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Family Processes and Adolescents' Adjustment: the Dyadic Contribution of Mothers and Fathers

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CHAPTER I

GENERAL INTRODUCTION

The Study of Families in a Developmental Systemic Framework

As supported by family researchers since the early years and theorizations, *Relationism* constitutes a major paradigm for family studies and it is defined as the set of the fundamental principles that considers individual embedded in an open, dynamic and living systems (Overton, 2013). Despite differences in the focus of their work, the early family systems theorists converged on the following set of principles that defined the systemic approach (see Bateson, 1972; Ford & Lerner, 1992; Minuchin, 1974; Wagner & Reiss, 1995):

1) ***Wholeness.*** A system is composed of elements (family individual members) and a whole, with patterns of connections among the parts and between each part and the whole. This means that the behavior of a system cannot be explained by the simple sum of its constituent elements. In family systems theories, each component of the system reveals peculiar features within it, which cannot emerge in isolation, but thanks to the relationships that each member has with each of the others. For example, an individual may develop his/her potentials only by living within a socio-cultural system, interacting with other individuals and symbols according to determined organizational principles.
2) ***Locus of Problems***. Problems and symptoms are located in the system and are not referred only to individual members. The family member who gives signals of maladjustment or present symptoms is regarded as the *identified patient*, because other family members have designated this person as the problem, but the therapist is called to locate the pathology in the family as a whole and helps the family to do the same.
3) ***Subsystems***. The individual family members are organized in the family system in different subsystems (e.g. parental dyad, parent-child dyad) that are interrelated and operate in multiple ways.

4) ***Boundaries***. Around each subsystem there is an invisible enclosure called a boundary (Minuchin, 1974; 1988). One of the key defining properties of subsystems is whether the boundaries are rigid (subsystems are disengaged from each other) or permeable (subsystems become enmeshed so that there is no separation between the life of the parental couple and the life of the children).

5) ***Circular Causality.*** Family systems theories assume that causality is *circular*. There is mutual regulation according to which change in one person in a relationship can lead to a change in the other (A → B) or change can take place in a repeating chain (A → B → C → A). Interventions may be then addressed to change the relationship patterns.

6) ***Structure and Process.*** The concepts of structure and process help researchers understand how families operate to produce both *stability* and *change* in the system over time. Structures are like static representations of the formal relations between the parts and the whole, such as whether the parts are connected (e.g. family size; marital status; number of family members). The process aspect of a system refers to dynamic qualities such as the quality of relationships (including closeness and distance, unresolved conflict, parenting style) and the permeability of boundaries.

7) ***Homeostasis.*** The concept of homeostasis describes how the system operates in self-regulating ways that can amplify or reduce the power of external stressors to affect the quality of family life. Homeostasis guarantees to family members the maintenance of a balance in the relational patterns among family members that can assume both a negative (dysfunctional) and a positive valence.

Based on these pivotal elements, the acknowledgement that families are systems of relationships that originate, maintain and /or change through processes whose nature is at the same time interpersonal and socially-driven, was then consolidated within the framework of the Systemic Theory (Lerner, 2012). The focus on individual and family development has extended the systemic theories focusing on the concepts of *change* and *stability*. According to Ford and Lerner (1992)

humans are represented as “multilevel, contextual organizations of structures and functions” (p. 47) who exhibit varying kinds of stability and variability and who can change both in and between levels. Individual development, according to these theorists: *“*involves incremental and transformational processes that, through a flow of interactions among current characteristics of the personal and his or her current contexts, produces a succession of relatively enduring changes that elaborate or increase the diversity of the person’s structural and functional characteristics and the patterns of their environmental interactions while maintaining coherent organization and structural-functional unity of the person as a whole.*”* (Ford & Lerner, 1992, p. 49).

Such definition implies the individual possibility to change during the lifespan by following multiple and nonlinear developmental pathways, discontinuities, and the emergence of new forms. The *Contextual-Evolutionary* metamodel (Lerner, 1986, 1989) emphasizes the dynamic influence between the organism and the environment. Interaction between systems it should not be intended as linear but as a dynamic process which results in the change in the nature of both systems. In this regard, the entire structure (not only individual factors) generates the individual behavior and the evolutionary change it is the product of changing relationships (Ford & Lerner, 1995).

The rationale of the present dissertation is based on the idea that in order to fully understand the mechanisms that generate evolutionary change, is necessary to move away from a linear causality perspective and consider the interactions that are based on a mutual causality. For the purpose of the present study, it is relevant the application of this metamodel to family relationships with specific reference to the claim that child development and family structure and function should be viewed as part of an integrated developmental system within the broad and integrated ecology of human development (Bronfenbrenner, 1977, 1979). Within this ecology, there are bidirectional and reciprocal influences among all members of the family across their life spans and also across the family life cycle. On this regard developmental family theorists (e.g. Bornstein, 2015; Lerner and Spanier,1978; Overton, 2013; 2015) posited that the reciprocal links within the families should be examined in order to describe their developmental processes.

Accordingly, the *Relational Developmental Systems* meta-theory (RDS), used to frame several theories of human development, is derived from a process-relational paradigm whose main principles have been described by Overton (2013) and in many other sources (e.g., Lerner et al., 2015). RDS are characterized by the *holism* that considers the whole as not reducible to component parts, but as emerging from transactions among them; the principle of *active organism* defines organisms as open systems that are self-regulating rather than passive reactors to environmental inputs. Developmental trajectories are characterized by a degree of *constrained plasticity*, that determines a certain degree of variation and openness, which is, nevertheless, constrained by a variety of factors and thus is not entirely open ended. *Bidirectionality* in a relational model contrasts with one-way, unidirectional causal models: within a family there are bidirectional influences among all members of the family across their life spans and also across the family life cycle. *Multiple levels of context*: individuals and families are embedded in many different contexts in transaction with one another and these transactions are oriented on becoming rather than on being, on dynamics rather than stasis (*Process orientation)*. The stability of development or relationships is also assumed to be maintained via dynamic processes.

In this framework, the individual's mutually influential links with his/her family, that is, mother-fathers and adolescent–parent relationships, constitute the foundational instances of these relations in human development. When these bidirectional relations, these developmental regulations, are mutually beneficial to both individual and context, to both the adolescent and his/her parent, they may be considered adaptive developmental regulations (Brandtstädter,1998). Over the course of the young person's relationships with his/her family, some of these instances of adolescent–parent developmental regulations might result in maladaptive outcomes. Indeed, an important contribution of considering parental mutual influences is that it describes the exchanges between parents' attitudes and functions that may be either positive or negative in valence (in regard to indicating youth adjustment or well-being) in the presence of diverging or converging behaviors. Within the

interactions between mothers and fathers, components of converging and diverging behaviors, outcomes may be positive or negative.

This possibility allows for rich and complex descriptions of the importance to consider parental reciprocal influences for youth and family functioning. On this regard, the methodological challenges of designing and analyzing data that are dyadic in nature are addressed in the present work by accounting for several key points. First, we included both members of the interactions and not simply controlled for the effects of one parent's behavior over the other. Second, solid analytical models have been implemented to address the dyadic nature and of the data and to take into account the non-independence of reports from the same family members. Third, development and change have been addressed by implementing longitudinal-designed models in which both stability and change have been taken into account and descripted.

Indeed, the overall aim of the present work was to demonstrate the benefit of analyzing data according to such dyadic perspective and highlight the dynamics of mother-father relationships. The conceptual emphasis in relational developmental and the definition of systems as individual–context relations was addressed by focusing on longitudinal and cross-cultural associations of mother – father couple and parental relationships.

Parenting during Adolescence

During adolescence, the parent–adolescent relationship changes widely compared to the childhood period. A substantial renegotiation of roles, rules, and expectations takes place during this developmental phase (Collins & Laursen, 2004) and parental supervision, behavioral control, and communication decline (Loeber et al., 2000). Adolescents' growing capacity to think about relationships abstractly tends to challenge parental authority more than younger children, which can lead to a reorganization and renegotiation of family roles and parent–adolescent relationships. (Smetana, Metzger, Gettman, & Campione, 2006). Parents and adolescents spend much less time together, as teens spend more time with friends and peers (Carlson & Magnuson, 2011; Steinberg, &

Morris, 2001). In addition, to the peer influences, also autonomy and independence from their parents increase. However, as noted by many scholars (Grotevant, 1998; Steinberg, 2001; Steinberg & Silk, 2002), despite this growing distancing, parents remain an important resource for adolescents' growth.

Parental practices such as monitoring, supervision, and control need to be re-negotiated as well to allow for more autonomy and independence (Dishion & McMahon, 1998): knowledge of friends and adolescents' whereabouts becomes important for reducing high-risk behaviors like delinquent behaviors, substance abuse, and other behavioral problems (e.g. Barber, 1996; Steinberg, & Morris, 2001). On the other hand, negative forms of control, such as Psychological Control has been found to be detrimental for a positive adjustment because it aims to intrude in the adolescents' psychological world, by impeding adolescents' autonomy and independence developing processes (Soenes et al., 2010). According to developmental systems theories (Ford & Lerner, 1992; McHale et al. 1984, 2004; Sameroff, 2010) both parents contribute to and affect parent-child interactions and child's development. However, the literature reports contrasting results on how Psychological Control is used differently by mothers and fathers and many studies linking PC with child adjustment only evaluate the mother's PC or evaluate it without differentiating maternal from paternal influences (Soenens et al., 2010). The present research project aims to fill this gap the literature on Psychological Control by focusing on maternal and paternal dyadic influences on parenting during adolescence.

Mothering and Fathering: from a comparative to a reciprocal perspective

As parenting changes from childhood through adolescence in response to the social, cognitive, and biological development that marks adolescence, parenting practices are also responsive to the context in which families reside and according to the developmental framework outlined in this work, it is evident that the quality of relationships among family members, independently and in interaction, impact adolescent development and mental health outcomes (Feinberg, 2003). The role of mothers and fathers and the quality of their interactions plays a key role in the developing positive parenting, yet research focuses almost exclusively on the mother–child dyads (Lamb, 2012). Despite an increase

of studies on fathers in recent decades, most studies of parenting neither include fathers nor control for fathers' effects on children's outcomes. The debate on the unique or similar contribution of mothers and fathers has characterized the past half century in which some fathering researchers have attempted to conceptualize fathers' and mothers' parenting behaviors as separate sets of multidimensional constructs (e.g., Gadsden, Fagan, Ray, & Davis, 2004; Lamb, 1982; 2012). Parent gender-based involvement studies highlighted how mothers are those devoted to provide a sense of security through warm and responsive involvement in caregiving, didactic play, and educational activities in the home and school setting (Bowlby, 1969;1982; McHale, 2012); fathers are considered as those bearing the role of breadwinners in the family household, those who encourage children to explore and develop a sense of autonomy through physically rough-and-tumble play (Newland & Coyl, 2010; Paquette & Bigras, 2010; Yeung et al., 2001). However, it is now well-established that both men and women have the capacity to be good parents and both mothers and fathers may engage in activities which promote security as well as exploration (e.g. Ho et al., 2011; Lamb & Lewis, 2010).

The present study is included in the debate on whether the field should continue to seek different gender-based dimensions (i.e., unique contribution) of fathers' and mothers' parenting behaviors or whether the field should focus on the relational dimensions of parenting. In the present dissertation we attempted to move forward from a comparative perspective – *are mothers more present than fathers?* – to a perspective that "allows us to view ''parenting'' as deriving from the parental dyad and the interplay of the dyad members, rather than being enacted separately as ''mothering'' and ''fathering'' by individuals independently trying to nurture or deal with the same child" (Nelson et al., 2006, p. 556). A person's sex does not determine the capacity to be a good parent. A plethora of studies keeps showing that mothers and fathers influence children's development in the same (non-gendered) ways promoting psychological adjustment when they are able to develop a relationship characterized by care, love and engagement (e.g. Lamb & Lewis, 2010). On this regard, studies on same-sex parents showed that children and adolescents raised in this families are not psychologically at risk on account of the family structure (Golombok & Tasker, 2010;

Patterson et al., 2002; Tasker, 2005). However, decades of research have shown that fathers and mothers frequently have different beliefs about what it means to be a good parent and that gender socialization is deeply influenced by the ways fathers and mothers engage with children (Doucet, 2009; Lamb, 2012; Pedersen, 2012).

The present dissertation – even though families in our sample are included in the classical definition of family as a nuclear form consisting of biological, heterosexual, and married parents (Parke, 2013) – focused on the reciprocal and relational nature of parenting and aims to test models and hypotheses that might ideally apply also to other forms of families. Our study is based on the reasoning that the dyadic perspective more accurately represents the joint nature of parenting.

Marital Relationship Quality and Parenting

Family systems theorists have long recognized that marital relationship quality affects parenting and the parent– child relationship (e.g. Cox, Paley, & Harter, 2001). Several mechanisms have been proposed to explain the link between marital relationship quality and parenting. One proposed pathway is through disruptions from mother and fathers couple negativity to the parent–child relationship defined known as the *spillover hypothesis* (Cox, Paley, & Harter, 2001; Davies & Cummings, 1994; Grych & Fincham, 1990). Broadly, the spillover hypothesis refers to "the transfer of mood, affect, or behavior from one setting to the next" (Almeida et al., 1999, p. 49) and in context of family relationships it represents the process through which the negative feelings and behaviors between spouses to spillover and predict negative interactions with their children. Strong and positive maternal and paternal relationships are associated with family stability and lower divorce rates (e.g. Amato, 2007) and better health outcomes for adults and children (Wood, Goesling, & Avellar, 2007). Adults with strong marital bonds also tend to have more positive parental engagement and better parent–child relationships (Davies & Cummings, 1994). Marital quality between parents has also been found to have positive effects on children who have experienced stressful circumstances, such as the deployment of a parent to war (Orthner & Rose, 2007). Studies supporting the Family Stress

Model (Conger & Donnellan, 2007; Conger & Conger, 1994) posit that families' stressors influence children and adolescents' development indirectly through the parental emotional distress derived from them. The distress can affect parenting practices, both directly and indirectly through effects on marital relationships, and these negative parenting practices ultimately impact youth's developmental outcomes (Conger & Conger, 2002; Ponnet, 2014). Marital relationship represents the primary source of support for parents (Belsky, 1984) and coping processes have been extensively studied in dyadic relationships, showing to play a very important role in couple's dynamics (Randall & Bodenmann, 2009). Dyadic Coping, enabling partners to support and help each other cope with the experienced stress (Bodenmann, 1995; 1997), may mitigate the negative stress spillover process that might pass from mother-father dyads to parent-adolescents relationship.

In this perspective, we were interested in testing the spillover hypothesis by examining longitudinal links between marital Dyadic Coping and parent–adolescents relationship quality in the occurence of family stressful life events and family stressors in the everyday context of the home (i.e. *Family Chaos*).

Parenting and Culture

Congruent with a developmental-contextual perspective that include the possibility for contexts to vary, Lerner (1995) theorized contexts as *intraorganismic* or *extraorganismic*. An intraorganismic context involves biologically based characteristics (e.g., genes, brain, central nervous system) and an intrapersonal context involving personal characteristics (e.g., cognitions, emotions, personality). In an *extraorganismic* context, interpersonal context involves social interactions and relationships (e.g., family, peers) and a superordinate context, including aggregates of individuals such as ethnic group, social class and culture. The author states how these different contexts may be considered separately for purposes of analysis, but they are really interrelated.

In the present dissertation, we examined the role of culture by comparing dyadic developmental models across different countries. Culture has several assumptions leading to different

implications for research and work with families (Bornstein, 2015). For instance, contexts change over time and, consequently, the adaptive values of cultural beliefs and practices, may also change, so culture can persist, but can also be transmitted from one generation to the next and specific cultural variables may change over time. Parents are crucial transmitters of cultural information and based on the child's experience and relationship with the parent, parental behaviors and roles (e.g. gender norms) might be interpreted as either appropriate and normal or inappropriate and abnormal, across different cultural contexts (Lansford et al., 2010). Furthermore, culture is dynamic rather than static and the nature of individuals and contexts changes over time, and culture becomes modified accordingly. Cultural practices can be altered within a generation, or modified across generations (Tomasello, 2016). Culture is mediated through social interactions and in the family socialization process this initially occurs through the parent-child relationship and subsequently through other interpersonal transactions taking place in various ecological systems (Bronfenbrenner, 1977, 1979).

According to this theorical and conceptual framework, we might expect important influences on fathers and mothers depending on their cultural background, socioeconomic class, and nationality (Lamb, 2012; Pattnaik, 2012). In order to understand fathers' and mothers' parenting behaviors with children, we need to understand each parent's behaviors and roles within the context and culture in which families are embedded. In the present dissertation, we formulated our hypotheses on dyadic family processes in a cross-cultural framework. Specifically, the hypothesized models were compared across different countries in order to test the cross-cultural generalizability of maternal and paternal reciprocal influences on parenting and adolescents' adjustment.

In order to address these aims, the studies in the present work were conducted on families drawn from a larger longitudinal and cross-cultural research project that will be presented in the following section.

The "Parent Behavior and Child Adjustment Across Cultures" Project

Participants were drawn from a larger cross-cultural and longitudinal study entitled "Parenting, Adolescent Self-Regulation, and Risk-Taking Across Culture - PAC" (e.g., Lansford, 2011; Lansford et al., 2014). The overall aim of the project was to study biological, familial, and cultural processes in the development of self-regulation and risk-taking during adolescence, as a function of maturation and socialization. The project started in 2009 with a total sample of 1,417 families with 8-year-olds children from 13 different cultures (Jinan and Shanghai for China; Colombia; Naples and Rome for Italy; Jordan; Kenya; Philippines; Sweden; Thailand; African, European, and Hispanic Americans for the United States). For the purposes of the present study, we selected data from the 5th, 6th and 7th waves of the PAC project in order to focus on the developmental stage of middle adolescence. A total sample of 975 mother-father dyads drawn from eight different countries participated to the study (189 dyads from Italy, 93 dyads from Kenya, 91 dyads from Philippines, 89 dyads from Thailand, 72 dyads from Sweden, 255 dyads from USA, 84 dyads from Colombia, 102 dyads from Jordan). At the moment the eleventh year of data collection is still ongoing. A synthesis of the project design is reported in Table 1.

Table1. Longitudinal design of the Parenting Across Cultures Project

	Y1	*Y2*	*Y3*	*Y4*	***Y5***	***Y6***	***Y7***	*Y8*	*Y9*	*Y10*	*Y11*
YOUTH	*X*	*X*	*X*	*X*	***X***	***X***	***X***	*X*	*X*	*X*	*X*
MOTHERS	*X*	*X*	*X*	*X*	***X***	***X***	***X***	*X*	*X*	*X*	*X*
FATHERS	*X*	*X*	*X*		***X***	***X***	***X***	*X*	*X*	*X*	*X*
Youth Mean Age	*8/9*	*9/10*	*10/11*	*11/12*	***12/13***	***13/14***	***14/15***	*15/16*	*16/17*	*17/18*	*18/19*

Note: Y = Wave; the X represents the data collection. Bold indicates data selected for the studies.

Outline of the Dissertation

The Study presented in **Chapter II** aimed to extend prior work on parental Psychological Control literature by providing a longitudinal examination of between and within associations of maternal and paternal Psychological Control over time, examining the perceptions of mothers and fathers simultaneously to understand whether and at which level they influence each other's parental strategies. The present work aims also to test the aforementioned associations, by distinguishing two different dimensions of Psychological Control (i.e. *Guilt Induction* and *Verbal Constrain*), and addressing the debate on the variability of parental psychologically controlling strategies (Soenes et al., 2010). Given limitations of previous studies regarding maternal and paternal longitudinal influences on Psychological Control, we implemented an extension of the classical Cross-Lagged approach (i.e. Random Intercept Cross-Lagged Panel Model, RI-CLPM) to better disentangle between- and within- dyadic processes and address the combined and differential influences of mothers and fathers' use of Psychological Control during their youth's middle adolescence (age 13, T1; age 14, T2; age 15, T3)

In the Study presented in **Chapter III**, we used three waves of data with a sample of Italian, North-American and Colombian families to explore whether and how maternal and paternal Psychological Control (i.e. *Guilt Induction* and *Verbal Constrain*) were associated during their youth's middle adolescence and how these dyadic associations affected adolescents' adjustment in the three cultures. Specifically, we investigated the longitudinal and bidirectional effects between the variables through the Actor Partner Interdependence Model (APIM, Cook & Kenny, 2005), that allows to test for dyadic associations while controlling for stability and autocorrelation effects. We further examined the moderating role of culture using multi-group comparisons among the three countries and we also tested for gender differences in these effects to further understand the associations between maternal and paternal Psychological Control in a developmental framework.

The Study presented in **Chapter IV** aimed to extend research on Dyadic Coping and its role in broader family functioning by investigating its associations with parenting dimensions (i.e. Parent-

Adolescent Relationship Quality) in the presence of family stressors. Specifically, we considered stressful *Life Events* experienced at a family-level that have been found to have a great impact on both marital relationship quality and parental practices (e.g. Belsky, 1984; Conger et al., 1994). We also considered *Household Chaos* – which includes lack of routines, noise, crowding, and clutter in the home (Evans & Wachs, 2010) - as a within family stressor that characterize the enviroment in wich all family members are embedded and experience their interactions. Little is known about the specific link between marital DC and P-ARQ and further studies are needed to investigate this association (Zemp et al., 2016). Our contribution focused on the mechanism through which supportive or unsupportive partners' coping interactions during family stressful situation influence the way they engage, as parents, in the relationship with their children. We also tested these associations longitudinally and cross-culturally on the three waves of data - also considered in Study 1 and 2 - with samples of families from eight countries (Italy, Kenya, Philippines, Thailand, Sweden, USA, Colombia and Jordan) to explore whether culture has a moderating role on the spillover effect of Dyadic Coping on parenting.

Finally, in **Chapter V**, we presented the general conclusions of this dissertation and the theoretical and empirical contribution of the combined results from the three studies.

