusters x IC+Discrimination x IC x Ethnicity.**

Appendix D

AIC, Akaike Weights and R^2 of all models extracted for emotional and behavioral problems as dependent variable ($n = 262$).

Models	AIC	Akaike Weight	R^2
Model 1	785.64	<.01	.32
Model 2	783.64	<.01	.32
Model 3	781.65	<.01	.32
Model 4	779.67	<.01	.32
Model 5	777.76	<.01	.31
Model 6	775.81	<.01	.31
Model 7	773.87	<.01	.31
Model 8	771.99	<.01	.31
Model 9	770.13	<.01	.31
Model 10	768.28	<.01	.31
Model 11	766.43	.01	.31
Model 12	764.75	.02	.31
Model 13	763.64	.04	.31
Model 14	762.55	.07	.31
Model 15	761.65	.10	.30
Model 16	760.96	.14	.30
Model 17	760.28	.20	.30
Model 18	758.89	.41	.30

Note. The selected model is highlighted in bold type.

Model 1= Age+Gender+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Working memory+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working memory+Positive parenting x Inhibitory control + Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity + Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Working memory x Ethnicity+Poor supervision x Inhibitory control x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Working memory x Ethnicity+ Positive parenting x Inhibitory control x Ethnicity+ Positive parenting x Cognitive flexibility x Ethnicity;

Model 2= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Working memory+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working

memory+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Working memory x Ethnicity+Poor supervision x Inhibitory control x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Inhibitory control x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 3= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Working memory+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working memory+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Working memory x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Inhibitory control x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 4= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Working memory+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working memory+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Working memory x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 5= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Working memory+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working memory+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 6= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive

parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Working memory+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 7= Gender+Age+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 8= Gender+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Inhibitory control x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 9= Gender+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Inhibitory control+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 10= Gender+Socio-economic status+Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Poor supervision x Positive parenting+Working memory x Inhibitory control+Working memory x Cognitive flexibility+Inhibitory control x Cognitive flexibility+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Working memory x

parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Working memory x Inhibitory control+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity+Positive parenting x Cognitive flexibility x Ethnicity;

Model 17=Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Working memory x Inhibitory control+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Cognitive flexibility+Positive parenting x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity

Model 18=Non-verbal IQ+Receptive vocabulary+Poor supervision+Positive parenting+Working memory+Inhibitory control+Cognitive flexibility+Ethnicity+Working memory x Inhibitory control+Poor supervision x Inhibitory control+Poor supervision x Cognitive flexibility+Poor supervision x Ethnicity+Positive parenting x Ethnicity+Cognitive flexibility x Ethnicity+Poor supervision x Cognitive flexibility x Ethnicity

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