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CHAPTER II

STUDY 1

Mothers and Fathers' Psychological Control Over Time: A Multilevel Dyadic Analysis

Abstract

Psychological Control (PC) refers to the control parents exert over their offspring through strategies that include love withdrawal, shaming and guilt induction that limit and invalidate the psychological and emotional experience of children and adolescents (Barber, 1996). According to developmental systems theories (McHale et al. 2004; Sameroff, 2010), both parents contribute to and affect parent-child interactions and child's development. However, the literature reports contrasting results on how PC is used differently by mothers and fathers and many studies only evaluate maternal PC (Soenens et al., 2010). The present study aims to extend the literature on PC considering the contribution of both parents and analyzing the direct and reciprocal influences on the use of PC over time, by disentangling the role of mothers and fathers at both between and within dyads' level. Participants were 147 Mothers-Fathers dyads were drawn from the cities of Rome and Naples (Italy) who provided data over 3 years. Participants were parents of middle adolescents averaging 13.51 years (Time 1), 14.60 years (Time 2), 15.54 years (Time 3). Parental PC was assessed via the Psychological Control and Autonomy Granting Scale; Barber et al. 1996; Silk et al., 2003). Two subscales are considered: *Guilt Induction* and *Verbal Constrain.* Random Intercept Cross Lagged Panel Models (RI-CLPM; Hamaker et al., 2015) were implemented in *Mplus* in order to disentangle within and between levels. Results showed that at a between level, parents with higher levels of Guilt Induction (and Verbal Constrain) across the three measurement periods tended to have their partners with higher levels of PC over the measurement periods, meaning that the association between maternal and paternal PC strategies is relatively stable over the course of three years. At a within-person level significant cross-lagged effects in the RI-CLPM were found in both models of Guilt Induction and Verbal Constrain, but in the latter case, reciprocal (cross-lagged) effects were found only for fathers. Implications for differences at the between and within level were discussed.

Keywords: Psychological Control, Adolescents, Parental Dyad, RI-CLPM

Introduction

Psychological Control (PC) refers to the control parents exert over their offspring through strategies that include love withdrawal, shaming, and guilt induction that limit and/or invalidate the psychological and emotional experience of their children and adolescents (Barber, 1996). Numerous

studies have demonstrated the importance of PC for adolescents' adjustment and family functioning (Symeou & Georgiou, 2017).

According to developmental systems theories (McHale et al. 2004; Sameroff, 2010) both parents contribute to and affect parent-child interactions and child's development. However, the literature reports contrasting results on how PC is used differently by mothers and fathers. For instance, the large majority of studies mostly focused on mother's PC, thereby failing to disentangle it from paternal influences (Soenens et al., 2010). Moreover, findings from studies focusing on the role of parent's gender on PC are still inconsistent and the dynamics underlying these potential differences understudied (Scharf & Goldner, 2018). The present study aimed to address and fill these gaps in the literature of PC by considering the contribution of both mothers and fathers in their use of psychological controlling strategies and testing their longitudinal and dyadic associations over time.

Parental Psychological Control

PC has been considered a pivotal construct since the early research on parenting (Barber et al., 1996; Schaefer et al., 1965). In the early 60's, Becker (1964) identified three main dimensions of PC, namely "love versus hostility", "restrictiveness versus permissiveness", and "anxious emotional involvement versus calm detachment". Similarly, Schaefer (1965) identified three parental dimensions according to the listing of parental strategies which were labeled "acceptance versus rejection", "psychological control versus psychological autonomy", and "firm control versus lax control". These dimensions were confirmed via factor analysis and were used as a conceptual model to develop his Child Report of Parent Behavior Inventory (GRPBI; 1965a, 1965b). Based on these contributions, PC became a central aspect within the theory of Baumrid and on the identification of parenting styles in which the dimension of intrusiveness characterized the parental typologies associated with a negative adjustment in children (Baumrid, 1991).

In his attempt to reconceptualize the construct and its theoretical implications, Barber (1996) defined PC as "…insidious type of control that potentially inhibits or intrudes upon psychological development through manipulation and exploitation of the parent-child bond (e.g., love-withdrawal and guilt induction), negative, affect-laden expressions and criticisms (e.g., disappointment and shame), and excessive personal control (e.g., possessiveness, protectiveness)." (p. 3297). The author emphasized the concepts of manipulation and intrusiveness in the "adolescent world" that sees its autonomy undermined and its ability to create its own identity (Barber et al., 1994).

PC has been found to be detrimental for many aspects of adolescents' adjustment, in terms of internalizing behaviors, such as depression (e.g. Soenes et al., 2012) and lower self-confidence and self-esteem (e.g. Givertz & Segrin, 2014). Among the problematic behaviors associated with parental PC, scholars include also externalizing behaviors (Pettit et al., 2001) and social problems (Gaertner et al., 2010).

A fundamental aspect in the conceptualization of PC is the theoretical and methodological distinction between *psychological* from *behavioral* control (Barber, 1996; Steinberg et al., 1990). While the first refers to strategies specifically aimed at manipulating and intruding the psychological and emotional development of children, behavioral control refers to a set of active parental strategies involving the communication of clear rules and consistent expectations for appropriate behavior and efforts to monitor the child's behaviors and activities (e.g. Laird, 2011; Steinberg,1990). Studies that distinguished these two forms of control reported that they had different effects on the adjustment of children (Barber , 1996; Petitt et al., 2001; Pinquart, 2017), specifically, while PC has been consistently associated with detrimental effects on child development, behavioral control, by indicating clear behavioral boundaries while allowing children age-appropriate independence, has been found to promote the development of self-control in the child, which inhibits externalizing problems (e.g. Lansford et al., 2014). Moreover, behavioral control has been found to play an important role in the prevention of risk behaviors (Fung & Lau, 2012).

The majority of the aforementioned studies showed the relevance of PC specifically for adolescents' development (Silk et al., 2003; Soenes et al., 2008), by testing the direct effects of parental (mostly maternal) psychologically controlling strategies on their offspring autonomy-related experiences. However, very limited studies have examined how the PC articulates on the within-family level and in particular at the parental dyad level. According to family developmental theoretical perspectives, the present study aims to examine the parental dyadic dynamics over time, by testing reciprocal influences between maternal and paternal parenting strategies, in order to shed a light on mothers and fathers' use of PC with their adolescents.

Adolescence is a very important period of changes that involve all aspects of an individual's life. The relevant psychological, biological, and interpersonal changes during this developmental period accompany the drive towards the exploration and the formation of one's own identity through the discovery of the world (Bornstein et al., 2011). The family context, which is predominant through all the previous phases, starts to be more open to the broader social context including: (a) friendships that become a privileged field of exploration, (b) modeling and construction of one's own identity (Kerr & Bowen, 1988). Adolescents start to grow in maturity and independence passing through fundamental phases for personal development defined as *individuation* and *differentiation* (Minuchin, 1974). Through these processes, individuals create separate identities by becoming progressively independent from families of origin. Some of the essential elements for *individuation* and *differentiation* to occur and lead to a positive adjustment, are undoubtedly the concepts of control and autonomy that individuals experience in adolescence (Barber et al., 2002). Research and theorizing on the relevance of parental PC on adolescent's development were based mainly on three major theoretical frameworks (Scharf & Goldner, 2018).

The first is the Self-Determination Theory (Ryan & Deci, 2000) that postulates that people's well-being depends on the satisfaction of three basic psychological needs: *autonomy*, *competence*, and *relatedness*. *Autonomy* concerns the voluntary, unconstrained nature of the action. C*ompetence* highlights the mastery of the actions and individual fulfillment is obtained in being and feeling expert,

competent, capable of something, and developing skills. *Relatedness* entails the feelings of being part and belonging to a group, feeling valued in the group and more generally in the social context. In order to satisfy them, individuals must develop self-determination, a combination of skills, potential, and knowledge that will lead them to reach their goals (Deci &Ryan, 2008). According to this framework, parental PC hinders and violates the satisfaction of the basic needs of autonomy and relatedness when parents try to manipulate their children by undermining the balance between support and autonomy.

The second body of research on PC comes from the Attachment Theory (Bowlby, 1969) which focuses on the sense of security that the children develops in terms of internal working models through which they interpret the world (Waters & Cummings, 2000). Parents are the most important attachment figures as they represent safe bases to which children can return in case of need during their exploration of the world. Parental PC, through the induction in the child of states of guilt, threats of loss of parental affection, undermines the formation of a proper sense of security by keeping the children in constant uncertainty of relatedness /closeness (Soenes et al., 2010).

Family System Theories (Boszormenyi-Nagy & Spark, 1973) contributed also to interpreting and conceptualizing parental PC. According the System Theory families are characterized by the presence of systems and subsystems operating in concert and contributing to the family functioning. The key elements of this theorization are those of homeostasis, hierarchy and boundaries that regulate the processes through which family systems and sub-systems are structured (Ford & Lerner, 1992; Wagner & Reiss, 1995). The influence of parental PC is articulated precisely within these processes. Differentiation involves the adolescent's ability to regulate distance and maintain boundaries in the interactions with other family members (Holmbeck et al., 2002). In this attempt to negotiate family boundaries and members' roles, psychologically controlling strategies, such as intrusiveness, guilt induction, threat of the withdrawal of affection, have the effects of hindering the definition of clear boundaries that allow the adolescent to differentiate and identify himself/herself (Bugental & Grusec, 2006).

Studies drawn from these theoretical frameworks show how PC undermines the primary needs and development processes of adolescents. Parental PC has been defined as parents' lack of ability to recognize themselves as differentiated, yet connected to their children, that leads to the implementation of maladaptive parenting strategies (Bornstein & Sawyer, 2006; Soenes et al., 2012) and playing a central role, yielding negative affects- such as shame, guilt- in children. A focus on the role and dynamics that the parental dyad experience in their parenting process therefore becomes fundamental.

Maternal and Paternal Psychological Control

Within families, parents represent the most influential figures on child development (Clark-Stewart & Dunn, 2006). Although research consistently demonstrates that parenting influences the offspring in numerous ways, studies of parenting typically focus on mothers rather than fathers by considering the behaviors and attitudes of the former as normative (Belsky, 1981; Luebbe et al., 2014). The debate regarding the potential similarities or differences between mothers' and fathers' PC and previous studies that have included both mothering and fathering measures have shown contradictory findings and patterns of mothers and fathers' differential effects that need to be replicated (Amato, 1998; Soenes et al., 2010).

When examining PC, both parental and youth's gender may be important to consider (Crick and Zahn-Waxler, 2003; Scharf & Goldner, 2018). In their study, Aunola and Nurmi (2005) testing the effects of several parental strategies, found that mothers' strategies – including PC - was associated more strongly with child's problem behaviors than was fathers' parenting. Similarly, Rogers et al. (2003), examining parents of sixth- and seventh-grade students, found that cross-sectionally, fathers' PC predicted higher adolescent-reported internalizing problems both for boys and for girls only when also mothers were perceived as high in PC. In addition, fathers' PC predicted higher externalizing only for girls and only when mothers were perceived as high in PC. Roman and

colleagues (2012) in a sample of South African young adults, found that maternal PC compared to paternal PC was a stronger predictor of participants' antisocial behaviors.

Some studies have found independent effects of mothers' and fathers' PC. Buehler and colleagues (2006), examining the mediating effects of mothers' and fathers' harshness, monitoring knowledge, and psychological intrusiveness on the association between marital hostility and adolescents' problem behavior, found that maternal and paternal strategies uniquely and differentially mediated this association, meaning that neither mothers nor fathers were the primary source of influence. Finally, some studies found similarity in the use of PC on children (Kuczynski & Kochanska, 1995; Mason et al., 1996) showing that levels and influences of parental PC on children and adolescents' adjustment were consistent across mothers and fathers.

The ways in which mothers and fathers educate their children appear to affect children's outcomes differentially in some circumstances, but not in others, and patterns of differential parental influences are difficult to discern. However, most studies on PC only include perceptions of mothers' control, or when fathers are included, a composite of both is created (Luebbe et al., 2014).

Current research acknowledges also that parenting influences may vary across the four parent–youth dyads (mother–daughter, mother–son, father–daughter, and father–son) because of differences in the nature of dyad relationships (Little & Seaey, 2014), but very little research has been done on the specific differences in parental PC in mother-father dyads. The present study is aimed to focus on these patterns of influences by proposing a model in which these differential influences are evidenced within the parental dyad.

Focusing on the Dyad: Measuring Reciprocal Dyadic Associations

As suggested by several family scholars (e.g. Scharf & Goldner, 2018), the presence of mixed findings on mothering and fathering in using PC could be due to the different methods adopted to examine the parental dyad. The different methods can be summed up in three different general approaches (Lansford et al., 2014; Stolz et al., 2005).

The first approach consists in combining and aggregating mothers' and fathers' reports of their own parental behavior in one single construct. Although it can be used to increase the robustness and reliability of the construct, it does not allow for making inferences or verifying the unique and similar contributions of the two parents (Luebbe et al., 2014).

The second approach concerns the comparison of the unique contribution of mothers or fathers by analyzing maternal and paternal data separately (e.g., Soenens et al. 2008). While allowing researchers to examine whether mothers and fathers show similar patterns of influence, this type of approach violates one of the fundamental assumptions of research on dyads: the interdependence of scores (Cook & Kenny, 2005). To compare effects without taking non-independence of data into account can result in totally misleading results (Hox, 2010).

This issue can be addressed by using the third approach that consist in including the separate variables indexing mothering and fathering simultaneously in the same analysis. This approach allows researchers to identify the unique contribution of one parent controlling for other parent's influences as well as to make comparison on the effects and highlight similarities or differences. This is the approach of election if researchers are interested in focusing on dyads as unit of analysis (e.g. Kashy & Kenny, 2000). Considering partners simultaneously in the same model open the field to very complex research questions and the complexity is even more articulated when the dyads are studied over time (Gistelinck & Loeys, 2018).

In the present study we were interested in examining the contribution of mothers and fathers functioning in the use of PC by disentangling both the processes at the *between-person* as the stable differences between partners, and the processes at the *within-person* level intended as how fluctuations in maternal and paternal use of PC are correlated within dyads. Longitudinal statistical models, such as cross-lagged panel models, often aggregate both sources of variance, and are therefore are not explicit regarding whether the variance is explained at the between- or within-person level (Berry & Willoughby, 2017).

Hamaker and colleagues (2015) presented an alternative to classic Cross-lagged Panel Model (CLPM) defined random-intercept cross-lagged panel models (RI-CLPM). This model allows to separate between- versus within-family effects over time. In these models, effects at the within-family level represent how changes over time in one construct around the family's average level (e.g., higher than normal use of parental strategies) are associated with changes in the other partner construct around the family's average level (e.g., higher than average adolescents' internalizing symptoms). In their article, the authors tested whether cross-lagged models adequately estimate parameters comparing models in which between-person level and the within-person level are modeled separately. By generating data to simulate two situations in which between and within effects had opposing signs, they showed that cross-lagged panel models revealed significant effects when they were not present at the within-person level, failed to detect them when they do exist, or even indicated a negative effect when in reality the within-person effect was positive.

Similarly, Keijers et al. (2016) have tested the two different models examining parental solicitation and disclosure (Stattin & Kerr, 2000) in adolescence. The authors found that, regarding paternal solicitation, the cross-lagged associations identified in the classical model were not present at the within level, changing the interpretation of the communicative dynamics between adolescents' perceived parental solicitation and delinquent behavior.

Very little research has examined parental dyadic parental processes of PC and their longitudinal between and within associations (Rogers et al., 2019). In this direction, one study conducted by Aunola and coll. (2013) investigated the temporal dynamics between PC in daily interactions with their 6- to 7-year-old offspring. Multilevel models conducted for mother-child and father-child dyads, showed that psychological control applied by mothers and fathers in daily interactions with their child leads to an increase in negative emotions in the child and this reciprocal association was stronger for fathers.

Lansford et al. (2014) examined the separate and joint effects of mothers' and fathers' autonomy-relevant parenting during early and middle adolescence and found that adolescents'

perceived levels of behavior of mothers and fathers did not interact with one another in predicting adolescent adjustment. However, they found that perceived fathers' psychological controlling strategies accounted for unique variance in adolescent internalizing and externalizing problems. Although the study did not examine specifically longitudinal associations of mothers and fathers' reported PC, authors highlighted the relevance of considering both parents in the model and examine their joint, separate and additive influences of PC on offspring's adjustment.

Similarly, Luebbe and colleagues (2014) tested joint maternal and paternal effects of perceived PC early adolescents' anxiety. The authors included also a maternal and paternal discrepancy score in the model and found that the larger discrepancy in parents' psychological control was uniquely associated with higher self-reported anxiety. These findings, however, were drawn from the adolescents' perceptions focusing on the importance of adolescents' experience over the actual parental behaviors.

The present study is guided by the premise that theories and hypotheses on family dynamics and development must be tested on mothers and fathers together, in order to be able to evaluate the extent to which the theories are supported for mothers as well as the extent to which they are supported for fathers, taking into account, rather than controlling, the contribution of the other parent.

Overall aims of the Study

The present study extends prior work on PC literature by providing a longitudinal examination of between and within associations of maternal and paternal PC over time examining the perceptions of mothers and fathers simultaneously to understand whether and at which level they influence each other's parental strategies. The present work aims also to test the aforementioned associations, by distinguishing two different dimensions of PC, and addressing the debate on the variability of parental psychologically controlling strategies (Soenes et al., 2010). Given limitations of previous studies regarding maternal and paternal longitudinal influences, we implemented an extension of the classical Cross-Lagged approach to better disentangle between- and within- dyadic processes and address the

potential combined and differential influences of mothers and fathers' use of PC during their youth's middle adolescence.

Specific aims and Hypotheses

1) The first aim of the present study is to test the patterns of influence between mothers and fathers regarding two dimensions of PC, *Guilt Induction* and *Verbal Constrain*. The associations will be examined in the same model on two levels: a between-dyads and within-dyads level (Conceptual Model in *Figure 1*). We hypothesize a positive correlation between mothers and fathers' PC dimensions, at the trait level (between dyads) due to the relatively stable tendency of parents to use similar educational and parenting strategies (Dadivod & Grusec, 2006). We expect positive associations for both parents at the within-dyads level. In particular, we expect significant reciprocal influences, but we do not have a strong hypothesis about the direction or the strength of one parent's influence over the other. The literature does not provide a sufficiently clear basis for a directional hypothesis and, to our knowledge, there are no studies that have distinguished within and between levels of PC in the maternal and paternal dyadic process. However, has been found that mothers are perceived as slightly more controlling by their adolescent children (e.g. Luebbe et al., 2014) and that might be differences (and prevalence) in the use of specific strategies by mothers and fathers (Barber et al., 1996). However, we do not have specific hypotheses regarding concurrent or change predictions over time.
2) The second aim was to compare the RI-CLPM – in which between and a within levels were separated - with the classic CLPM – in which within and between level are constrained-, in order to test whether separating the between and within variance led to different results and provided different information about the two dimensions of parental PC. Research on this topic showed that results found in a CLPM do not always replicate at the level of within-person, and can even be opposite in direction and strength, especially when the constructs

under study are to some extent trait like (Keijsers, 2016). As far as we know, such comparison has not been tested in the construct of parental perceived PC.

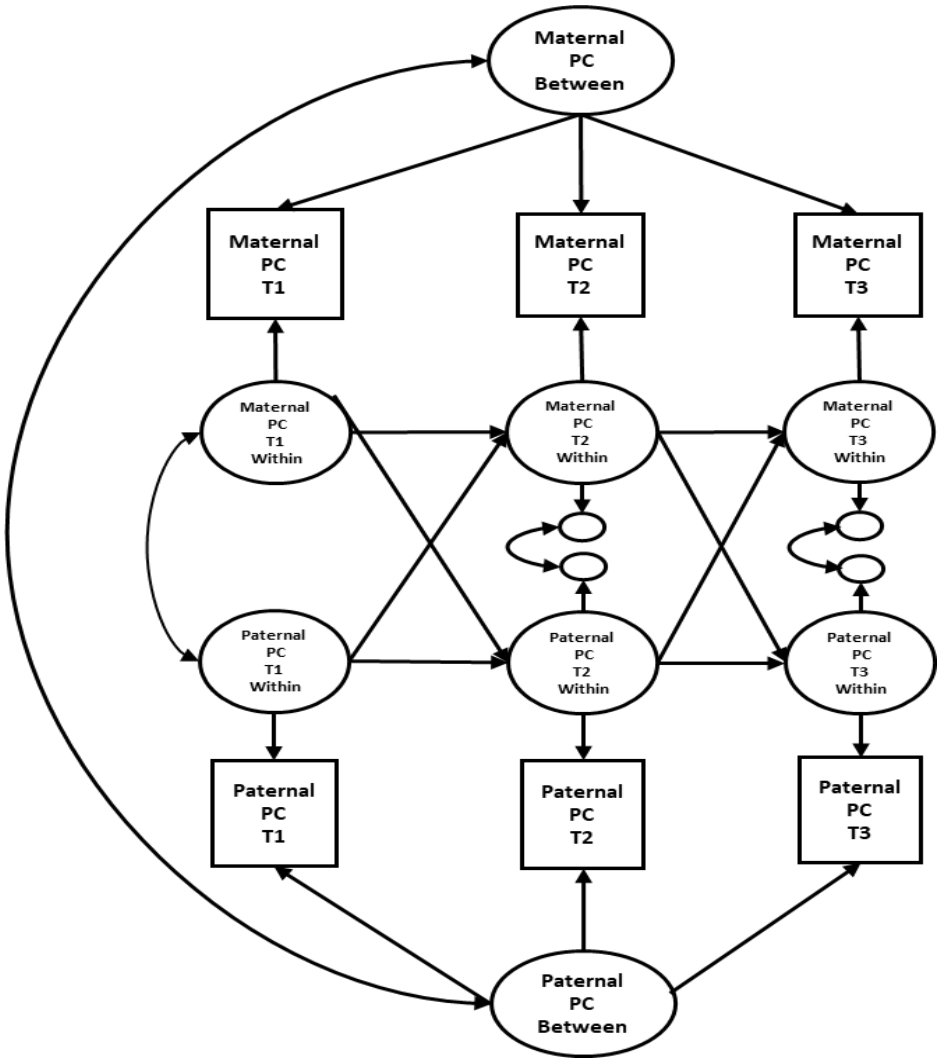

Figure 1. Random intercept cross-lagged panel model of maternal and paternal PC.

Method

Participants

Participants were recruited from the longitudinal study entitled Parenting Across Cultures (e.g., Lansford et al., 2014) presented in Chapter I. The sample of the present study consisted in 147

Mothers-Fathers dyads that were drawn from the cities of Rome and Naples (Italy), who provided data over 3 years in three waves. Participants were parents of middle adolescents (48.3% female) that averaged 13.51 years (SD = .61; range = 12–16) at Time 1, 14.60 years (SD = .62; range = 13–17) at Time 2, and 15.54 years (SD = .62; range = 14–18) at Time 3. Mothers averaged 44.03 years (SD = 5.51) and fathers 47.27 years of age (SD = 5.67) in Time 1. Mothers completed 12.29 years (SD = 4.91) and fathers completed 12.24 years of education (SD = 4.89) on average. Mothers reported that 86.9% were married, 4.9% were unmarried or cohabitating, 1.4% were remarried and 6.9% were separated or divorced.

Procedure

Letters describing the study were sent home with youths, and parents were asked to return a signed form if they were willing to be contacted further. Families were then enrolled in the study until the target sample size was reached in each country. To make each country's sample as representative as possible of the city from which it was drawn, families of students from private and public schools were sampled in the approximate proportion to which they were represented in the population of the city. Furthermore, youths were sampled from schools serving high-, middle-, and low-income families in the approximate proportion to which these income groups were represented in the local population. These sampling procedures resulted in an economically diverse sample that ranged from low income to high income within each site. After obtaining approvals from institutional review boards, parental informed consent, and child assent, questionnaires were completed in the participant's home or location of their choosing (e.g., school). Interviewers read each question to youths and recorded their answers. Rating scales were provided in the form of visual aids to help youths remember response options. Testing sessions lasted approximately two hours. Depending on the site, parents were given modest financial compensation for their participation or youths were given a small age-appropriate gift to thank them for their participation.

Attrition

The parents' participation rate remained high across time. Specifically, the retention rate was 95,23% from T1 to T3 for mothers and 91,83% for fathers (the sample size over time is reported in Table 1). The attrition rate was principally due to two main reasons: unavailability of the subjects to participate in the later data collections in the ongoing longitudinal study or their unwillingness to participate in that specific wave. The analysis of variance reported that the missing participants at T3 did not significantly differ from their counterparts in their Marital Status [Mothers at Time 1: $F(1,147) = 0.106$, $p = 0.74$; at Time 2: $F(1,144) = 0.17$, $p = 0.67$; Fathers at Time 1: $F(1,147) = 0.469$, $p = 0.49$; Time 2: $F(1,144) = 0.159$, $p = 0.69$;], Socio Economic Status [[Mothers at Time 1: $F(1,147) = 0.006$, $p = 0.93$; at Time 2: $F(1,144) = 1.65$, $p = 0.20$; Fathers at Time 1: $F(1,147) = 0.626$, $p = 0.43$; Time 2: $F(1,144) = 2.623$, $p = 0.10$;] and Perceived Psychological Control [Mothers at Time 1: $F(1,147) = 0.004$, $p = 0.95$; at Time 2: $F(1,144) = 0.156$, $p = 0.69$; Fathers at Time 1: $F(1,147) = 0.266$, $p = 0.60$; Time 2: $F(1,138) = 2.612$, $p = 0.10$;] .

Table 1. Samples size across measurement waves

	Mothers	Fathers
Time 1	n=147	n=147
Time 2	n=145	n=139
Time 3	n=140	n=135

Measures

Parental PC. At each wave, mothers and fathers completed measures assessing their perceptions of their use of PC via an adapted version of the Psychological Control and Autonomy Granting Scale (Barber et al. 1996; Silk et al., 2003) consisting in 11 items. Parents reported their rates of agreement on a 4-point scale with 1 = *"Strongly Disagree"*, to 4= "*Strongly Agree"*. Items

were averaged to create two subscales reflecting parents' perceptions of their use of two dimensions of PC. According to the definition provided by Barber (1996) - we labeled the first dimension as *Guilt Induction* (3 items, e.g. "When my child gets a poor grade in school, I make him/her feel guilty."; α = .75 and .75 for mothers and fathers, respectively, at T1; α = .70 and .70 for mothers and fathers, respectively, at T2; α = .69 and .68 for mothers and fathers, respectively, at T3) to refer to parental strategies aimed to evoke feelings of guilt, sadness and worries in the youth for having done things that have a negative emotional impact on other family member. These strategies may also include the withdrawal of love and the parental threat of leaving the interaction with the child when he or her does something that contrary to expectations. The second dimension, *Verbal Constrain* (4 items, e.g. "I say that my child shouldn't argue with adults"; α = .74 and .80 for mothers and fathers, respectively, at T1; α = .77 and .86 for mothers and fathers, respectively, at T2; α = .82 and .80 for mothers and fathers, respectively, at T3), concerns the interference and the containment of the children's expression of opinions and ideas as a way of dominating the conversations with them and invalidating their contents.

Data analytic approach

First, classical Cross-Lagged Panel Model (CLPMs) on observed variables were tested on each dataset to investigate whether the reciprocal longitudinal effects in parental use of PC when between-person and within-person effects are not separated.

Then, in order to include the examination of within-person longitudinal association between maternal and paternal use of Psychological Control, we tested a Random Intercept-Cross Lagged Panel Model following procedures as described by Hamaker et al. (2015). The RI-CLPM modeling - differently from the traditional panel models (Berry & Willoughby, 2017)- allows researchers to account for associations at the between-person and within-person levels. The between-person level in the RI-CLPM refers to the stability of variables over time. The within person level in the RI-CLPM, in contrast, measures the intra-individual fluctuations (change) over time.

These two levels of analysis give two different information and call for two different interpretations of the associations among the constructs. A significant between-person association between maternal and paternal PC would indicate that when mothers (or fathers) are generally higher (or lower) on PC, their partner's levels of PC will also be high (or low). This association reflects relatively stable differences between parents (Hamaker et al., 2015; Keijsers, 2016). A significant within-person association, on the other hand, would indicate that the deviations from the usual levels of parental use of PC at one time point, predicts deviations from the usual mean of the other parent's PC at a later time point. In this kind of model, it is also important to reinterpret the meaning of within autoregressive and cross-lagged associations: they do not represent the stability of individuals from one occasion to the next, but rather the amount of within-person *carry-over effect* (Hamaker et al., 2015). Positive associations indicate that occasions on which a parent scored above his or her expected score are likely to be followed by occasions on which he or she still scores above the expected score again. The opposite interpretation has to be made in case of negative associations. For instance, higher (or lower) than usual levels of maternal PC at time *T* may predict higher (or lower) than usual level of paternal PC at the subsequent time point (*T+1*).

Regarding the model implementation of the RI-CLPM, each observed *Guilt Induction* (and *Verbal Constrain*) score was decomposed into a stable between-person part and a within-person varying part. In order to specify stable trait-like differences between mothers' and fathers' *Guilt Induction* (and *Verbal Constrain*), two overarching random intercept factors were included for each construct. The two random intercept factors reflected the trait-like nature of *Guilt Induction* (and *Verbal Constrain*) over time. The three observed *Guilt Induction* (and *Verbal Constrain*) scores were the indicators of each random intercept, with all factor loadings constrained to 1. The within-person varying part was captured by regressing each observed score on its own latent factor. The resulting six latent factors [i.e. one for maternal *Guilt Induction* (and *Verbal Constrain*) and one for paternal *Guilt Induction* (and *Verbal Constrain*) at each of the three measurement waves] were subsequently used to specify within-time associations, stability paths, and cross-lagged paths. The error variances

of the observed scores were constrained to zero, ensuring that all variation in the observed measures was entirely captured by the within-person and between-person latent factor structures.

Once the model was set, in order to test the longitudinal invariance of stability and cross-lagged paths, we compared the model fit of an unconstrained model with a model with all stability and cross-lagged associations constrained to be equal over time (i.e. the stability and cross-lagged effects from T1 to T2 were equal to the same associations from T2 to T3). According to Chen's (2007) recommendations invariance over time was considered established when $\Delta CFI < 0.010$, $\Delta RMSEA < 0.015$, and $\Delta SRMR < 0.030$.

Because stability and cross-lagged paths in RI-CLPMs and CLPMs could be constrained to be equal over time in all models, described results refer to models in which the stability and cross-lagged effects were constrained to be equal over time.

The CLPMs and the RI-CLPMs were tested with Mplus 7.0 (Muthen & Muthen, 2012), using full information maximum likelihood (FIML). Goodness-of-fit indices included the chi-square, comparative fit index (CFI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Models with CFI values > .90 were considered to have acceptable fit and models with a CFI > .95 good fit; RMSEA and SRMR values < .08 indicate acceptable fit and <.05 good fit (Hu & Bentler, 1999).

Results

Descriptive statistics

Means, standard deviations (SD), skewness and kurtosis are reported in *Table 2*. Values less than 2 for univariate skewness and less than 5 for univariate kurtosis were used as criteria or evaluating univariate normality (Curran, West, & Finch, 1996). Results showed satisfactory values for both skewness and kurtosis. In particular, skewness ranged from -.32 to .60 and kurtosis ranged from -.83 to .29.

Tabel 2. Descriptive statistics of the examined variables

	M	*SD*	*Skeweness*	*Kurtosis*
Parental Guilt Induction				
Mother report; Time 1	2.16	.81	.17	-.83
Father report; Time1	2.08	.81	.36	-.69
Mother report; Time 2	2.14	.80	.33	-.56
Father report; Time 2	2.04	.79	.32	-.71
Mother report; Time 3	2.15	.83	.25	-.75
Father report; Time 3	1.98	.78	.60	-.21
Parental Verbal Constrain				
Mother report; Time 1	2.72	.62	-.32	.29
Father report; Time1	2.71	.64	-.17	-.26
Mother report; Time 2	2.62	.71	-.01	-.45
Father report; Time 2	2.49	.71	.12	-.54
Mother report; Time 3	2.59	.74	-.17	-.33
Father report; Time 3	2.41	.70	.07	-.54

CLPM models

For both *Guilt Induction* and *Verbal Constrain* models, we fitted the CLPMs, on observed variables testing if the autoregressive and cross-lagged parameters were invariant across time, by comparing a full constrained model to a model in which paths were free to vary.

Regarding the *Guilt Induction* model results show that full constrained model fit [$\chi2(12) = 38.324$, $p<.01$, CFI = .92, RMSEA = 0.121, SRMR = 0.065] was equivalent to the unconstrained one [$\chi2(6) = 33.020$, $p <.001$, CFI = .92, RMSEA = 0.174, SRMR = 0.057], but both did not provided a satisfactory fit to the data. Standardized results of the full constrained, and more parsimonious, model are depicted in Figure 2. There were one significant small concurrent association between maternal and paternal PC at Time 1, as well as significant moderate to large stability paths. There were also small reciprocal cross-lagged associations, with positive associations from maternal *Guilt Induction* to paternal *Guilt Induction* and vice versa (i.e. from paternal *Guilt Induction* to subsequent maternal *Guilt Induction*) that showed that mothers and fathers influenced each other's across time.

Regarding the model for *Verbal Constrain*, the full constrained model yielded a good fit to the data, $\chi2(12) = 24.362$, $p < .018$, CFI = 0.968, RMSEA = 0.83, SRMR = 0.048, showing no significant difference with the unconstrained one ($\Delta\chi2(6) = 1.351$, $p = .96$). Results depicted in Figure 3 evidenced one significant moderate concurrent association between maternal and paternal *Verbal Constrain* at T1 and significant strong stability paths for both parents. Small to moderate reciprocal cross-lagged associations were found for both paternal and maternal levels of *Verbal Constrain*. Adolescents' gender has been included as a control variable in both models, however it was not associated to any of the paths.

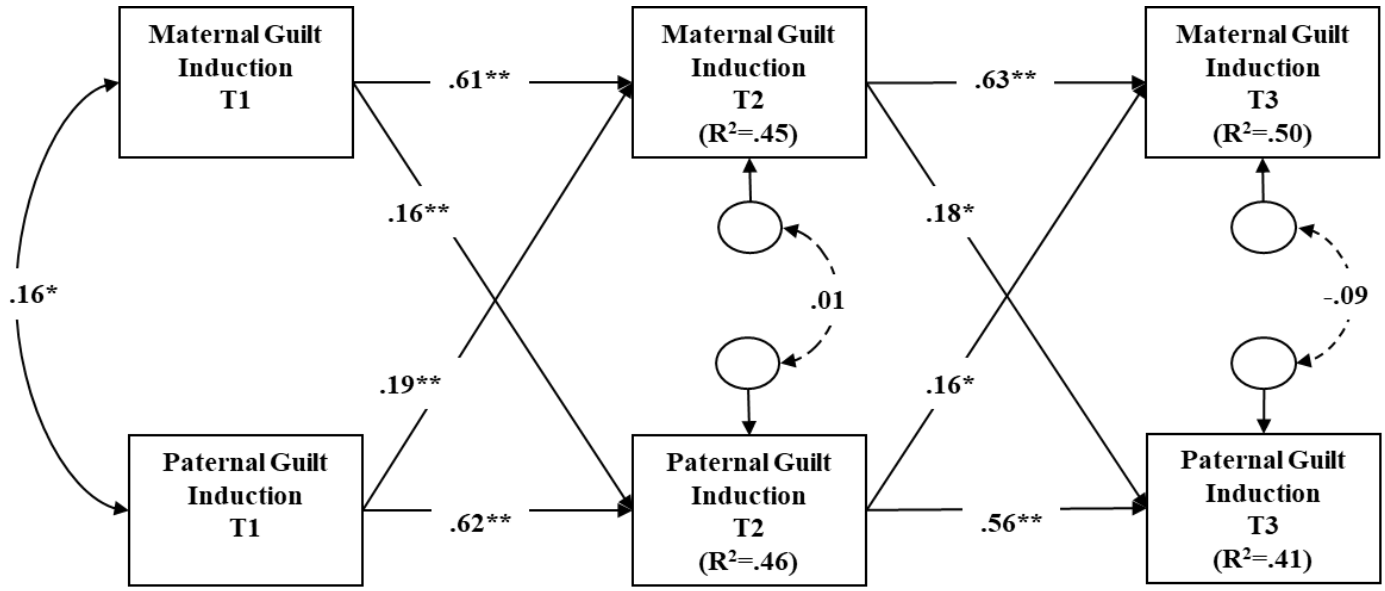

Figure 2. CLPM for maternal and paternal Guilt Induction. *Note.* Standardized estimates, significant (full lines) and not significant (dotted lines) paths are included. Adolescents' gender was included in the model as control variable. *p<.05, ** p<.001.

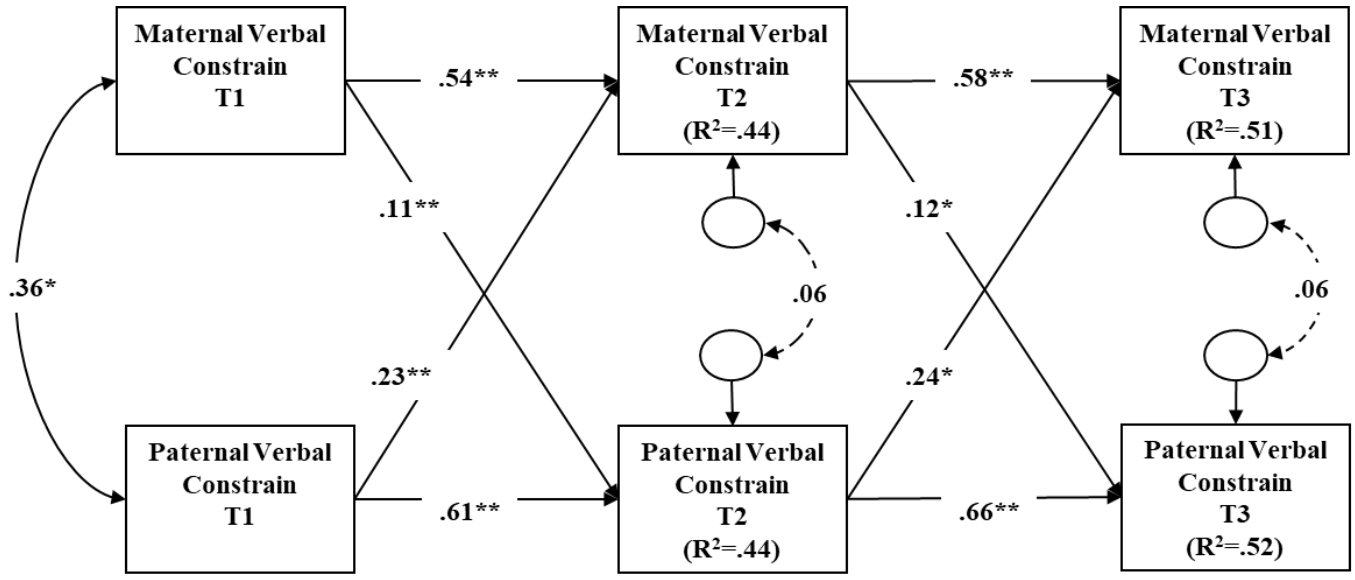

Figure 3. CLPM for maternal and paternal Verbal Constrain. *Note.* Standardized estimates, significant (full lines) and not significant (dotted lines) paths are included. Adolescents' gender was included in the model as control variable. *p<.05, ** p<.001.

RI-CLPM for Guilt Induction

Then, a RI-CLPM was tested for the maternal and paternal *Guilt Induction*. We first, tested if the autoregressive and cross-lagged parameters were invariant across time and results show that full constrained model fit [χ2(9) = 9.41, p = .40, CFI = .999, RMSEA = 0.017, SRMR = 0.052] was good and equivalent to the unconstrained one [χ2 (3) = 3.05, p = .38, CFI = 1.000, RMSEA = 0.011, SRMR = 0.035]. According to Hamaker et al. (2015), similarly for CLPMs, when model fit between constrained and unconstrained models is equivalent, the constrained model can be considered more parsimonious and should be preferred.

Standardized results of the full constrained model are depicted in Figure 4 .The between-person association between maternal and paternal use of *Guilt Induction* was moderate and positive, indicating that parents reporting higher use of *Guilt Induction* across the measurement waves tend to

have partners also reporting a higher use of *Guilt Induction* across measurement waves compared to parents with lower trait-levels of *Guilt Induction*.

On the within-person level, no significant concurrent associations were found between maternal and paternal reported *Guilt Induction*. Thus, at a within level, parents that scored higher or lower than their expected *Guilt Induction* score did not correspond to partners scoring higher or lower than their expected *Guilt Induction* score on T1, T2 or T3.

The positive and significant within-person cross-lagged effects from maternal *Guilt induction* to paternal *Guilt Induction* (and vice versa) indicated that parents' deviations from expected levels of *Guilt Induction* were predicted by their partner's level of *Guilt Induction* at the previous time point; this means that mothers and fathers' higher score on *Guilt Induction* at that year is made more likely by their partner's higher-than-usual levels of *Guilt Induction* at the previous year.

There were no significant carry-over stability paths of *Guilt Induction*, neither for mothers or fathers. Within-person deviations from the expected *Guilt Induction* scores for both parents did not predicted one's own deviations from the expected *Guilt Induction* scores at the next time point. Those predictions were all carried by the partners' driven associations.

Adolescents' gender was not associated to any of the between or within paths.

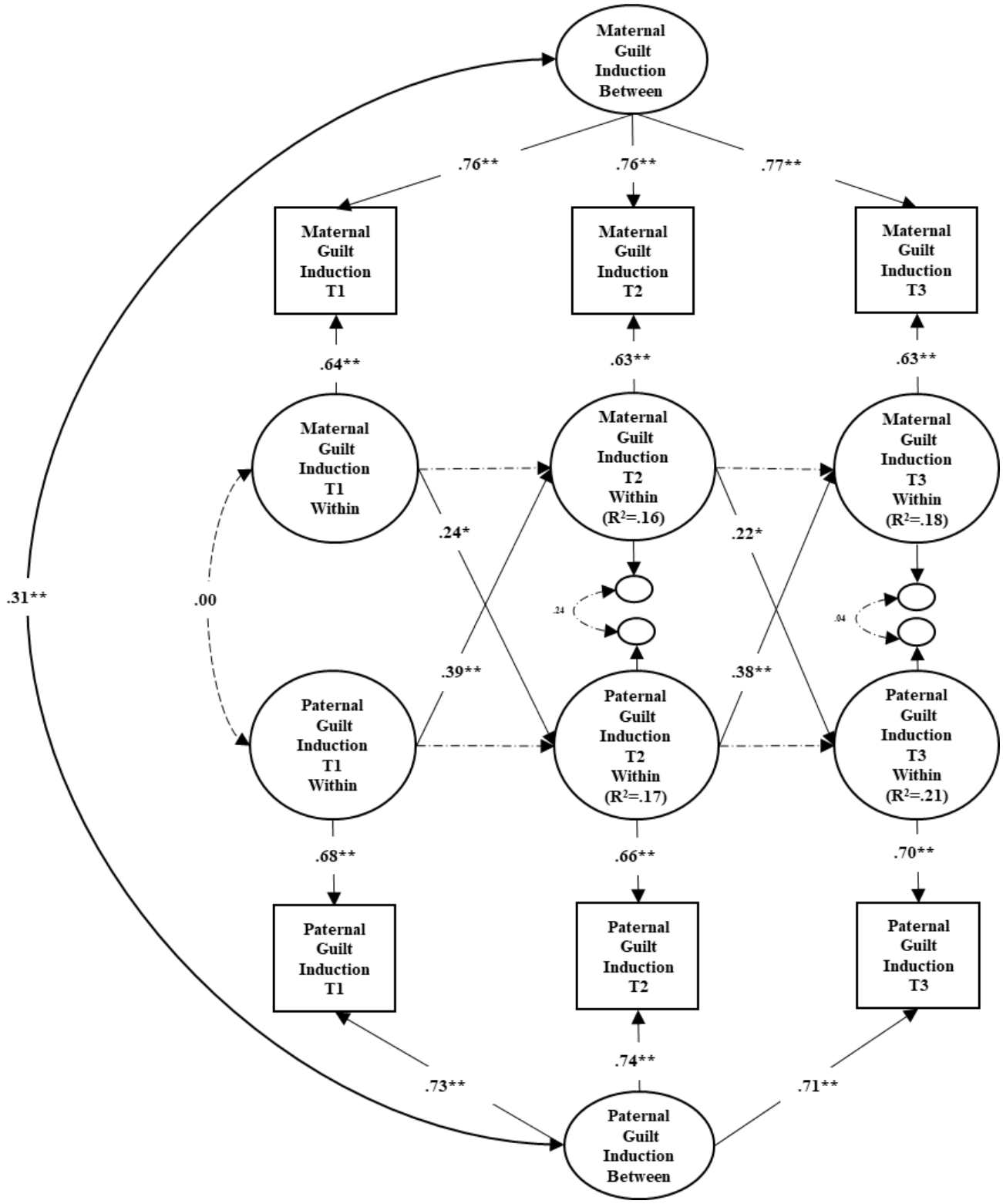

Figure 4. Final RI-CLPM of Maternal and Paternal Guilt Induction. *Note.* Standardized estimates, significant (full lines) and not significant (dotted lines) paths are included. Adolescents' gender was included in the model as control variable. *p<.05, ** p<.001.

RI-CLPM for Verbal Constrain

The same model was tested for the *Verbal Constrain* dimension. Longitudinal invariance for stability and cross-lagged paths was confirmed and the model fit of the constrained model was excellent, $\chi2(9) = 6.99$, $p = .63$, CFI = 1.000, RMSEA = 0.000, SRMR = 0.034 (unconstrained model fit $\chi2(3) = 4.84$, $p = .18$, CFI = .995, RMSEA = 0.064, SRMR = 0.030).

The between-person association between maternal and paternal use of *Verbal Constrain* was strong and positive, indicating that a parent reporting higher use of *Verbal Constrain* across the measurement waves had his/her partner reporting more use of *Verbal Constrain* across time compared to parents with lower levels of *Verbal Constrain* (Figure 5).

At the within-person level, no significant concurrent associations were found between maternal and paternal reported *Verbal Constrain*.

Positive and significant within-person cross-lagged effects were found only from paternal *Verbal Constrain* to maternal *Verbal Constrain* indicated that maternal deviations from expected levels of *Verbal Constrain* were predicted only by fathers' levels of *Verbal Constrain* at the previous time points ($\beta = .46$ from T1 to T2 and $\beta = .37$ from T2 to T3).

Parents' within-person deviations from the expected *Verbal Constrain* scores predicted one's own deviations at the next time point for both mothers and fathers.

As the previous model, adolescents' gender was not associated to any of the between or within paths.

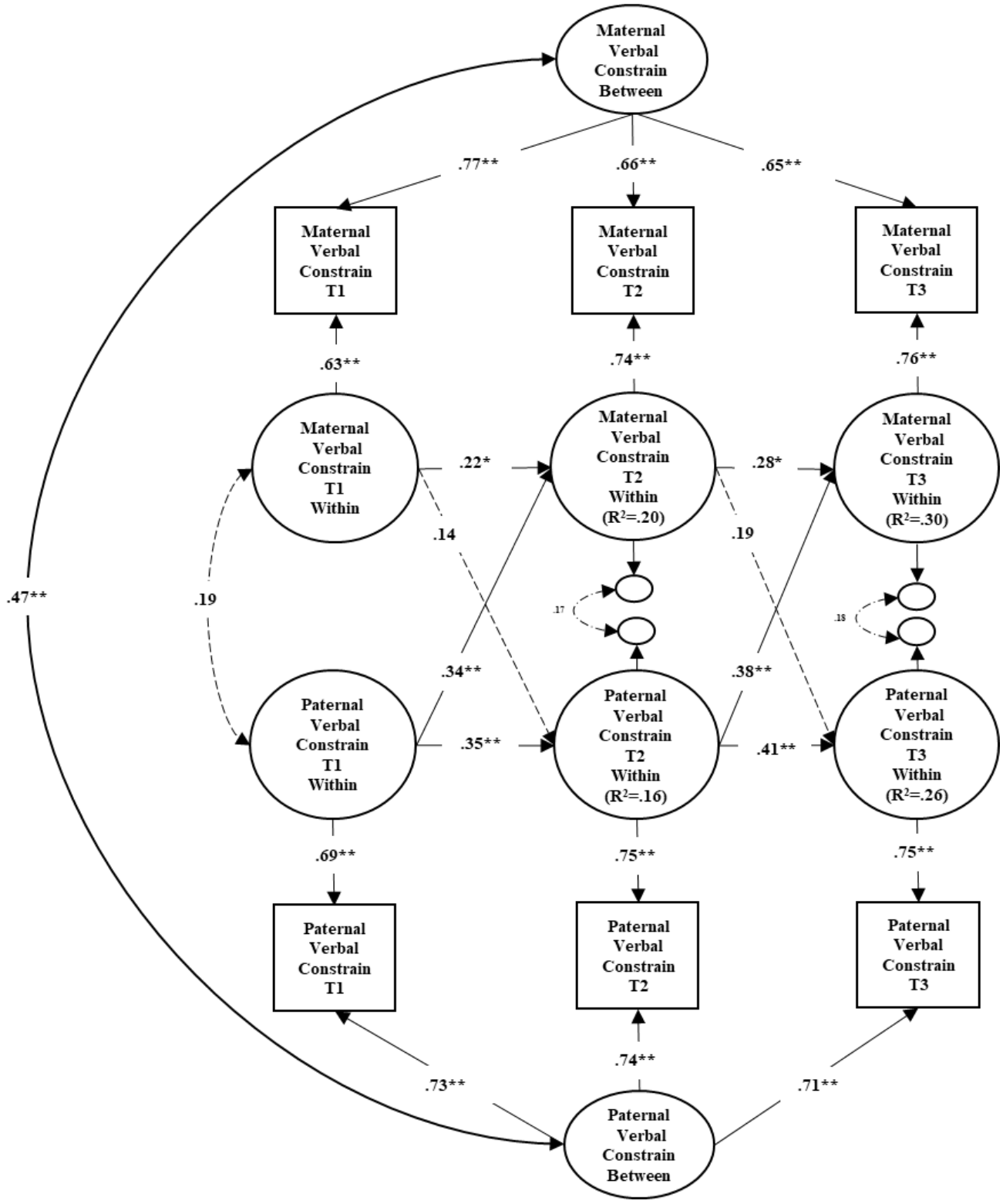

Figure 5. Final RI-CLPM of Maternal and Paternal Verbal Constrain. *Note.* Standardized estimates, significant (full lines) and not significant (dotted lines) paths are included. Adolescents' gender was included in the model as control variable. *p<.05, ** p<.001.

RI-CLPM vs CLPM

The fit of the first model for *Guilt Induction* (Figure 1) was not completely satisfactory compared to the RI-CLPM [$\chi 2(12) = 38.324$, $p < .001$, CFI = 0.929, RMSEA = 0.121, SRMR = 0.065] and the chi-square difference is 28.91, with 3 *df,* which is significant at $p<.01$ indicated a worse fit for the CLPM. The comparison showed that both models lead to significant positive cross-lagged parameters. Results from CLPM showed one significant small concurrent association between maternal and paternal *Guilt Induction* at T1 and significant strong stability paths for both parents, that however, were not observed when distinguishing between from within dyad levels, calling for a different interpretation of *Guilt Induction* stability at a within dyad level.

Regarding the *Verbal Constrain* model, the cross-lagged results from CLPMs showed a different pattern compared to the RI-CLPM that provided a more articulated conclusion regarding the reciprocal cross-lagged associations. The analysis of within person effects shows that reciprocal associations between parents are not symmetrical. On the contrary, for this specific dimension of *Verbal Constrain*, they are mostly and significantly driven by fathers. Hence, using the CLPM would lead to the conclusion that mothers and fathers are causally dominant, while the RI-CLPM leads to the conclusion that the reciprocal process is at a within level present stronger associations, especially for fathers and it suits better the data structure.

These different nuances and information regarding the reciprocal influences of maternal and paternal PC over time along with the better fit to the data of RI-CLPMs compared to the CLPMs, indicated that decomposing within-person from between-person effects in an RI-CLPM represented in a better way the actual data structure than constraining within-person and between-person variances.

Discussion

The primary goal of this study was to test the longitudinal and dyadic associations between maternal and paternal aspects of PC of *Guilt Induction* and *Verbal Constrain*. We investigated our

hypotheses by testing simultaneously the contribution of mothers and fathers in their perceived use of PC over time.

We followed previous research on the potential similarity or differences in maternal and paternal use of PC by investigating dyadic associations on both the between-dyad level and the within-dyad level. Using a novel RI-CLPM (Hamaker et al., 2015), we compared the results with the regular CLPM (e.g., Rieger et al., 2016). The main difference between the two approaches was that the former differentiates between-person effects from within-person effects, and the latter does not.

According to this premise, we argue that evidence for the similarities or differences in the contribution of maternal and paternal influences on PC needs to be re-evaluated in two directions. First, including both parents in the same analysis and considering the dyad as the unit of analysis; second, testing for potential differences or similarity by disentangling between- and within- processes that characterize family functioning (Aunola et al., 2013).

Parental PC at the between and within level: stable and reciprocal associations

The between-person results in the current study showed a relevant trait effect for the positive association between mothers and fathers use of PC for both *Guilt Induction* and *Verbal constrain*. Parents with higher levels of *Guilt Induction* (and *Verbal Constrain*) across the three measurement periods tended to have their partners with higher levels of PC over the measurement periods, meaning that the association between maternal and paternal PC strategies is relatively stable over the course of three years. The correlation was found to be moderate for the *Guilt Induction* and stronger for *Verbal Constrain*. This may reflect tendencies of parents to use similar or concordant strategies to educate their adolescents (Adamson & Buehler, 2007).

After controlling for these trait effects, consistent within person associations were found at each measurement wave. At a within-person level significant cross-lagged effects in the RI-CLPM were found in both models of *Guilt Induction* and *Verbal Constrain*, showing how parents reciprocally influenced their partner's use of PC over time. Specifically, regarding *Guilt Induction*,

reciprocal associations were found to be significant for both mothers and fathers: consistent with our hypothesis, maternal and paternal reports of higher-than-usual use of *Guilt Induction* at one year were predicted by their partner's tendency to use more guilt inducing strategies the year before. These reciprocal associations are consistent with theories postulating the effects of the dyadic feedback cycles on family systems (e.g. Katz & Gottman, 1996; Granic & Patterson, 2006). According to Systems Theories, the mother–father dyad, as one of the family subsystems, may influence each other directly or indirectly through feedback processes that have powerful implications for understanding the effects of marital interactions on parenting. Specifically, parents may reinforce each other's in their use of PC over time and "Through circular causality, this configuration of interacting elements gives rise to a macroscopic dyadic state, characterized by coercive expectancies and habits, and this dyadic state maintains the interaction of the underlying cognitive, emotional, and behavioral elements" (Granic & Patterson, 2006, p.107). Psychologically controlling parents create a coercive, unpredictable, or negative emotional climate of the family, which serves as one of the ways the family context influences adolescents' development (Larson & Almeida, 1999; Morris et al., 2007). Eventually, through daily and repeated psychologically controlling interactions, the adolescent may see his/her autonomy hindered by their parents that together, and reciprocally, present them with negative interactional models. Adolescents become then socialized to respond to parents intrusions escalating in maladaptive behaviors that may stabilize through adolescence and carry over into peer relationships (Dishion, 2013; Granic and Patterson, 2006). There is limited knowledge on the feedback processes of PC and these findings may shed a light on the directionality of reciprocal influences over time (Scharf & Goldner, 2018).

Contrary to our expectations, in this model, carry-over stability paths for both mothers and fathers were not significant meaning that parents' own deviations in their use of *Guilt Induction* were not predicted by one's own previous deviations. In the presence of significant within cross-lagged associations, this finding suggested that one's deviation of *Guilt Induction* was mostly driven by the partner's deviations the year before: if their partner used more Guilt Induction than usual, both mother

and fathers were more likely to use higher levels of PC over time. This is partially consistent to the findings by Aunola and coll. (2013) showing that fathers' use of PC did not show stability from day to day to the same extent that the mothers' use of PC. Such within temporal variability among parents might also provide an important explanation on variability in parent-child interactions.

Regarding *Verbal Constrain*, at the within level, reciprocal (cross-lagged) effects were found only for fathers. Paternal higher-than-usual levels of *Verbal Constrain* predicted maternal deviations one year later, and not vice versa, showing a significant contribution of fathers in maintaining higher levels of maternal use of *Verbal Constrain* over time. Building on theories and studies comparing father- vs mothers' involvement (Lewis & Lamb, 2003), these findings call for further exploration of reciprocal parental associations and contributes to the literature on PC that shows the reciprocal and additive influence of paternal PC on maternal parenting, which has been often considered as predominant for adolescents' adjustment (Day & Mackey, 1986). This might have important implications for the research field suggesting the higher involvement of mothers compared to fathers that cannot be really addressed without considering the mutual and simultaneous participation of both parents in the family interactions (Adamson & Buehler, 2007). Furthermore, findings might suggest parental gender differences in the use of different PC strategies. Parental literature based on sex role socialization, often reports mothers to be overrepresented in styles high in nurturance (indulgent and authoritative) and fathers to be overrepresented in styles characterized by strong control (authoritarian and authoritative) (Simons & Conger, 2007). The two dimensions of PC considered in this study suggested the interpretation of *Guilt Induction* as a more emotion-focused parental strategy separated by *Verbal Constrain* that concern directive behaviors of constraining adolescents' verbal expressions and opinions. This difference might have led to the variability of findings between mothers and fathers.

Along with the between-person effects found in this study and previous research, the results provide valuable insight into the associations and reciprocal influences of maternal and paternal PC in family functioning. Those parents (families) with higher levels of PC compared to other parents

tend to be the ones who are also likely to be accompanied by partners with higher level of PC. Findings thus show that these dyads are likely to affect adolescents' autonomy-related experiences more negatively, compared with parents who report lower level of PC given the spiral that characterized mother-father relationship (Adamson & Buehler, 2007).

The within-person findings from our study further provided insight in how mothers and fathers influence each other as partners. Mothers and fathers who experienced higher use of *Guilt Induction* than they usually do are at risk of an increase in their use of this negative parental strategy over a 1-year time period. In the case of verbal constraining strategies, fathers seemed to contribute more significantly to increasing both their own and their partners' levels of this specific strategy over time.

The present study intended to emphasize the relevance of considering family processes including both dyad members and disentangling between and within effects that we hypothesized to be relevant for family processes. Yet, if these effects cascade over time, the influence of PC on the extended family functioning and adolescent adjustment may be more substantial over multiple years. However, in our study, we cannot conclude whether this is the case. Further within- person replications, possibly with larger samples, are needed before substantive statements about the nature of the within-person association between maternal and paternal use of PC can be made. If the results replicate in future studies, and if effects cascade over time, parent-training interventions aimed at working on adaptive parental strategies may be beneficial for reducing the risk for developing and maintaining the negative spiral of PC (Cox & Paley, 1998). When implementing these programs, it is most effective to focus on both parents and assess which strategies are used both individually and jointly to identify pattern of influence.

Maternal and Paternal fluctuations in PC over time: carry-over stability

Next to the within-person cross-lagged effects, which are relevant for testing the reciprocal dyadic influences, the RI-CLPM provided information about within person carry-over stability effects. These effects indicate whether a parent report higher (or lower) PC compared to his or her

own usual levels tends to report higher (or lower) levels of PC on the next measurement. Findings across the two models showed significant carry-over stability effects for both parents' Verbal Constrain levels, while, contrary to our expectations, these stability effects were not significant for Guilt Induction. Specifically, both mothers and fathers tended to maintain higher-than-usual levels of Verbal Constrain across time; on the contrary, mothers and fathers' higher levels of Guilt Induction were not maintained and carried over a year later. This suggests that, despite a relatively high stability of PC between persons, the carry-over stability - within one person - can be much smaller or not existent (Hamaker et al., 2015). The variability in the presence of carry-over stability effects for parental PC strategies highlights the importance of taking within levels of family interactions into account (Aunola et al., 2013). The present findings should be compared with results drawn from future studies implementing more time measurements (e.g. intensive longitudinal studies) which would allow whether these relatively small carry-over effects are informative about the fluctuations of maternal and paternal PC occurring during the developmental stage of adolescence.

RI-CLPM vs CLPM

In addition to elucidating temporal associations between maternal and paternal PC dimensions at the within-person level, the present study aimed to investigate whether findings would have differed when comparing the RI-CLPM to the commonly used CLPM (e.g. Keijers, 2016). The results based on the RI-CLPM and CLPM with regard to the cross-lagged paths, were relatively comparable especially for the *Guilt Induction* model: both approaches indicated the presence of reciprocal effects between mothers and fathers with quite comparable effect sizes. Also, the CLPM indicated a significant within correlation between T1 maternal and paternal deviations while the RI-CLPM did not. However, we also found a main difference in the CLPM model consisting in a significant mother-to-father cross-lagged effects for the *Verbal Constrain*. When examining the within effect through the RI-CLPM, significant cross-lagged effects were found only for fathers, suggesting that the reciprocal effects were mostly driven by fathers and not by mothers. Thus, in this case, with this

specific research question, the within-person processes showed a different piece of information that would have been covered by constraining the two sources of variances. These results here are in line with several studies in which the within-person process and the between-person pattern of results are distinct, sometimes even opposing (Hamaker et al., 2015; Keijsers, 2016). Although the present study indicates a convergence between the different levels of covariance – especially in the case of *Guilt Induction* – our finding on PC suggest being cautious in continuing to rely on CLPM instead of within-person methods like the RI-CLPM when the goal is to examine within-person processes (Berry & Willoughby, 2017). Given our research question, the decision to use within-person analyses, and the superior model fit of the RI-CLPM compared with the CLPM, we support the findings and the suggestions from the RI-CLPM.

Strengths and Limitations

This study presents several limitations. Even though we were mostly interested in the parental dynamics, we only ascertained the parents' perspective. Yet, research demonstrates the relevance of comparing the effects of parent and adolescent perspectives on Psychological Control measures (Barber et al., 1996).

We might have differentiated the use of PC by parent- child dyads (e.g., adolescent-mother vs. adolescent-father PC) in order to test whether between and within effects of mothers and fathers operate differently (Schleider et al., 2014). However, we controlled for adolescents' gender in the analyses, but it did not seem to be associated to parental PC in our sample (He et al., 2019). In addition, our results emerged from a convenience sample of Italian families. It is plausible different (or similar) results would emerge with different cultural groups. We will test this hypothesis in the next study.

We also did not test the model with measures of positive parental strategies, such as autonomy granting behaviors as a fundamental dimension in PC family interactions. It is also unclear if our survey measures, which focused on general perceptions of PC capture what occurs in actual dyadic

interactions. Our self- report survey measures are subject to multiple biases, such recollection bias. Thus, we do not know if our results could be replicated in studies examining PC in actual family interactions, through quantitative and /or qualitative coding of verbal and nonverbal behaviors (e.g., Ackerman et al., 2011).

Additionally, as a central issue of longitudinal survey research is the possibility that different lag times (e.g., months instead of years) and more measurement waves can yield different results (Little, 2013). This study is also limited by the lack of prior research on the test of between and within effects of parental dyad PC.

Despite these limitations, this study suggests that parental dyadic influences in the use of PC might play a role in how it unfolds in family interactions. Specifically, maternal and paternal use of PC's strategies appear to share a reciprocal relationship over time. Knowing that parents are a primary influence on children's adjustment, the current study extends PC theory by suggesting that parents' tendency to use psychologically controlling strategies in their interactions with their adolescents, it is profoundly reflected by their partners' selection and use of PC.

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CHAPTER III

STUDY 2

Mothers and Fathers' Psychological Control and Adolescents' Adjustment in Three Countries: A Longitudinal Actor–Partner Interdependence Model

Abstract

Psychological Control (PC) is related to the developmental task of *individuation* and developing a separate identity that makes this parental strategy problematic especially in adolescence (Silk, et al., 2003; Soenes et al., 2012). Numerous studies have demonstrated that PC has a negative impact on adolescent's development related to anxiety, depression, and externalizing problems, such as delinquency (Pettit et al., 2001) and antisocial behavior (Li, Zhang, & Wang, 2015). PC can be used differently by mothers and fathers. However, findings concerning PC comparing the gender of parents are still inconsistent and the dynamics underlying these potential differences understudied (Scharf & Goldner, 2018). Researchers have also attempted to examine whether the associations between PC, adolescents' adjustment and family functioning are generalizable to different cultural settings. The present study aims to extend previous research on the PC in two directions. First, testing the dyadic and cumulative effects of maternal and paternal PC on adolescents' antisocial and internalizing behaviors. Second, testing the cross-cultural generalizability of these associations in three countries: Italy, Colombia and USA. Participants included 372 families from Italy, Unites States of America and Colombia with data from three consecutive years (T1, adolescents' age=13.70), (T2, adolescents' age=14.95), (T3, adolescents' age=15.99). Parental Psychological Control was assessed via the Psychological Control and Autonomy Granting Scale; Barber et al. 1996; Silk et al., 2003) and Youth Self Report (YSR; Achenbach, 1991) was used to assess youth's antisocial and internalizing behaviors. The Actor-Partner Interdependence Model (APIM, Kenny, Kashy, & Cook, 2006) was implemented in SEM framework (Ledermann & Kenny, 2011). Parental PC was found to be predictive of both antisocial behaviors and anxious-depressing symptoms when adolescents were 15 years old, with some differences between mothers and fathers. Specifically, maternal *Guilt Induction* was positively associated only with adolescents reported antisocial behaviors, while paternal PC was associated with anxious-depressing symptoms, but, contrary to our expectations, this association was negative. Furthermore, a finding in the same direction was evidenced in the case of *Verbal Constrain*: only paternal PC was negatively associated with adolescents' anxious-depressive symptoms, while no significant association were found between maternal *Verbal Constrain* and adolescents' mal-adjustment. Comparisons across countries evidenced the cross-cultural invariance of dyadic associations across time between maternal and paternal PC in Italy, Colombia and USA.

Keywords: Psychological Control, Adolescents, Parental Dyad, Cross-Cultural comparison

Introduction

Psychological Control (PC) can be broadly defined as a pattern of behaviors through which parents try to intrude in the psychological world of the adolescent by using manipulative parental strategies as guilt induction, verbal constrain and love withdrawal (Barber et al., 1996). PC was originally studied in the context of parenting style and control (e.g. Baumrid,1991; Schaefer, 1965), and these studies have demonstrated the importance of parental control strategies for children's and adolescents' adjustment (Barber et al, 2002; Pinquart et al., 2017; Soenes et al., 2010).

Subsequently, a growing body of research has focused on the role of PC on offspring's adjustment and family functioning (e.g. Scharf & Goldner, 2018). Moreover, research has highlighted the relevance of PC in the dynamics of family systems and subsystems (i.e. dyads), for which constructs such as enmeshment, intrusiveness, lack of acknowledgment, and boundary violation are central (e.g., Barber & Buehler, 1996; Kerig, 2005; Minuchin, 1988).

Generally, both research and theory have suggested reciprocal and bidirectional associations between parental and adolescents' relationship functioning in terms of mutual influences between parents and children (Coie & Dodge,1990; Maccoby & Martin, 1983). Bidirectionality has been tested also on parental PC. As an example, Janssens and coll. (2017), in their three-year longitudinal study, collected data from adolescents (age 13–16) and their parents on PC and aggressive rule-breaking behaviors; cross-lagged analyses showed bidirectional effects between PC (reported by adolescents) and both aggressive and rule-breaking behaviors (reported by the parents). The relevance of these studies evidence that a variety of adolescent problem behaviors, such as aggression (Albrecht et al., 2007), disruptive behaviors (Burke et al., 2008), internalizing and externalizing behaviors (Conger, Conger, & Scaramella, 1997), exert greater child effects over parental control during adolescence, rather than the reverse.

Yet there has been limited examination of this reciprocity and bidirectionality through the perspective of both parents and focusing on their specific parental couple dynamic (Scharf & Goldner, 2018). Since the role of fathers has often been omitted or neglected in PC studies (Rogers et al., 2003),

there is very limited evidence on the different (or similar) roles mothers and fathers play when using manipulative and intrusive parental strategies with their children. Moreover, even if researchers are generally confident in claiming the cross-cultural equivalence in psychologically controlling strategies (Barber et al., 2005; Soenes & Vansteekiste, 2010), these hypotheses have not been tested considering mothers and fathers' dyadic processes.

The current study directly examined the reciprocal associations between parental PC dyadic functioning for both mothers and fathers across three years of parenthood and the effect of these longitudinal dyadic associations on adolescents' adjustment in terms of internalizing and externalizing behaviors. In order to extend cross-cultural research on PC, we aimed to test the dyadic model in families from three different countries: Italy, USA and Colombia.

Associations of Parental Psychological Control with Adolescents' Internalizing and Externalizing Behaviors

In the developmental stage of adolescence - characterized by the need of autonomy and independence seeking behaviors -, psychologically controlling parenting strategies have been found to undermine adolescents' sense of self-efficacy and increase susceptibility to feelings of anxiety and depression (Barber, 1996; Luebbe et al., 2014; Soenes et al., 2012) as well as other important life domains as school achievement and social relational functioning (Gaertner et al., 2010; Wang et al., 2007). Contrary to previous findings on PC, which highlighted its relevance predominantly to internalizing dimensions (Barber et al., 1994), PC has been found to be crucial also for externalizing dimensions such as antisocial behaviors (e.g. Symeou & Georgiou, 2017). The tendency to intrude and manipulate adolescents' psychological world during family interactions along with the failure to promote autonomy, might increase adolescents' risk for internalizing problems by undermining the development of independence and competence; moreover, it is plausible that parents' attempts to control their children or block their desire for increased autonomy will elicit defiance and oppositional behavior.

In their attempt to reconceptualize the construct of PC according to the Self-Determination Theory Framework (Deci & Ryan, 1985, 2000), Soenes and coll. (2010) focused on the difference between *internally* and *externally* controlling parental strategies (Plant & Ryan, 1985). Internally controlling strategy is more covert and insidious and referred to the idea that socialization agents and parents may also activate internal pressures in children through the use of guilt-induction, shaming or love withdrawal. The pressure felt by internally controlled children are characterized by the compulsion to engage in the requested behavior, while simultaneously wanting to avoid it. This conflicting regulation process has been found to create a vulnerability to develop internalizing symptoms (Ryan, 1993; Ryan et al., 2006). Externally controlling strategies are defined as those strategies provided in an open and overt fashion (e.g., shouting, hitting, or rewarding) and that pressure individuals to meet requirements imposed from outside the person. Children of externally controlling parents, might be more exposed to aggressive and covertly controlling strategies by their parents and apply the same behaviors in their social domain (Bandura, 1973). These children's interpersonal aggressive behaviors would be more subtle and conditionally approving, as expressed, for instance, in gossiping, damaging other people's social reputation, and threatening to end a friendship. The latter interpersonal behaviors are referred to as "relational aggression" (Crick & Grotpeter, 1995). Similarly, these children might model their own behavior in line with their parents' style and engage in externalizing problems such as drug abuse and delinquency (Petit et al., 2001) or might initiate a defiant and rebellious reaction against parental authority (Soenes & Vansteekiste, 2010).

The effects of PC on adolescents' adjustment has been examined also longitudinally. For example, Pettit et al. (2001) examining antecedents and outcomes of PC in early adolescents found longitudinal links between PC and both externalizing and internalizing symptoms mainly for girls and for those teens who were low in preadolescent delinquent problems and anxiety/depression. Longitudinal analyses conducted by Rogers et al. (2003) indicated that adolescents with higher internalizing symptoms at one time (age 11-12) are especially likely to perceive parents as using PC

one year later; earlier PC did not predict later internalizing symptoms, while higher PC at one time predicts higher externalizing one year later. Steeger and Gondoli (2013) found that adolescent aggression and depression in 6th grade were associated with mother- adolescent conflict in 7th grade, which was in turn associated with higher levels of mother- and adolescent-reported PC in 8th grade. In line with these findings, bidirectional associations between parental PC and adolescents mal-adjustment have been confirmed by several studies. A recent meta-analysis (Pinquart, 2017) showed that associations of externalizing problems with PC were bi-directional, and reflected the cumulative, reciprocal influences of the two constructs over time. Barber et al. (2005) in a four-wave longitudinal study found cross-lagged effects of PC on subsequent levels of depression and found that also depression levels had effects on subsequent reports of PC. However, given that most studies linking PC to adjustment are cross-sectional or short-term longitudinal, we would like to contribute to previous studies, by testing these association across middle adolescence, by considering three waves of data from age 13 to age 15.

Understanding the relation between parental PC and adolescents' adjustment also requires determining whether and how maternal and paternal parenting have unique implications for adolescents' development. While several studies investigated mother-adolescents' dyads, a very limited number of studies focused on father- adolescents' dyads or, even less, on parental reciprocal associations of PC. The present study addressed this gap in the literature, by including both mothers and fathers reports of PC and testing whether and how reciprocal associations in parental PC affects adolescent internalizing and externalizing behaviors.

Unique and Differential Contributions of Maternal and Paternal PC to Adolescents' Adjustment

Parental behaviors within two-parent families are often highly correlated (Morrill et al., 2010; Pedro et al., 2012; Schoppe-Sullivan et al., 2004). Consistent with family Systems Theory (Minuchin, 1988) - which posits family members are interconnected and each person within a family plays a precise role in relation to the other members and the family as a whole - interrelatedness between

mothers and fathers parenting in two-parent families is expected. However, parenting between mothers and fathers are often conceptually and empirically distinct from one another.

The current debate on mothering and fathering is mostly divided between two positions: on one side, scholars claim that these two components are similar and characterized by the same patterns at least at a behavioral level (e.g. Fagan et al., 2014); on the other side, researchers on fatherhood support for a unique contribution of fathers in family dynamics and suggest scholars and professionals to take such aspect into account in their work (e.g. Jeynes, 2016). Empirically, despite the vast majority of studies focusing only on maternal PC, findings from previous research on the differential contribution of maternal and paternal PC on adolescents' adjustment has reached mixed conclusions. For example, mothers were found to be slightly more likely than fathers to use PC control with their children (Barber & Harmon, 2002; Dobkin et al., 1997; Roman et al., 2012; Shek, 2007). In another study, Zarra-Nezhad and colleagues (2015), found a differential effect of maternal and paternal PC. Specifically, the use of PC by mothers of first-grade children predicted increased levels of negative emotions, while fathers' PC was found to be especially harmful among children with a difficult temperament. However, in other studies, no gender differences in levels of maternal and paternal PC were found (Kuczynski & Kochanska, 1995; Mantzicopoulos & Oh-Hwang, 1998; Mason et al., 1996; Rogers et al., 2003). Rogers and coll. (2019), specifically seeking distinct classes or profiles of within-person change in perceived PC, examined the developmental course of adolescents' perceptions of mothers' and fathers' PC across an 8-year period spanning early to late adolescence (ages 12–19). They found that mothers' (but not fathers') depressive symptoms, reported at the age 12 assessment, predicted adolescents' membership in the elevated PC trajectory: adolescent occupying these elevated trajectories showed more problematic growth in depressive and anxiety symptoms across adolescence.

As showed in these studies, including both mothers and fathers in the models allows researchers to shed a light on similar or different contributions of parents' PC on adolescents' adjustment. Nonetheless, in order to better examine the quality of interactions within families,

research on the temporal dynamics between parental behaviors and child outcomes in mother - father dyads are needed (e.g. Lansford et al., 2014). Very few studies have tested the reciprocal and interactive role of maternal and paternal PC on adolescents' well-being. Moreover, it is unclear - in a developmental family perspective - whether the longitudinal association between maternal and paternal PC and adolescents' adjustment is due to the overlapping variance shared between the two parents at an earlier time point or to the unique role that they each play in predicting adolescents' adjustment at subsequent times. In this direction, Lansford and colleagues (2014) tested the separate and joint effects of mothers' and fathers' autonomy-relevant parenting during early and middle adolescence (13 to 17 years old), by testing two- and three-way interactions between maternal and paternal autonomy-relevant parenting. Results from 518 families, showed a non-significant mother X father interaction terms show that such associations are not conditioned by parental sex and that mothers and fathers did not interact with one another in predicting adolescent adjustment, however results show that fathers' but not mothers' psychological control is a unique predictor of adolescents' externalizing and internalizing problems, and that fathers' (but not mothers') knowledge is a unique predictor of boys' (but not girls') externalizing problems.

The present study aims to extend this line of research by focusing on reciprocal longitudinal associations between mothers' and fathers' PC, by testing both the unique and dyadic effects on adolescents' adjustment.

PC in a Cross-Cultural Framework

PC-related aspects and dynamics have been demonstrated to be also culturally relevant and the debate about whether the link between PC and adolescents' functioning is similar across cultures (e.g. Barber et al., 2005; Soenes et al., 2008) is still ongoing.

According to the Self-determination Theory, those parenting behaviors that are perceived as controlling, undermine the innate and universal needs of autonomy, competence, and relatedness (e.g. Soenens & Vansteenkiste, 2010; Soenens et al., 2015). Several studies that focused on the culture-

specific perspective, showed that parental control may be perceived as more normative in non-Western and Asian cultures (Chao & Tseng, 2002; Fung & Lau, 2012) and as such may be unrelated to adolescents' adjustment. For example, Chao & Aque (2009) reported that PC was related to greater anger, conduct problems, and drug use among European- American but not among Chinese-American adolescents, though the effects on depression and anxiety symptoms were similar.

Adolescents from different countries and cultures may provide different meanings and, consequently, perceive differently the level and quality of parental control, for example evaluating it as less negative and less intrusive. This aspect has been investigated for example in Eastern and Asian cultures where aspects related to control are considered more normative (e.g. Ng et al., 2014). Rural Chines, for example, were found to perceive love withdrawal as less negative compared with urban Chinese and Canadian adolescents (Helwing et al., 2014). Chao & Aque (2009) found differences between European American and Asian immigrant youth in the effects of both behavioral control and PC and found that feeling anger toward parents' use of PC may serve a protective function for European American youth but not for Asian immigrant youth. Similarly, different hypotheses were formulated on individualistic vs collectivist cultures. Families and adolescents growing up in an individualistic culture that stresses the importance of autonomy and personal independence might be influenced more negatively by psychologically controlling strategies that aims specifically to affect these values (Barber et al., 1996; Scharf & Goldner, 2018).

On the other hand, studies endorsing the universality perspective have shown that the relation between *perceived* PC and adolescents' adjustment is similar across cultures (e.g., Soenes et al., 2015; Q. Wang, Pomerantz, & Chen, 2007) although it may manifest in different domains of adolescents' behavior and functioning. Chen and colleagues (2016), for example, examining how controlling parenting practices are perceived and dealt with, found that, once the situations were perceived as controlling, adolescents from Belgium and China suffered to a similar degree in terms of need frustration. Similarly, Furukawa et al., (2012) comparing shame- and guilt- proneness in Japanese,

Korean and US children, found similar pattern of correlations in the associations with aggression-relevant constructs and functional behaviors towards failures and transgressions.

In the same vein, there are important influences on fathers and mothers depending on their cultural background and nationality (Lamb, 2012; Pattnaik, 2013) and parenting practices are suited to the belief systems and the cultural and community context in which they are embedded. In two-parent families that endorse clear division and gender-based roles in parenting, mothers and fathers may attend to, or respond to, different kinds of contextual and cultural influences. In the context of the traditional values of respect and familism, for example, Halgunseth et al. (2006) hypothesized that the use of control related behaviors among Latino families may reflect the specific cultural goals to maintain these values. Julian et al. (1994) found that Hispanic fathers reported more emphasis on child control of emotions (i.e. not crying, hiding anger) than European American mothers or fathers and described Mexican-American mothers as using more guilt inducing strategies than Euro-American mothers. Fathers with less traditional gender roles from both Eastern and Western societies tend to be more involved with their children (Du, 2006; Ho et al., 2011) than fathers in Asian families, where fathers are traditionally described as breadwinners and disciplinarians, and mothers as homemakers and caregivers (e.g. Ho et al., 2011).

Very few studies, however, have tested in a specific way maternal and paternal PC in different countries. To date, Barber et al. (2005) compared parents and adolescents from five countries and found that psychologically controlling parenting was associated with adolescent depression and antisocial behaviors across all cultural groups. Similarly, McNeely and Barber (2010) asked to adolescents from 12 cultural groups - Africa, Asia, Australia, North and South America, Europe, and the Middle East- to define the term psychological control and the authors found a relevant cross-cultural consensus in the participants response. However, the study was limited for not distinguishing between maternal and paternal PC in their analyses.

The present study aims to test for reciprocal and cumulative associations between maternal and paternal PC and adolescents' adjustment in countries as Italy, USA and Colombia in order to

derive useful information regarding how family and parenting processes are associated with adolescents' adjustment problems in samples embedded in different cultures.

The present study

Maternal and paternal co-parenting in two-parents' families fundamentally occur at a dyadic level. As family system theorists suggests (Minuchin, 1988), individuals within the same dyad are by nature interdependent. Thus, it is possible that one's experience of parenting is linked not only to one's own parenting experience across time (actor effects) but also to one's partner's experience of parenting (partner effect). Although some researchers suggested that maternal and paternal PC might be conceptually and empirically distinguishable, they are nonetheless theorized to influence one another in a reciprocal way (Rogers et al., 2003; Scharf & Goldner, 2018). In the case of the present study, one's experience of use of PC may also be linked to one's partner's experience of the use of PC across time. As noted above the existing literature has conducted very few studies on the presence of partner effects in the association between maternal and paternal PC. Existing literature has been limited in terms of demonstrating the theorized reciprocal association between maternal and paternal PC. For instance, research has failed to include both mothers and fathers and control for their reciprocal influences also when exploring the longitudinal relation between PC and adolescents' adjustment (e.g., Barber & Olsen, 2005; Nelson & Crick, 2002). While an increasing number of studies are focusing on associations between mothers' and adolescents' dyads (Aunola et al., 2013), we were able to find only few studies addressing the question of a reciprocal association between maternal and paternal PC over time. For instance, Aunola and coll. (2017) directly tested maternal and paternal reciprocal associations in mothers' and fathers' daily reports of PC. Even it was not a specific goal of the study, the authors investigated, through cross-level interactions, the possibility that mothers' emotions would be related to fathers' use of PC beyond fathers' own emotions (and vice versa). Results showed that there were no statistically significant cross-parent effects, however the authors introduced the relevance of testing these dyadic dynamics for the offspring's adjustment.

Within the family environment, if one parent has a tendency to use PC as parental strategy, he or she may influence his or her partners' parental strategy in the process of parental negotiation; as a result, the other partner is likely to respond by adopting a similar parental strategy or to differentiated him- or herself from the other parent by adopting different parental strategies. more support and less undermining in co-parenting. This pattern of influences might be maintained across time and determine different outcome for adolescents' adjustment (Masten & Ciccheti, 2010; Shanahan, L., McHale et al., 2007).

The present study examines such potential longitudinal associations between maternal and paternal use of PC using the Actor–Partner Interdependence Model (APIM) to account for the interdependence between partners and to test for possible actor and partner effects (Cook & Kenny, 2005). The APIM within a Structural Equation Modeling (SEM) framework also makes it possible to directly test the effects of these dyadic associations on the outcome of interest. Although several studies demonstrated, the possible bidirectional relations between maternal PC and adolescents' adjustment (e.g. Laird et al., 2011; Soenes & Beyers, 2012), mothers and fathers' PC over time has been rarely modeled.

Overall aims of the Study

In the present study, we used three waves of data with a sample of Italian, North-American and Colombian families to explore whether and how maternal and paternal PC (i.e. *Guilt Induction* and *Verbal Constrain*) are associated over time and how these dyadic associations influence adolescents' adjustment in the three cultures. Specifically, we investigated longitudinal and bidirectional effects between the variables based on the APIM cross-lagged model while controlling for stability and autocorrelation effects. We examined the moderating role of culture using multi-group comparisons among the three countries and we also tested for gender differences in these effects to further understand the associations between maternal and paternal PC in a developmental framework.

Specific Aims and Hypotheses

1) The first aim was to test the longitudinal reciprocal associations between maternal and paternal *Guilt Induction* and *Verbal Constrain* and their influence on adolescents' adjustment one year later in Italian, North-American and Colombian families (Conceptual Model in *Figure 1*). According to Study 1, we expect earlier parental PC to be positively associated with subsequent one's own level of PC a year later (*actor-effect*). Reciprocally, we hypothesized one parent's level of PC to be positively correlated with the other parent's PC (*partner-effect*). We finally expected PC to be positively associated to both antisocial behaviors and internalizing symptoms (Barber, 1996; Soenes et al., 2012). To our knowledge, no previous study tested parental actor and partner effects of PC and their associations with adolescent's adjustment in a cross-cultural framework. However, according to previous studies suggesting how PC-related mechanism might be considered universal (Soenes & Beyers, 2012), we hypothesized that the proposed model would be tenable for the three countries.
2) The second aim of the study was to test for indirect effects of parental PC on adolescents' adjustment through partners' level of PC. Using a cross-lagged APIM, we are allowed to test whether longitudinal indirect actor and partner associations exist between parental PC and adolescents' adjustment (Ledermann et al., 2011). Various longitudinal indirect actor and partner associations may emerge representing the long-lasting implications of parents' earlier levels of PC for their own and partners' PC. However, given the exploratory nature of these analyses, and that no prior studies have tested similar pathways, we hypothesized, - based on conceptual and theoretical framework of interdependence of family systems (e.g. Family System Theory)- that prior levels of parental PC are indirectly associated to adolescent's adjustment over time through the influence of the partner's parental strategy.

3) The second aim of the study was to test for gender differences in these effects, by directly testing parental gender differences in actor and partner effects and controlling for adolescents' gender in all the analyses. Literature on gender differences in PC has reached mixed conclusions (Scharf & Goldner, 2018). In the present study, it is posited that both gender of parent and adolescent might affect the link between PC and adjustment. In a dyadic framework, it is also hypothesized that the effect of PC by one parent might depend on whether the other parent also engages in same parental strategy.

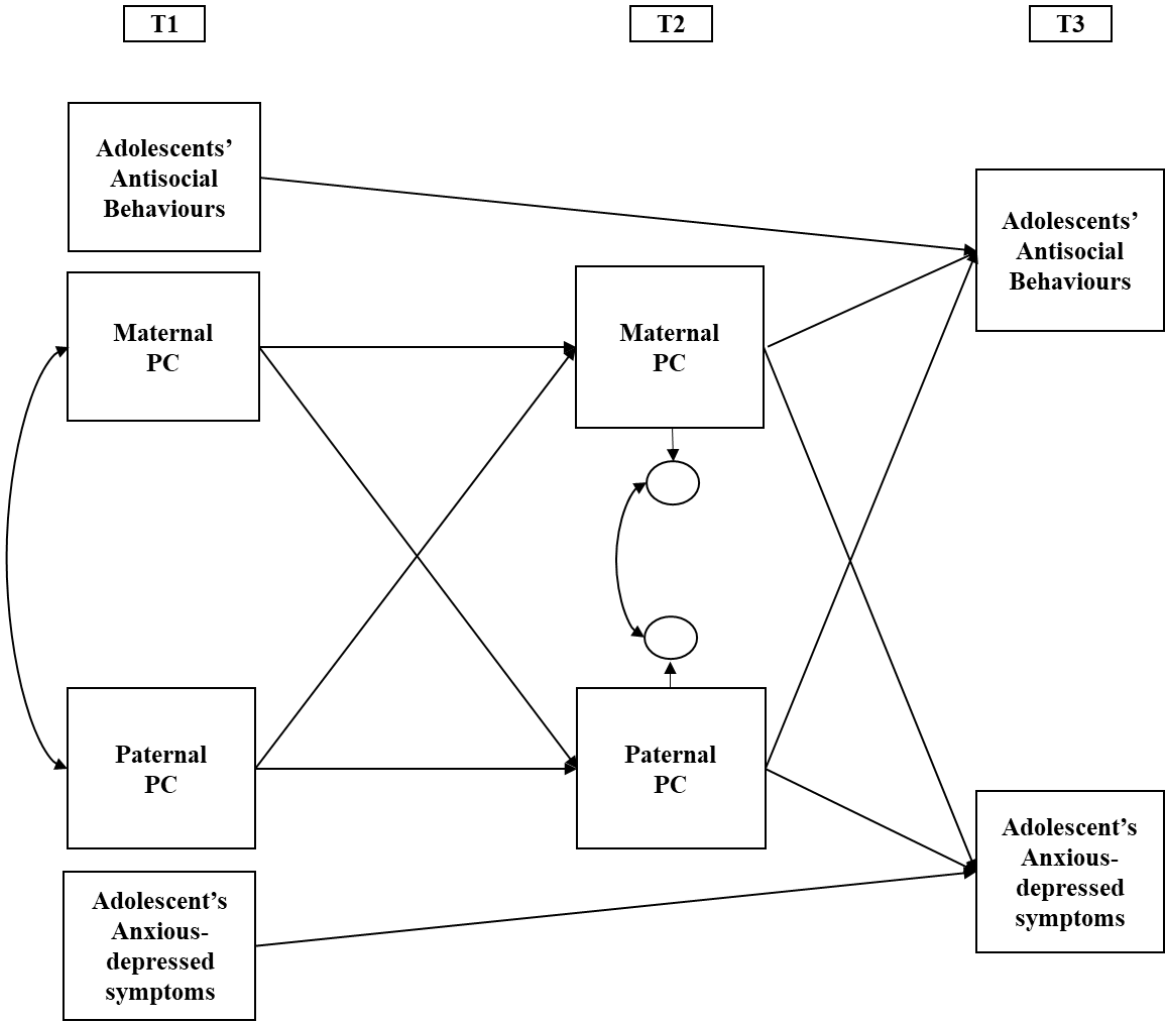


Figure 1. Cross-lagged Actor-Partner Interdependence Model (APIM) model of maternal and paternal PC.

Method

Participants

Participants - recruited from the longitudinal study entitled Parenting Across Cultures (e.g., Lansford et al., 2014) - included 372 families from Italy, Unites States of America and Colombia with data at annual study years 5 (T1), 6 (T2) and 7 (T3) [adolescents' age: 13.70 years (SD = .67; range = 12–16) at T1, 14.95 years (SD = .73; range = 13–17) at T2, and 15.99 years (SD = .78; range = 14–18) at T3].

The gender distributions, average age and sample sizes by location at T1 were: Rome and Naples, Italy (48,6% female, age=13.5, *n* = 148); Medellín, Colombia (54,1% female, age=13.4, *n* = 74); Durham, North Carolina, United States (44% female, age=14,02, *n* = 154). Mothers reported that 79.3% were married, 11.2% were unmarried or cohabitating, 1.3% were remarried and 8.1% were separated or divorced. The non-resident parent (if the couple was separated or divorced) also could participate. Mothers averaged 43.02 years (SD = 6.53) and fathers 45.70 years of age (SD = 6.91) at T1. Mothers completed 12.88 years (SD = 4.93) and fathers completed 12.53 years of education (SD = 5.12) on average. Family income was reported using 10 income ranges on an ordinal scale rated from 1 to 10; 21.5 % of families reported income in the lowest two categories, and 22.9% reported income in the highest two income categories.

Procedure

See the "Procedure" section in Chapter II, p.36

Measures

Parental Psychological Control. At Time 1 and Time 2 mothers and fathers completed measures assessing their perceptions of their use of Psychological Control via an adapted version of the Psychological Control and Autonomy Granting Scale (Barber et al. 1996; Silk et al., 2003) consisting in 11 items. Parents reported their rates of agreement on a 4-point scale with 1 = *"Strongly Disagree"*, to 4= "*Strongly Agree"*. Items were averaged to create two subscales items reflecting

parents' perceptions of their use of two dimensions of PC. According to the definition provided by Barber, 1996 - we labeled the first dimension as *Guilt Induction* (3 items, e.g. "When my child gets a poor grade in school, I make him/her feel guilty.") to refer to parental strategies aimed to evoke feelings of guilt, sadness and worries in the youth for having done things that have a negative emotional impact on other family member. These strategies may also include the withdrawal of love and the parental threat of leaving the interaction with the child when he or her does something that contrary to expectations. The second dimension, *Verbal Constrain* (4 items, e.g. "I say that my child shouldn't argue with adults") concerns the interference and the containment of the children's expression of opinions and ideas as a way of dominating the conversations with them and invalidating their contents. Descriptive statistics and Cronbach Alphas by study site are reported in Table 2a, 2b, 2c.

Anxiety/depression and delinquent behavior. Adolescents' reports of anxiety/depression and delinquent behavior were assessed using the Youth Self-Report (YSR; Achenbach, 1991). The YSR consists of 53 items rated on a 3-point scale with 0= "*Not*", 1= "*Somewhat/Sometimes*", 2= "*Very/Often*". The delinquent behavior scale - 11 items, e.g. "I steal things from places other than home"- was used in the current study to index externalizing behavior problems, and the anxiety/depression scale - 16 items, e.g. "I worry a lot" - was used to index internalizing problems. Delinquent behavior and anxiety-depression scale scores from the YSR were created for Time 1 and Time 3. Descriptive statistics and Cronbach Alphas by study site are reported in Table 2a, 2b, 2c.

Control variables. We controlled for adolescents' gender - coded 1 for males and 2 for females-, parental Marital Status and Number of Children in the household. We also controlled for an index of family Socio-Economic Status (SES), created by averaging parental Education and family Income ($r > .60$ in the three countries).

Attrition

As described earlier, parental reports of PC were collected at Time 1 and Time 2, while the youth reported anxious-depressed and delinquent behaviors were collected at Time 1 and Time 3. The family members' participation rate remained high across time. Specifically, in Italy the retention rate from T1 to T2 was 97,95% for mothers, 89,61% for fathers and retention rate from T1 to T3 was 95.23% for youth. In the USA the retention rate from T1 to T2 was 92,20 % for mothers, 78,57% for fathers and for youth retention rate from T1 to T3 was 91.55%. In Colombia from 91,89 % of mothers and 85,13% of fathers participated at T2 data collection, while for youth, retention rate from T1 to T3 was 89.18%. (site specific sample sizes over time are reported in Table 1). The attrition rate was principally due to two main reasons: unavailability of the subjects to participate in the later data collections in the ongoing longitudinal study or their unwillingness to participate in that specific wave.

The analysis of variance reported that the missing participants in the three countries did not significantly differ from their counterparts in their Marital Status, Socio Economic Status, Perceived PC, antisocial behaviors and internalizing symptoms except for few cases. Specifically, in Italy missing mothers reported to use less *Guilt Induction* [F(1,147) =5.390, p=.022] and *Verbal Constrain* [F(1,147) =13.850, p=.000] compared to their counterparts. Moreover, in USA missing families reported to have a slightly lower SES than the families that continued the study [F(1,152) =5.122, p=0.025].

Table 1. Samples size across measurement waves for Italy, USA and Colombia

	Italy		USA		Colombia	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
Wave 1	n= 147	n=147	n= 153	n=153	n= 73	n=73
Wave 2	n=145	n=139	n=141	n=120	n=67	n=62
Wave 3	n=140	n=135	n=142	n=124	n=67	n=64

Data Analytic Approach

Descriptive statistics and correlation analyses were conducted using SPSS 20.0. Hypotheses were tested via *Mplus 7* (Muthèn & Muthèn, 2012), by conducting a longitudinal cross-lagged, Actor Partner Model in a Structural Equation Modeling (SEM) framework (Garcia, Kenny, & Ledermann, 2015; Maxwell, Cole, & Mitchell, 2011). SEM is particularly advantageous in the current study because it allowed us to simultaneously estimate the potential bidirectional associations between parental PC across time, while also testing the associations to adolescents' adjustment. As depicted in Figure 1, we tested a two-waves APIM for both *Guilt Induction* and *Verbal Constrain* variables, in which the associations between maternal and paternal PC were tested along with their effect on adolescents' adjustment one year later. We also controlled for the stability of adolescents' delinquent behaviors and anxious-depressive symptoms by including their reports at T1.

The estimation of the APIM model allows to effectively account for the interdependence between the two members of the parental couple, by considering the couple as the unit of analysis; to simultaneously estimate both within partner (i.e., *actor effects*) and cross-partner associations (i.e., *partner effects*); to address more appropriately the directionality of the associations.

First, we ran the models for each country to test whether they fit the data properly. Next a multi-group path model was estimated to compare the same model in Italy, USA and Colombia. We

compared a model in which paths were free to vary across countries to one in which paths were fixed to be equal across sites. If constraining all the paths to be equal yielded a worse fit to the data, using modification indices, site-specific paths were iteratively freed until optimal model fit was achieved.

The model estimation method selected the robust maximum likelihood estimation (Muthén & Muthén, 2012). Model adequacy was evaluated using multiple indices (Kline, 2011), including the $\chi 2$ statistic, CFI, TLI and RMSEA. Models with nonsignificant $\chi 2$ values, CFI and TLI values > .90, and RMSEA values < .08, were considered to have an acceptable fit. However, given its sensitivity to sample size, a significant $\chi 2$ should be expected for most models (Byrne, 2001). Missing values in the present study were primarily due to the unavailability of data from a specific wave and were handled via full information maximum likelihood (FIML) (Acock, 2005).

To test for indirect effects Bootstrap methodology (MacKinnon et al., 2002) was employed using Mplus 7.0 (Muthen & Muthen, 2012) with 5,000 bootstrap samples. Bootstrapping estimates indirect effects through empirical sampling distributions by calculating confidence intervals. If zero is not included within the intervals, statistical significance is examined and the null hypothesis of no indirect effects is rejected (MacKinnon et al., 2004).

Results

Descriptive statistics, measure reliabilities and Pearson's correlations among the study variables are presented in Table 2a, 2b, 2c. All measures had adequate reliabilities. Correlations are presented in Tables 1a,1b,1c. Mothers and fathers showed moderate positive correlations in both levels of *Guilt Induction* and *Verbal Constrain* in the three countries. Furthermore, Italian and Colombian mothers' Guilt Induction was positively associated with to greater T3 adolescents' antisocial behaviors, while negative significant association between Italian fathers' reports of Verbal Constrain and adolescent's anxious-depressed symptoms. Both antisocial behaviors and anxious-depressed symptoms showed significant stability in the three countries from T1 to T2.

Table 2a. Descriptives. Reliability values and Correlations among the examined variables in Italy

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guilt Induction																
Mother report; Time 1	2.16	.81	.75	(1)	1											
Father report; Time 1	2.08	.81	.75	(2)	.16	1										
Mother report; Time 2	2.15	.81	.70	(3)	.60**	.35**	1									
Father report; Time 2	2.05	.79	.70	(4)	.24**	.68**	.33**	1								
Verbal Constrain																
Mother report; Time 1	2.72	.62	.70	(5)	.49**	.12	.43**	.21*	1							
Father report; Time 1	2.71	.64	.69	(6)	.19*	.43**	.24**	.39**	.36**	1						
Mother report; Time 2	2.63	.70	.72	(7)	.39**	.25**	.47**	.29**	.61**	.42**	1					
Father report; Time 2	2.50	.70	.76	(8)	.26**	.32**	.33**	.46**	.32**	.65**	.391**	1				
Adolescents' reported adjustment																
Antisocial Behaviors; Time 1	.17	.17	.61	(9)	.20*	.09	.15	.16	.06	.04	.079	.13	1			
Anxiety-Depression; Time 1	.53	.35	.78	(10)	-.05	-.09	-.14	-.16	-.03	-.13	-.02	-.08	.32**	1		
Antisocial Behaviors; Time 3	.21	.19	.64	(11)	.14	.04	.19*	.14	.04	-.05	.11	.02	.63**	.21*	1	
Anxiety-Depression; Time 3	.60	.43	.85	(12)	-.10	-.13	-.11	-.27**	-.15	-.14	-.09	-.20*	.15	.57**	.09	1

Note. *=$p \leq 0.05$; *=$p \leq 0.01$

Table 2b. Descriptives. Reliability values and Correlations among the examined variables in USA

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guilt Induction																
Mother report; Time 1	1.69	.69	.72	(1)	1											
Father report; Time 1	1.70	.62	.64	(2)	.02	1										
Mother report; Time 2	1.70	.68	.70	(3)	.50**	.14	1									
Father report; Time 2	1.62	.64	.68	(4)	.07	.35**	.10	1								
Verbal Constrain																
Mother report; Time 1	2.44	.65	.65	(5)	.32**	.01	.19*	.20*	1							
Father report; Time 1	2.50	.63	.65	(6)	.07	.31**	.08	.30**	.33**	1						
Mother report; Time 2	2.46	.68	.71	(7)	.32**	.12	.43**	.30**	.56**	.43**	1					
Father report; Time 2	2.42	.66	.69	(8)	.01	.35**	.08	.46**	.43**	.51**	.43**	1				
Adolescents' reported adjustment																
Antisocial Behaviors; Time 1	.17	.17	.60	(9)	-.07	.18*	-.00	.27**	.09	.06	.00	.18*	1			
Anxiety-Depression; Time 1	.40	.36	.82	(10)	-.14	.13	.05	.02	-.02	-.12	-.06	-.00	.32**	1		
Antisocial Behaviors; Time 3	.28	.24	.70	(11)	-.00	-.04	.14	-.03	.05	.03	-.04	-.00	.37**	.23**	1	
Anxiety-Depression; Time 3	.54	.46	.87	(12)	-.02	-.08	.12	-.06	.03	-.17*	-.10	-.10	.01	.51**	.31**	1

Note. *=$p \leq 0.05$; *=$p \leq 0.01$

Table 2c. Descriptives. Reliability values and Correlations among the examined variables in Colombia

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guilt Induction																
Mother report; Time 1	2.52	.70	.60	(1)	1											
Father report; Time 1	2.35	.76	.71	(2)	.19	1										
Mother report; Time 2	2.51	.74	.67	(3)	.39**	.19	1									
Father report; Time 2	2.44	.80	.84	(4)	.17	.43**	-.08	1								
Verbal Constrain																
Mother report; Time 1	3.12	.60	.70	(5)	.32**	.03	.34**	.02	1							
Father report; Time 1	3.00	.60	.67	(6)	.13	.44**	.10	.14	.19	1						
Mother report; Time 2	3.18	.59	.67	(7)	.27*	.13	.27*	.01	.56**	.22	1					
Father report; Time 2	2.85	.67	.76	(8)	.39**	.45**	.16	.42**	.22	.39**	.18	1				
Adolescents' reported adjustment																
Antisocial Behaviors; Time 1	.22	.18	.54	(9)	.16	.14	.08	-.01	-.19	.15	.06	.14	1			
Anxiety-Depression; Time 1	.56	.34	.71	(10)	.26*	-.00	.10	-.07	-.06	.06	-.12	.04	.24*	1		
Antisocial Behaviors; Time 3	.33	.25	.64	(11)	.12	.19	.28*	.07	.00	.14	.15	.08	.56**	.19	1	
Anxiety-Depression; Time 3	.67	.47	.85	(12)	.14	.01	.16	-.16	-.13	.14	-.03	-.08	.27*	.53**	.34**	1

Note. *=$p \leq 0.05$; *=$p \leq 0.01$

A structural equation APIM model was firstly implemented for each country to test whether the hypothesized model provided a good fit to the data. According to the APIM implementation, actor and partner effects were tested simultaneously and the same observed variables relative to parental PC at time 1 and 2 were allowed to be error-correlated (Little, 2013). To exclude the possible influence of the demographic variables, they were added to the models as control variables simultaneously. Models in each country showed an acceptable fit both for *Guilt Induction* and *Verbal Constrain* (Table 3), then we proceeded to test the same model through a Multi-group analysis comparing Italy, USA and Colombia. Standardized coefficients for the three countries are presented in Figure 2.

Table 3. Model fit of APIM models for study site

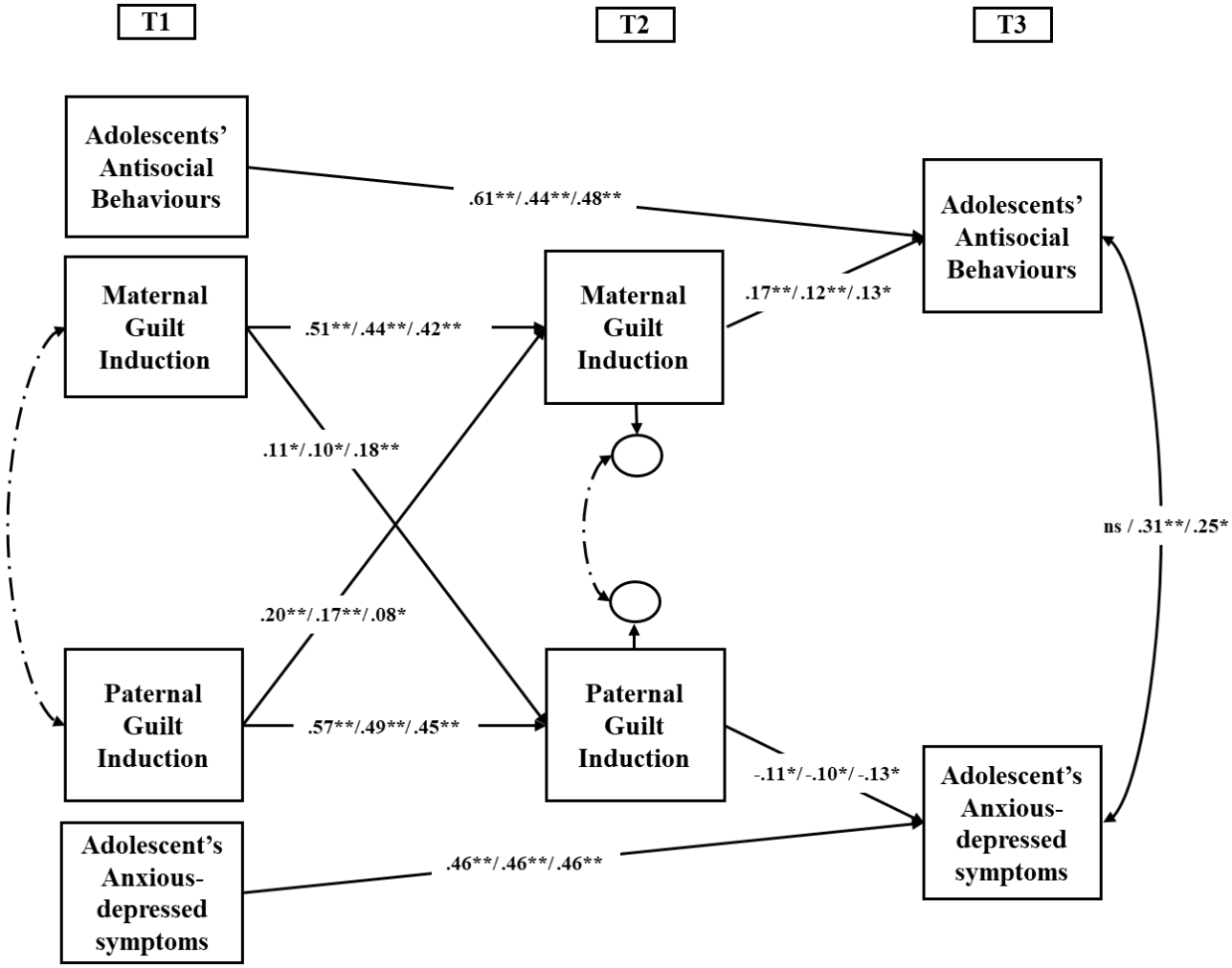
APIM for Study Sites					
	χ^2	*df*	CFI	RMSEA	SRMR
Guilt Induction					
Italy (n=147)	34.936*	22	.965	.063 (.014,.101)	.048
USA (n=153)	42.191*	22	.907	.077 (.041,.112)	.055
Colombia (n=73)	17.940	20	1.00	.000 (.000,.089)	.056
Verbal Constrain					
Italy (n=147)	27.399	22	.986	.041 (.000,.084)	.037
USA (n=153)	31.520	22	.970	.053 (.000,.092)	.045
Colombia (n=73)	16.998	20	1.00	.000 (.000,.059)	.032

Note. *=p<.05; **=p<.001

Regarding the model for *Guilt Induction*, we first fitted a model in which paths were allowed to vary across country and it showed a good fit to the data [$\chi^2(42) = 66.033$, p=.010, CFI=0.96, TLI=0.90, RMSEA=.068 (90% CI=0.068 [.033, .098]). Then, in order to test cross-cultural invariance, we constrained all the paths to be equal across the three countries. The chi square comparison did not show a significant difference between the unconstrained and the full constrained model ($\Delta\chi^2(72) = 91.66$, p=.059) and we retain this latter model to examine our results. The final model showed several longitudinal associations between parental PC and adolescents' adjustment that were invariant across the three countries. The APIM in figure 2 showed that for both mothers and fathers, earlier use of PC predicted their PC one year later (*actor effects*); from T1 to T2, mothers' and fathers' earlier use of PC was positively associated to their partner's later use of PC (*partner effects*). In addition, direct positive significant associations were found between maternal PC and adolescents' antisocial behaviors, while a negative and significant association was found between paternal PC and adolescents' anxious-depressive symptoms. These associations were found controlling for the previous levels of adolescents' adjustment at T1. For sake of clarity, the significant path coefficients of the control variables were not displayed in the model but described as follows:

the predictive coefficient of Marital Status was positive for paternal *Guilt Induction* at T2 (β=.11, p<.05; β=.15, p<.05; β=.14, p<.05 for Italy, USA and Colombia, respectively); family SES was negatively associated with maternal *Guilt Induction* at T1 (β=-.19, p<.001; β=-.22, p<.001; β=-.23, p<.001 for Italy, USA and Colombia, respectively); adolescent's gender was negatively associated with paternal *Guilt Induction* at T2 (β=-.13, p<.05; β=-.13, p<.05; β=-.11, p<.05 for Italy, USA and Colombia, respectively) and positively associated with adolescents' reported anxiety/depression at T3 (β=.24, p<.001; β=.23, p<.001; β=.25, p<.001 for Italy, USA and Colombia, respectively).

Figure 2. APIM Model of relations of maternal and paternal Guilt Induction and adolescents'(mal)adjustment.

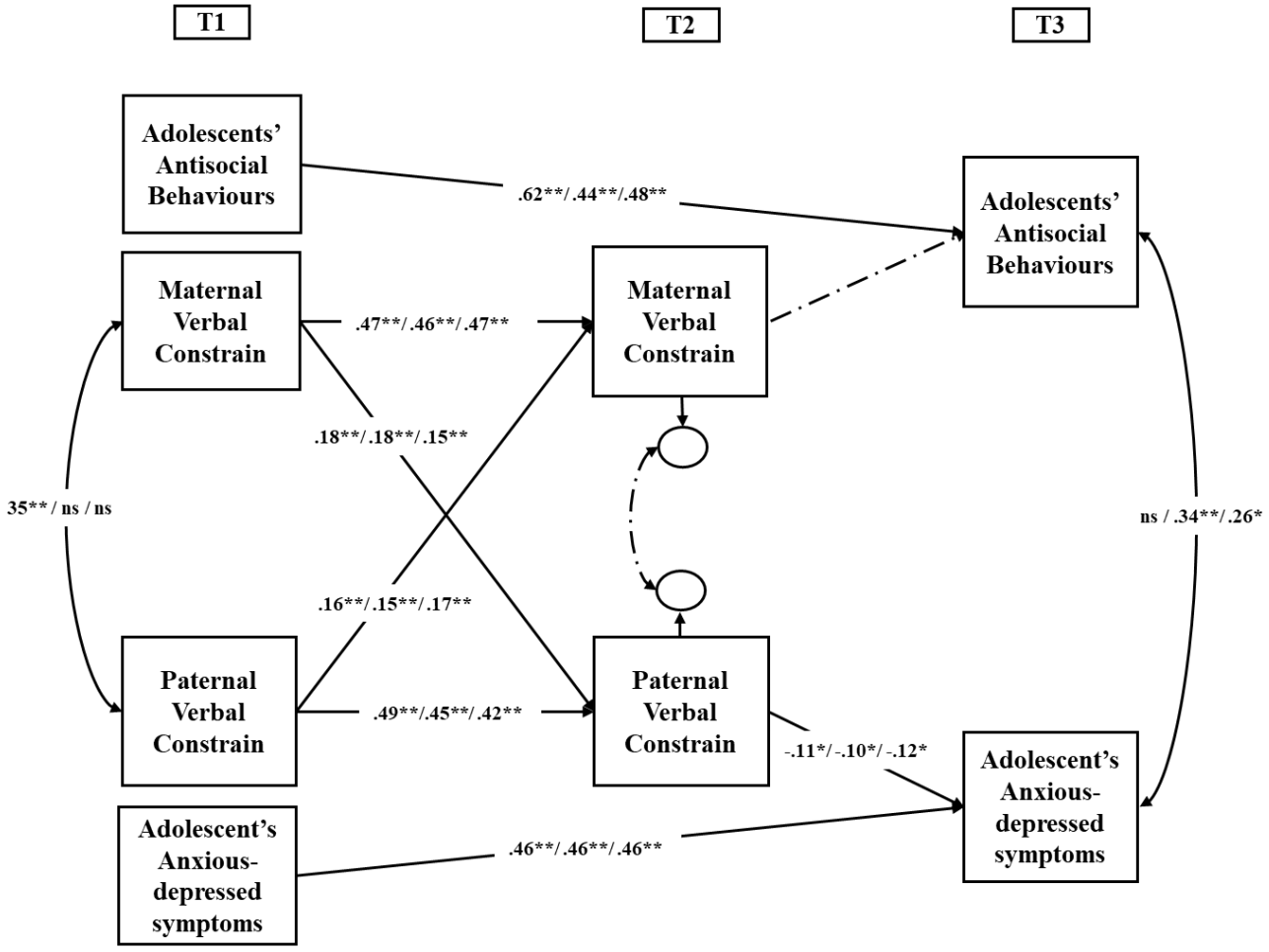


Note. *=p<.05; **=p<.001. Standardized coefficients are presented for Italy/USA/ Colombia. Dotted lines indicate non-significant associations. For ease of interpretation, within-wave covariances and paths from adolescents' gender, Family SES, Number of Children in the Household, Parental Marital Status are not depicted in the Figure. Underlined coefficients indicated non-invariant paths.

Regarding the model for *Verbal Constrain*, we followed the same procedure described above and we first fitted a model in which paths were allowed to vary across country that showed a good fit to the data [$\chi^2(42) = 49.124$, p= 0.20, CFI=.99, TLI=.96, RMSEA=.037 (90% CI=0.37 [.000, .074]). Then, we constrained all the paths to be equal across the three countries. The chi square comparison showed that the full constrained model had a worse fit ($\Delta\chi^2(72) = 112.82$, p<0.001) and we proceeded by freeing the paths that were different across country. Overall, across the three countries, only three paths in the model had to be freed to obtain an acceptable fit [$\chi^2(111) = 136.635$, p= .049, CFI=0.96, TLI=0.95, RMSEA=0.043 (90% CI=0.043[.002, .066]). These included a residual correlation between maternal and paternal *Verbal Constrain* at T1 for the Italian sample and two main effects of two covariates on parental *Verbal Constrain*: the main effect from Numbers of Children in the household to maternal *Verbal Constrain* in the Colombian sample at T2 and the main effect from adolescents' gender to paternal *Verbal Constrain* in the Italian sample at T1. Wald tests (*W*) revealed that the freed path coefficients were statistically different ($p < .05$) for the identified country compared to all other countries. The final model showed (Figure 3) showed that for both mothers and fathers, earlier use of PC predicted their PC one year later (*actor effects*); from T1 to T2, mothers' and fathers' earlier use of PC was positively associated to their partner's later use of PC (*partner effects*). In addition, a direct negative significant association was found between paternal *Verbal Constrain* and adolescents' anxious-depressive symptoms, while no significant association was found between maternal *Verbal Constrain* and adolescents' adjustment. Again, these associations were found controlling for the previous levels of adolescents' adjustment at T1. Significant path coefficients of the control variables were not displayed in the model but described as follows: the predictive coefficient of Marital Status was negative for maternal *Verbal Constrain* at T2 (β=-.06, p<.05; β=-.09, p<.05; β=-.11, p<.05 for Italy, USA and Colombia, respectively); family SES was negatively associated with maternal *Verbal Constrain* at T1 (β=-.32, p<.001; β=-.33, p<.001; β=-.38, p<.001 for Italy, USA and Colombia, respectively), at T2 (β=-.24, p<.001; β=-.24, p<.001; β=-.28, p<.001 for Italy, USA and Colombia, respectively) and paternal *Verbal Constrain* at T1(β=-.35, p<.001; β=-.39,

p<.001; β=-.39, p<.001 for Italy, USA and Colombia, respectively) and T2 (β=-.11, p<.05; β=-.11, p<.05; β=-.10, p<.05 for Italy, USA and Colombia, respectively); the number of Children in the Household was associated with maternal *Verbal Constrain* at T2 (β=.08, p<.05; β=.10, p<.05; β=-.21, p<.05 for Italy, USA and Colombia, respectively); adolescent's gender was associated with paternal *Verbal Constrain* at T1 (β=-.15, p<.05; β=.12, p<.05; β=.12, p<.05 for Italy, USA and Colombia, respectively) and positively associated with adolescents' reported anxiety/depression at T3 (β=.25, p<.001; β=.24, p<.001; β=.26, p<.001 for Italy, USA and Colombia, respectively).

Figure 3. APIM Model of relations of maternal and paternal Verbal Constrain and adolescents'(mal)adjustment.



Note. *=p<.05; **=p<.001. Standardized coefficients are presented for Italy/USA/ Colombia. Dotted lines indicate non-significant associations. For ease of interpretation, within-wave covariances and paths from adolescents' gender, Family SES, Number of Children in the Household, Parental Marital Status are not depicted in the Figure. Underlined coefficients indicated non-invariant paths.

In addition to the direct associations (e.g., T1 maternal/paternal PC→T2 maternal/paternal PC→T3 adolescent's adjustment), bias-corrected bootstrapping analyses indicated one longitudinal indirect associations linking paternal *Guilt Induction* to adolescents' antisocial behaviors (b = .008, SE = .003, 95% CI [.002, .014], β=.036; b = .008, SE = .003, 95% CI [.002, .014], β=.021; b = .008, SE = .003, 95% CI [.002, .014], β=.026; for Italy , USA and Colombia respectively).

Finally, to test for parental gender differences in each country, we compared models in which maternal and paternal actor and partner effects were allowed to vary to models in which these paths were constrained to be equal. Chi square comparisons provided no significant differences between mothers and fathers, suggesting that parental stability and reciprocal influences were equivalent across parents.

Discussion

The present study examined the longitudinal associations between maternal and paternal use of PC (i.e. *Guilt Induction* and *Verbal Constrain*) in a dyadic context and the effect of these associations on adolescents' adjustment (i.e. antisocial and anxious-depressing behaviors). The hypothesized associations were tested cross-culturally in order to test the moderation role of culture in families from three countries: Italy, USA and Colombia.

Multigroup cross-cultural comparison

From the Multigroup cross-cultural comparison, we found evidence of moderate stability (*actor effects*) in maternal and paternal *Guilt Induction* and *Verbal Constrain* over 2 years, suggesting that in family life there was continuity in the use of parental PC for both mothers' and fathers' when their adolescents were 13 and 14 years old. We also found evidence of cross-cultural invariance of dyadic associations across time between maternal and paternal PC. Significant partner effects were found for Italian, Colombian and US mothers and fathers, meaning that those parents who reported more use of PC with their adolescents tended to have partners that use more PC one year later. This

is consistent with theory and studies that found that associations among mother and father's PC and autonomy granting were moderately high (e.g. Kunz & Grych, 2013), suggesting that mothers and fathers engage in relatively similar parenting behaviors during interactions with their child as a desire to present their children with consistent expectations, but also as a sign that parents may be influenced by the behavior of their partner during family interactions (Schoppe-Sullivan et al., 2008).

Very limited prior work has theorized that maternal and paternal PC have a reciprocal influence over time such that one parent's tendency to engage in manipulative parental strategy might in turn influence his or her partner's parenting as well (e.g., Aunola et al., 2017). Even fewer studies tested these associations cross-culturally and researchers might advance hypotheses on the impact that the cultural context may have on the reciprocal influences between the parents. Among the few studies that attempted to suggest this hypothesis a study conducted by Costa et al. (2015) on the effect of PC and internalizing distress in Italian emerging adults, it was stated the interdependence among family members could explain the potential differences in the effects of PC among countries. The authors hypothesized that PC in Italy may have a less negative effect on individual adjustment– compared to other Western countries like the USA- because of the relevance of interdependence and loyalty values in Mediterranean culture (Manzi et al. 2006; Scabini et al. 2006). Interdependence and relatedness characterize relationships within families and could account for the presence of reciprocal effects within the parental dyad found in the presence study. The use of PC that highlight the importance of family bonds and intergenerational loyalty, by intruding the autonomy-related processes, might be characterized by a higher agreement between mothers and fathers in collectivist countries (i.e. Italy and Colombia) compared to countries where independence is considered more important (Rothbaum & Trommsdorff, 2007). However, the cross-cultural invariance found in the present study, in line with the evidence found by Costa and colleagues, disconfirmed a difference between the three countries in which both interdependence (i.e. significant partner effects) and associations to maladjustment were found.

Associations between maternal and paternal PC and internalizing and externalizing behaviors

Parental PC was found to be predictive of both antisocial behaviors and anxious-depressing symptoms when adolescents were 15 years old, with some differences between mothers and fathers. Specifically, regarding *Guilt Induction*, maternal parenting was positively associated only with adolescents reported antisocial behaviors, while paternal PC was associated with anxious-depressing symptoms, but, contrary to our expectations, this association was negative, suggesting that adolescents whose fathers tended to use guilt inducing strategies reported fewer internalizing symptoms. Furthermore, a finding in the same direction was evidenced in the case of *Verbal Constrain*: only paternal PC was negatively associated with adolescents' anxious-depressive symptoms, while no significant association were found between maternal *Verbal Constrain* and adolescents' mal-adjustment.

This is a remarkable finding, as it is generally found that PC is positively linked to children's maladjustment (Barber, 1996; Kunz & Grynch, 2013; Silk et al., 2003). Reasons that our findings differ from those of previous studies may have to do with the different role mothers and fathers are perceived to play in the family interactions by their children (Stolz, Barber & Olsen, 2005). Some authors suggested that when examining PC and its features across cultures, researchers and professional should focus more on the *perceived* PC rather than on the actual behaviors (e.g. Soenes et al., 2015). Accordingly, but tentatively, the positive association between paternal PC and adolescents' anxiety-depression may indicate a more positive view of paternal controlling strategies perceived by the adolescents as a way to engage more in their life and, consequently, being more present in the parent-child relationships (Scharf & Goldberg, 2018).

This explanation may be justified by the vast literature supporting the idea of a fathers being less involved than mothers in the family dynamics, devoting less time than women in parenting and being perceived less psychologically controlling than mothers (Yavorsky, Dush, & Schoppe-Sullivan, 2015; Lamb, 2012; Roman et al., 2012). It is possible that families in which fathers are (highly)

involved are characterized by different effects of PC in ways that are related to parental autonomy granting (Bogels & Perotti 2010; Bogels & Phares 2008).

Also, cultural beliefs likely provide a different context for thinking about the implications of paternal PC for adolescent's adjustment. For example, an adolescent who highly identifies with the Latinx culture may view a father's controlling style as culturally normative as a function of *familismo* or *machismo*, interpreting it as signs of love and concern (Crockett et al. 2009; Mason et al. 2004), even if studies conducted on Latinx samples showed that this is especially the case for behavioral control (e.g. Ruiz et al., 2002; Shigeto et al., 2019). The present study's lack of an acculturation and/or ethnic identity measure can certainly be viewed as a limitation and future studies are needed to test this hypothesis.

Furthermore, the fact that especially paternal, and not maternal, *Guilt Induction* and *Verbal Constrain* had a relevant role, even if in the opposite expected direction, on adolescence internalizing symptoms, is in line with the work of Lansford and coll. (2014) that reported that fathers' parenting, but not mothers' parenting, was a unique predictor of adolescents' internalizing problems and externalizing problems. Similarly, Verhoeven and coll. (2011) who found that paternal over control was more important than maternal over control in adolescents' anxiety levels and that this association was stronger for older than for younger adolescents (>15). The authors found also a controversial result, namely that higher levels of paternal autonomy granting - over and above maternal autonomy granting - to be related to higher levels of anxiety, but for elementary school-aged children (age >10). For older adolescents a significant positive association between paternal autonomy-granting and anxiety was found, but its strength was marginal. According to authors, fathers are relevant for the representation of the outside world and excessive paternal control might give the adolescent the signal that the outside world is a dangerous place, and that the adolescent cannot cope with it inducing anxious feeling in him or her (Bogels & Phares 2008).

Findings showing that maternal PC was associated to antisocial behaviors, but not internalizing behaviors, were consistent with other studies that showed, when considering both

maternal and paternal reports, that maternal PC was not related to adolescents' internalizing symptoms and /or it was only related to externalizing features of adolescents' behaviors (e.g. Rogers et al., 2003; Verhoeven et al., 2012). It appears that when youth do not perceive support for their desire for greater independence, they may be more likely to respond to maternal PC by engaging in defiant and noncompliant behavior to exert their autonomy. By contrast, our findings were different from those found by other authors that found maternal PC to be associated to higher levels of adolescents' depressive symptoms over and above paternal PC (Baron & MacGillivray, 1989; Kunz & Grinch, 2013) and both maternal and paternal PC associated to both internalizing and externalizing symptoms (Barber et al., 2012; Luebbe et al., 2014). However, these studies, however, use a total scale to measure PC, without differentiating among the different strategies that it may include. By distinguishing between *Guilt Induction* and *Verbal constrain,* our results might suggest different implications based on the strategies mother and fathers tend to use during the interactions with their children.

Adolescence is especially a time of vulnerability for antisocial behavior (Bornstein et al., 2015) and the results of the present study add to the growing evidence of the importance of maternal PC for externalizing problems (Symeou & Giergiou, 2018). Moreover, our findings suggested that paternal PC, especially in the form of constraining adolescent's expression of opinions, may be more relevant for adolescents' internalizing dimensions. Future studies should also continue to explore potential parental gender differences and the ways in which identification with the parenting role or involvement in the relationship may influence the associations between parental PC and adolescents' adjustment.

Understanding parental differential contributions to adolescent behavior problems will help to identify focal points for intervention. These results also carry implications for the question of whether considering maternal and paternal use of different manipulative strategies may provide differential and unique contributions to adolescents' adjustment over time (e.g., Jeynes, 2016). We

considered the differences in the associations between maternal and paternal strategies as evidence of the importance to conceptualize a model in which mothers' and fathers' reciprocity is considered.

Indirect effects

In this direction, our second hypothesis was to test for longitudinal indirect actor and partner associations linking parents' PC and adolescents' adjustment through partners' parenting. Results showed evidence of one indirect association suggesting longitudinal effects of one own' and partners' levels of PC in shaping the development of adolescent adjustment. Specifically, a positive longitudinal indirect association emerged linking paternal *Guilt Induction* and adolescents' antisocial behaviors trough maternal *Guilt Induction*, meaning that the effect of paternal PC on adolescent's behavior problems was also determined by the influence that fathers' parental strategies had on those used by their partners'. This longitudinal indirect actor associations to adolescents' adjustment through partners' levels of parenting clearly demonstrated the long-lasting implications of mothers' and fathers' reciprocal influences on adolescent's antisocial behaviors. These patterns suggested that when considering the effects of parental PC on adolescents' adjustment, mothers' and fathers' perceptions play a unique role in shaping family dynamics, by not only serving as a direct influence on their own subsequent use of negative parental strategies, but also conditioning, indirectly via affecting their partner's use of PC, adolescents' long-term adjustment. According to Grusec and Patterson's (2006) conceptualization of "feedback family processes", inadequate parenting practices direct children to escalating antisocial behavior that, in turn, elicits increased negative parenting practices. Yet problems or vulnerabilities originating in the parental dyad (e.g., lack of resources, negative communication, parenting-related stress) may also start such a vicious cycle. For example, it is likely that those parents experimenting difficulties in dealing with the growing desire for autonomy of their offspring will engage in psychologically controlling behaviors, which would then influence their partner's feeling about adolescent's autonomy and reinforce or contrast the tendency to elect PC as the most effective strategy to maintain family homeostasis (Minuchin, 1988). Prior

research has noted the way that negativity can escalate between partners into a dynamic referred as "reciprocity" (Gottman, 1979). These results support the urge for researchers (e.g., Cook & Kenny, 2005) to take a couple-based (dyadic) approach in both basic research on family functioning and practical intervention efforts with couples and families.

Gender differences in Actor and Partner effects

Our third aim included the tests of gender differences in parental actor and partner effects. Our findings showed no significant differences between mothers' and fathers' actor and partner effects supporting the idea that parents that tend to behave similarly in their interactions with their children are also more likely to influence their partners in the same direction (Lansford et al., 2015). Also, according to Luo & Klohnen (2005), parents tend to influence each other and become more similar over time and this may guarantee - when reinforcing positive practices - an adaptive familiar functioning (Belsky et al., 1998).

Conclusions

Overall, the results of the present study suggest that practices involving conditional love, guilt induction and love withdrawal are deeply embedded in family dyadic interactions over time. Also, they support those theoretical frameworks showing the effects of PC are generalizable in all cultures (Ahmad & Soenens, 2010; Gargurevich & Soenens, 2016).

There are several limitations associated with the current study. First, this study relied on self-reports of perceived parenting and adjustment rather than including observations and more differentiated indexes. Future studies might include both perceived and enacted parenting to better explore whether it is the perceived behaviors, observed behaviors, or discrepancy in these assessments of parent-child perception that is most predictive of adolescents' adjustment. However, it was a specific aim of the study to focus on parental perception that has mostly been overlooked in research (Scharf & Goldner, 2018) and examining the dyadic dynamic among mothers and fathers.

Second, although the current study contained a sample of families from three cultural groups and data form both mothers and fathers, given the complexity of the model, it may be that we were underpowered to detect more nuanced effects.

Finally, although the current study assessed families three times across 3 years, which allowed us to capture dyadic and familial dynamics over fairly long periods of time, our data cannot capture short-term associations between maternal and paternal PC. Considering that parental and couple interactions occur on a daily basis (Belsky et al., 1998; McDaniel, Teti, & Feinberg, 2015) future studies might use daily diary methods to further explore the reciprocity between parental PC and adolescents' adjustment across shorter periods of time.

Despite these limitations, the present study contributed to the research on parental PC in several aspects. First, we included both parents in the model preventing results and conclusion to be based solely on mothering contributions, overlooking paternal role in family dynamics (Jeynes, 2016). We aimed to adopt a longitudinal dyadic approach, by considering dyads as the unit analysis and reciprocal associations as the most reliable proxy of family dynamics (Kashy et al., 2008; Little, 2013). Moreover, literature on PC was enriched by the present contribution in two further aspects. First, including adolescents' adjustment both in terms of internalizing and externalizing behaviors add up to the growing evidence of PC as an important predictor of both dimensions rather than solely on the internalization (Barber, 1996;2002; Scharf & Goldner, 2018; Soenes et al., 2012). Secondly, the cross-cultural design of the present study and the findings of invariance of the associations provide further evidence towards the universality of the effects of PC on family dynamics and adolescents adjustment across diverse cultural contexts (Barber et al., 2005; Fung & Lau, 2012; Gargurevich & Soenens, 2016).

Understanding the distinctiveness of maternal and paternal parenting functioning, as well as the reciprocal influences between the two, provides important implications for prevention efforts in improving family functioning and child development. Professional working in education and intervention programs hoping to enhance and/or maintain parental quality, need to focus on and being

aware of the importance of include both actors in parenting dynamics since paternal PC might have effect on children development over and beyond mother's contribution, and sometimes in an unexpected direction.

A critical step forward of the present study was also the focus on the cultural context by considering the reciprocal parenting influences through which autonomy-related processes unfold. Our analyses showed that PC is similarly associated with adolescents' well-being across diverse cultures (Italy, Colombia, and the United States). The role of cultural orientation in the dynamics of PC was advanced by including mothers and fathers' reciprocal associations, suggesting how studies on PC across cultures might rely on parents' experiences of their own and their partners' parental choices. The variability in demographic characteristics, historical experiences, and cultural traditions across the three cultural groups that were considered in the present study may then be tested in the context of differential (or similar) influences that mother and fathers exert on their children. Professional and family researchers – including those working with families from different cultural background - should also be aware of these cultural features when focusing on the reciprocal influence mothers and fathers exert on each other's and the effects that the vicious cycle has on adolescents' adjustment. Important elements for practitioners may be drawn from this study. On one hand, the present study showed that the dyadic processes were invariant across the three countries, meaning that dyadic interplays between parents might be always expected with Italian, Colombian and US's families; on the other hand, we found different effects of PC on adolescents' adjustment suggesting there are distinguishable forms of PC that may have different relevance across cultures. Working with Colombian couples and families may require higher sensitivity on the meaning of PC, given the importance of values of *familismo* and *respeto* for family relationships. In these families, control has been found to be often interpreted as a way of teaching their children to behave consistently with family's values (Fung & Lau, 2012; Roche et al., 2019). Similarly, when working with Italian couples and families, the importance of family relationships in the Mediterranean culture and factors such as prolonged coresidence of youths with their parents (e.g. Scabini,& Lanz, 2006) should be taken into

account when focusing on PC-related processes and their autonomy-related effects (Manzi et al., 2006). Finally, in more individualistic contexts such as the USA, parents who are psychologically controlling were found to hold more negative perceptions about their children with important implications in both parental and parent-youth dyadic processes (Davis et al. 2015; Taylor et al. 2012).

Given our findings of partner effects in the longitudinal associations in parental PC, we believe it is important to take a dyadic cross-cultural perspective when examining relationship processes and future studies are needed in which the role of specific cultural aspects in these associations are tested.

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CHAPTER IV

STUDY 3

The Role of Dyadic Coping in the Relationship between Family Stressors and Parent-Child Relationship Quality: Longitudinal Associations in Eight Countries

Abstract

The present study aimed to extend research on Dyadic Coping (DC) – intended as the ability of partners to cope with stressors as a couple - and its role in broader family functioning by investigating its associations with parenting dimensions (i.e. Parent-Adolescent Relationship Quality, P-ARQ). Little is known about the specific link between marital DC and parenting and further studies are needed to investigate this association (Zemp et al., 2016). Our contribution focused on the mechanism through which supportive or unsupportive partners' coping interactions spills over on the way they engage, as parents, in the relationship with their children. According to parenting process models (e.g Belsky, 1984), marital characteristics are fundamental determinants of parenting by affecting, in turn, child development. The present project aimed to examine whether and how elements of internal (Family Chaos) and external (Life Events) family stress are associated with both DC and P-ARQ. It further tested the cross-cultural generalizability of the aforementioned associations, by comparing the proposed model across 8 countries: Italy, Kenya, Philippines, Thailand, Sweden, USA, Colombia, Jordan. Participants included 975 families from the eight countries with data collected annually for three years (see Study 1&2). Parents completed the Life Events measure (Dodge, Pettit, & Bates, 1994) and the Confusion, Hubbub, and Order Scale (Matheny et al., 1995) to measure *Family Events* and *Family Chaos*, respectively. *Dyadic coping* was assessed via an adapted version of the Dyadic Coping Inventory (DCI; Bodenmann, 2008). Both parents were asked to report on the way they handle stressful situations within their couple. The *Parental Acceptance-Rejection/Control Questionnaire-Short Form* (PARQ/Control-SF; Rohner, 2005) was used to measure youth-report of P-ARQ. Overall, findings confirmed our hypotheses and showed that parental positive DC had a significant positive longitudinal effect on P-ARQ. Notably, findings showed that this association was significant especially for fathers. Specifically, after controlling for stability in P-ARQ from T1 to T3, as well as relations among all variables within each wave, only changes in paternal DC predicted a higher P-ARQ with their fathers as perceived by the adolescents. Our findings suggested also that positive DC had a significant longitudinal effect on youth reported P-ARQ that was generalizable across the eight countries. However, a few of the effects were site-specific.

Keywords: Dyadic Coping, Cross-cultural studies, Parent-Adolescent relationships, Spill-over effect

Introduction

Stress that spills over into family lives can increase and exacerbate the presence of negative interactions among family members at different levels (e.g. parenting, marital quality and child

adjustment) (Belsky et al., 1995; Cummings et al., 2010; Davies & Cummings, 1994). According to Parenting Process and Family Stress Models (e.g. Belsky, 1984; Conger et al., 1994) marital relationship quality is one of the most relevant determinants of parenting in predicting parents' ability to cope with family stressors and develop a positive relationship quality with their children. Research on the effects of coping with stress on families has grown considerably in the recent years. An important advancement in coping research has been the change of perspective that considered coping with stress mostly as an individual process to the idea that coping can be considered a relational process, therefore deeply influenced by the relationships people have with others (Bodenmann, 2004; Herzeberg, 2012). According to this perspective, coping processes have been extensively studied in dyadic relationships, showing to play a very important role in couple's dynamics (Randall & Bodenmann, 2009).

Dyadic Coping (DC), enabling partners to support and help each other cope with the experienced stress (Bodenmann, 1995; 1997), may mitigate this negative stress spillover process. DC has been largely studied and have been found to be relevant for relationship satisfaction (e.g. Falconier, 2015), marital support (e.g. Badr et al., 2010) and intimacy (e.g. Bodenmann et al., 2010). However, very few studies have investigated the way in which the specific process of DC can influence broader family's dynamics and development, including parenting and child adjustment. Moreover, previous studies suggest that the association between DC and relationship satisfaction may be influenced by couple's cultural backgrounds (Falconier et al., 2015; Hilpert et al. 2016), although studies on this regard exclusively focused on partners' relationship satisfaction, which leaves an unanswered question about whether and how culture moderates the association between DC and parent-child adolescents' relationship.

The goal of the current study was to contribute to the literature on DC by examining its longitudinal associations with parent-adolescents' relationship quality (P-ARQ) and testing the generalizability of these associations across 8 countries.

The role of Dyadic Coping in couples' romantic relationship

According to the Systemic-Transactional perspective (Bodenmann, 1995; 2005), Bodenmann introduced the construct of DC, defined as the way the partners cope with common daily life stressors by dealing with them cooperatively, together as a couple. The DC is embedded in a circular process in which the communication of a partner's stress is perceived, decoded and evaluated by the other partner, who then responds with his/her coping strategies. Partner coping responses are in turn perceived, decoded and evaluated by the other partner (Bodenmann, 2008). DC provides a two-fold contribution to couple relationship: a) it restores or maintains the individual well-being of both partners through a reduction of their stress level b) promotes optimal functioning of the relationship, through reinforcement of the sense of "*We-ness*" as partners and their mutual trust (Bodenmann, 2005; Cutrona, 1996).

Specifically, DC it is conceptualized as a multi-dimensional construct composed by stress communication, positive and negative components. Positive forms of DC include *supportive coping*, when one partner supports the other in his or her coping efforts through both problem- and emotion-focused support; *common DC*, when both partners engage together in problem- and/or emotion-focused strategies when coping with common stressors (e.g., joint problem-solving, sharing of feelings); *delegated coping* that involves one partner explicitly taking over the partner's tasks and duties in an effort to reduce the partner's stress. Negative forms of DC include *hostile DC* when a partner reacts to the other's communication of the stress with sarcasm or derision; *ambivalent DC* when partner's attitude expresses reluctance to help, and/or the other partner it is seen as inferior or incompetent (in this case a partner offers his/her help, but he/she has the feeling that the other should not have ask); finally, *superficial DC* is manifested when the partner provides support to the other but does so insincerely and not genuinely, for example, asking what the problem is, but without listening the other's response or hugging him/her without showing emotional involvement.

Coping together with stress as a couple has been found to be an important predictor of relationship functioning and stability (Bodenmann, Pihet, & Kayser, 2006; Landis et al., 2013; Papp

& Witt, 2010) along with of relationship satisfaction (Falconier et al. 2015 for a review), sexual satisfaction and partners intimacy (Bodenmann et al., 2010). Associations between DC and relationship functioning (e.g., marital satisfaction, marital communication) have been largely supported (Bodenmann, Meuwly, & Kayser, 2011), with DC being a stronger predictor of relationship quality than individual coping strategies (Herzberg, 2013; Papp & Witt, 2010). Moreover, the positive effect of DC has been examined and confirmed in studies involving couples in which one partner was suffering from a medical condition such as cancer (Traa et al., 2015), diabetes (e.g., Schokker et al., 2010), Alzheimer (Kramer, 1993) and chronic-obstructive pulmonary disease (Snippe et al., 2012).

Despite the growing recognition of the need to consider stress and coping in a dyadic framework (Berg & Upchurch, 2007; Cutrona & Gardner, 2006; Story & Bradbury, 2004), questions remain concerning the interplay between marital coping interactions and parental functioning. DC may be included in those specific interactions within the interparental relationship which might be crucial for successful coparenting and child adjustment (Bodenmann 1997, 2005). Associations between marital interactions and children's adjustment are well established. Belsky (1984) proposed a process model arguing that parenting is determined by three general sources of influence: the parent's *personality*, or psychological resources; the child's *individual characteristics*; *contextual sources of stress and support*, including marital relations, occupational experience and the social network. Each of these domains directly influences childrearing quality, and through parenting, child development. Marital relationship quality is of great importance, understood as the ability of the partners to support each other during the most stressful periods of family life. Marital distress and negativity that may directly affect child's development (Murphy et al., 2017), can also have an indirect effect children's externalizing and internalizing behaviors, as stress due to marital discord may *spill over* into parents' interactions with their children (Grych & Fincham, 1990; Katz & Gottman, 1996; Stroud et al., 2011). The management of daily stressors requires consistent efforts by the couple and the way they experience support from the partner affects the quality of their relationship and their parenting functions.

Family stress: Associations between Dyadic Coping and Parenting

Studies supporting the Family Stress Model (Conger & Donnellan, 2007; Conger et al.,1994) posit that families' stressors influence children and adolescents' development indirectly through the parental emotional distress derived from them. The distress can affect parenting practices, both directly and indirectly through effects on marital relationships, and these negative parenting practices ultimately impact youth's developmental outcomes (Conger et al., 2002; Ponnet, 2014). Marital relationship represents the primary source of support for parents (Belsky, 1984) and acceptance or rejection by an intimate partner has been found to have a major influence on adults' personality and psychological adjustment (Rohner, 2016). One of the ways through which parents' ability to support each other spills over into the parent–child relationship, may be by increasing parental engagement (Feinberg 2003; Morrill et al. 2010). A positive interparental relationship in which parents are able to solve problems in a constructive way, may directly enhance children's emotional security and, indirectly, favour positive parenting and parent–child relations (Cummings & Davies, 2010).

Very few studies examined the specific role of DC on parenting. For instance, Zemp and colleagues (2014) examined child outcomes as a function of the proportion of their parents' reports of positive to negative interactions, including DC, and found that the positivity-to-negativity ratio was strongly associated with children's well- being. A study conducted by Gabriel and Bodenmann (2006) suggested that partners with high DC skills are a source of support for each other in stressful situations and were found to be also better able to cooperate in child-rearing after comparing parents involved in different parental intervention programs (Bodenmann, Cina, Ledermann, & Sanders, 2008). Zemp and coll. (2016) investigated for the first time the direct association between DC and child adjustment through three different samples and procedures. All three studies found significant direct association between parental DC and child adjustment - expressed as internalization, externalization and prosocial behaviors- except for the third observational study, where no significant associations to internalizing and prosocial behaviors were found. Nevertheless, the study hypothesized and tested for the first time the relevance of interparental DC processes for the child

well-being. Studies focusing on the effects of DC on children's medical and health conditions found that DC was associated with increased relationship satisfaction in parent raising Autistic children (Gouin et al., 2016) and parents' DC has been linked to better health outcomes in children with type 1 diabetes in German families (Körner et al., 2013). Finally, to our knowledge, only one study examined the longitudinal associations between DC and parenting. Zemp et al. 2017 examined whether change in couples' dyadic coping predicted the trajectory of coparenting conflict over 1 year. Findings showed how higher reports of DC predicted a decrease in one's own reports of coparental conflict over 12 months, but only for mothers, suggesting the relevance of DC for the coparental alliance and potential differences between mothers and fathers.

The present study aimed to extend this preliminary evidence by testing the spillover hypothesis between DC and parenting, by focusing directly on the role of maternal and paternal positive DC when facing family stressors, in establishing a positive relationship with their adolescents.

DC across Cultures

Scholars and theorists of DC highlight the relevance of Culture in examining and interpreting the ways partners jointly cope with stress around the world. Although the original Systemic Transactional Model (STM, Bodenmann 1997) did not explicitly include culturally-relevant aspects in the model, in the last decade these initial models were expanded to incorporate developmental and cultural aspects resulting, for instance, in the Developmental Contextual Coping Model (DCCM; Berg & Upchurch, 2007). Berg and Upchurch (2007) proposed a developmental model of DC that included also the sociocultural context, such as culture and gender. While testing the model, they found that sociocultural factors affect the norms and expectations regarding, for instance, the level of interdependence among spouses, showing as collectivistic cultures and women are more likely to represent the Self in relation to others. To be noted, the DCCM was developed and tested mostly related to the effects of DC on illness and medical conditions. Falconier, Randall and Bodenmann

(2016) identified three culturally-related aspects that has been considered as the most relevant for the research on DC.

The first aspect involves the comparison between *Individualism* and *Collectivism* that influences the ways close relationships are interpreted. Individualistic societies encourage to form relationships and to choose partners that may help to promote individual goals, initiative and achievement, while suggests terminating those relationships that are unsatisfactory.

The second aspect, *Communication,* includes the distinction between low-context and high-context communication (Hall, 1976) which have been used to identify different communication style across cultures. Low-context communication involves explicit verbal codes with less dependence on contextual cues such as gestures or relational characteristics: this kind of communication has been found to be exhibited more by Western European individualistic cultures (e.g. Shibusawa, 2005). In contrast, high-context communication relies more on the contextual and relational aspects of communication, reducing the exchange and reliance of verbal code in the interpretation of messages. Eastern collectivistic cultures have been found more likely to implement high-context style of communication (Feng & Burleson, 2006).

Finally, authors highlight the meaning that *Couple's Relationships* might assume across different cultures, with respect to their formation, functioning, gender role expectations and relationships with extended family members. Differences have been found among Western European, Asian and Latino families regarding the role and significance of marriage, partners' gender role and boundaries differentiations from the family of origin. For instance, younger South Koreans are more likely to be independent from their parents by living only with their romantic partner after marriage (Kim et al., 2014); the value of Familism in Latinx' culture was fund to be associated to felt closeness toward romantic partners, an element of relationship quality that reflects partner interdependence (Aron, Mashek, & Aron, 2004; Campos et al., 2016); dowry, or the payment of a bride price, is very common in Africa and was found to have detrimental effects also for the new couple which is left in economic strain and difficulties already at the very beginning of their relationship (Wanjohi &

Wanjohi, 2005). Moreover, partners from different cultures are likely to have divergent life experiences that produce differences in relationship standards - defined as: " …personal beliefs about the characteristics an intimate relationship should have" (Epstein & Baucom, 2002, p. 72). This suggests that different standards may be appropriate for different cultural contexts, and we might expect discrepancy in the correlations between specific standards and satisfaction in culturally distinctive countries.

Each of the three aspects identified by Falconier and colleagues helped researchers in interpreting the preliminary results on DC across cultures. Thanks to the developments and advances in its theorization (Bodennmann, 2008), STM is currently the most used theoretical framework in those studies testing DC in different cultural contexts. However, only a handful of studies have actually looked at the role culture in the couples' coping process by examining different cultural groups in the same study.

For instance, Kayser et al. (2014) conducted a study on American, Chinese, and Indian couples coping with breast cancer and found that compared to American couples, Asian couples were more inclined to accept the illness that was viewed as beyond their control, rather than trying to do something to change it. Moreover, the authors found that Asian couples had more gender differentiated roles and involved more often their families in their coping efforts. Another study, conducted on Chinese, Swiss and American couples, showed that Chinese couples reported significantly less delegated DC, compared to Swiss and American couples (Xu et al., 2016). These findings were interpreted in line with the *Individualism* vs *Collectivism* model, showing that Asian couples cope in ways congruent with their collectivistic orientation whereas American couples cope in ways consistent with their individualistic orientation (e.g. Bejanyan et al., 2015).

Probably the most relevant cross-cultural study in the DC literature was the one conducted by Hilpert and colleagues (2016) that examined the association between DC and relationship satisfaction in couples from 35 different countries. Authors found that supportive and common DC predicted relationship satisfaction across all nations. Differences were found between African and Asian

countries (i.e. Hong Kong and South Korea) with respect to supportive and common DC: African couples use these two strategies more frequently than Asian couples. On the contrary, no differences were found between Eastern and Western cultures in the association between DC and relationship satisfaction. For example, the smallest effect of DC on relationship satisfaction were found for Nigeria, India, Ghana, Iran, Portugal and Kenya, while Bulgaria, Romania, Hong Kong, Slovakia, and Canada where among the countries with larger effects, indicating significant variability within a region whose countries were expected to be culturally related. Furthermore, the same amount of coping behavior affected couples across nations differently: for couples from Bulgaria, Canada, and Greece reported a frequent use of DC had a large impact on relationship satisfaction, whereas for couples in Ghana, Kenya, and Nigeria - who were also high in DC behaviors - DC had a small effect on the relationship.

Overall, these findings suggested the relevance of comparing different countries in the same study in order to able to interpret the results in a more precise way. However, the currently available studies focused on the link between DC and relationship satisfaction, while to our knowledge no study has tested the cross-cultural associations between DC and parental dimension. The present study aims to fill this gap by testing the direct longitudinal associations between mothers' and fathers' DC and parenting model in 8 different countries.

Overall aim of the Study

The present study aimed to extend research on DC and its role in broader family functioning by investigating its associations with parenting dimensions (i.e. Parent-Adolescent Relationship Quality, P-ARQ) during adolescence in the presence of family stressors. Specifically, we considered stressful *Life Events* experienced at a family-level that have been found to have a great impact on both marital relationship quality and parental practices (e.g. Belsky, 1984; Conger et al., 1994). We also considered *Household Chaos* – which includes lack of routines, noise, crowding, and clutter in the home (Evans & Wachs, 2010) - as a within family stressor that characterize the environment in

which all family members are embedded and experience their interactions. *Household chaos* has been found to be a distal risk factors that may influence youth adjustment via higher levels of negative parenting (e.g. Deater-Deckard et al. 2019). Little is known about the specific link between marital DC and P-ARQ and further studies are needed to investigate this association (Zemp et al., 2016).

Our contribution focused on the mechanism through which supportive or unsupportive partners' coping interactions during family stressful situation influence the way they engage, as parents, in the relationship with their children. We expected that parent's perceptions of positive DC when facing family stress (i.e. *Life Events* and *Family Chaos)* was associated with adolescents' perceived positive relationship quality with their parents (Conceptual Model in *Figure 1*). We also tested these associations longitudinally and cross-culturally by using three waves of data with samples of families from eight countries (Italy, Kenya, Philippines, Thailand, Sweden, USA, Colombia and Jordan) to explore whether culture had a moderating role on the spillover effect of DC on parenting.

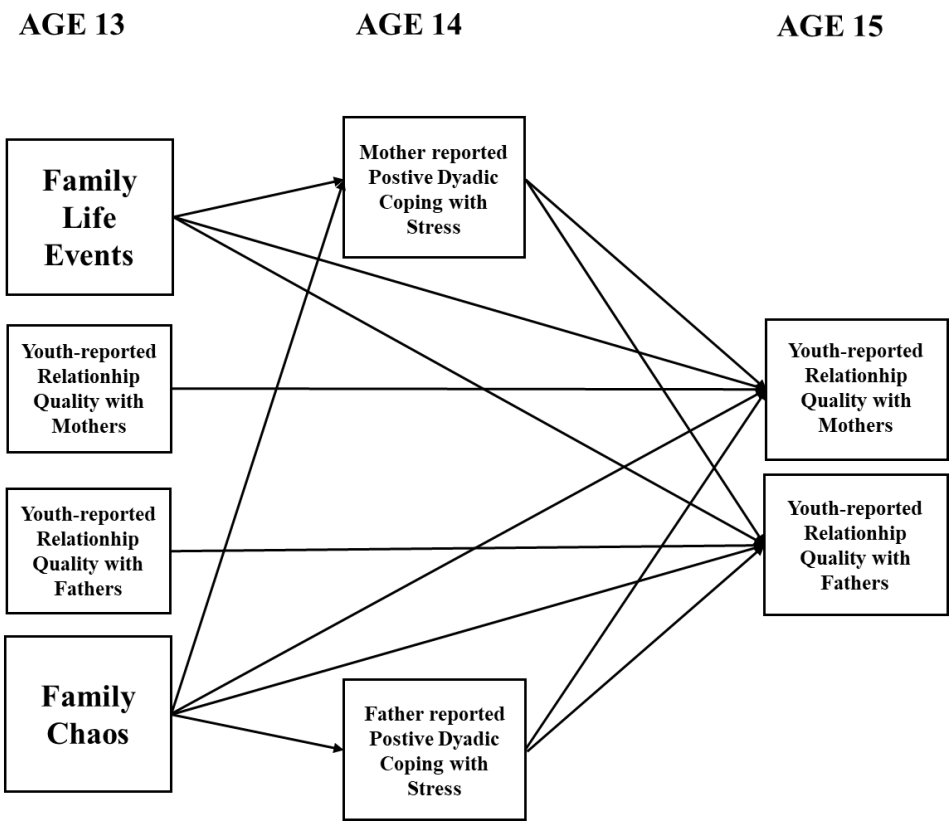

Figure 1. Conceptual Model of Family Stressors, Marital Dyadic Coping and Parent-Adolescent Relationship Quality.

Specific aims and hypotheses

1) The first aim was to test the longitudinal associations between maternal and paternal positive DC and adolescent reported P-ARQ with their mothers and fathers one year later. We collected data across three time points, allowing for the examination of stability across time, and within-time correlations. We also sought children's perceptions of their P-ARQ with mothers and fathers, and both mothers and fathers positive DC effects were separately determined and compared. According to Family Stress models and STM, we hypothesized family stressors to be negatively associated with both maternal and paternal DC. According to the spillover hypothesis (Davies & Cummings, 1994), we also expected a positive association between positive DC and youth reported P-ARQ.
2) The second aim was to test whether these associations were generalizable across cultures, by comparing the model simultaneously in 8 different countries. Given the lack of previous studies investigating these specific associations, we do not generate specific hypotheses on the moderating role of culture on the link between positive DC and P-ARQ. Based on the few cross-cultural studies on DC, the general positive effect of maternal and paternal coping behaviors on parenting would be universal (i.e. largely similar) across countries (Hilpert et al., 2016). However, we may expect that the differences in the way stressors, positive DC and P-ARQ are interpreted in the 8 countries, may reflect differences in the paths tested in the present study (Falconier et al., 2016; Rohner et al., 2016)
3) The third aim of the study was to test for the moderating role of adolescents' gender in the associations by testing a multi-group model for boys and girls. Literature on gender differences in DC has been understudied and produced mixed findings. For instance, Zemp and coll. (2016), testing the role of child-gender in the link between DC and child-adjustment found a significant interaction only in one of the three samples included in their study. In the present study, it is posited that both gender of parent and adolescent might affect the link

between positive DC and youth perceived P-ARQ with their parents. In a dyadic framework, it is also hypothesized that the effect of positive DC by one parent might depend on whether the other parent also engages in the same coping behaviors (Bodenmann, 2005; 2010).

Method

Participants

As in Study 1 and 2, participants were recruited from the longitudinal study entitled Parenting Across Cultures (e.g., Lansford et al., 2014). Participants included 975 families from Italy, Kenya, Thailand, Philippines, Sweden, Unites States of America, Colombia and Jordan with data collected annually at years 5 (T1), 6 (T2) and 7 (T3) [adolescents' age: 13.33 years (SD = .79; range = 11–16) at Year 5, 14.65 years (SD = .90; range = 12–17) at Year 6, and 15.61 years (SD = .96; range = 13–19) at year 7].

Descriptive statistics by study site are reported in the Supplementary Tables. The gender distributions, average age and sample sizes by location at T1 were: Rome and Naples, Italy (49,.3% female, age=13.5, *n* = 189); Kisumu, Kenya (60% female, age=13.04, *n* = 93); Manila, Philippines (49.2% female, age=12.5, *n* = 91); Chiang Mai, Thailand (49.2% female, age=13.6, *n* = 89); Trollhättan and Vänersborg, Sweden (49.6% female, age=12.4, *n* = 72); Durham, North Carolina, United States (48.6% female, age=13,95, *n* = 255); Medellín, Colombia (55,6% female, age=13.4, *n* = 84); Zarqa, Jordan (47.4% female, age=12,7, *n* = 102).

Mothers reported that 72.9% were married, 12.8% were unmarried or cohabitating, .9 % were remarried and 11.5% were separated or divorced. The non-resident parent (if the couple was separated or divorced) also could participate. Mothers averaged 42.14 years (SD = 6.84) and fathers 45.07 years of age (SD = 6.81) at T1. Mothers completed 12.64 years (SD = 4.41) and fathers completed 12.78 years of education (SD = 4.34) on average. Family income was reported using 10 income ranges on an ordinal scale rated from 1 to 10; 36.2 % of families reported income in the lowest two categories, and 19% reported income in the highest two income categories.

Procedure

See the “Procedure” section in Chapter II, p.36

Measures

Family Chaos. At Time 1, mothers and fathers completed an abbreviated version of the Chaos, Hubbub, and Order scale (Matheny, Wachs, Ludwig, & Phillips, 1995) which measure perceptions of noise, lack of routines, clutter, and crowding in the household on a 5-point Likert-type scale. For each reporter, a scale was created by averaging the six items. A *Family Chaos* summary scale was created by averaging the standardized summary scales across mothers and fathers. The reliability coefficients by site (Supplementary Tables) were low, but typical for this abbreviated scale (Lauharatanahirun et al., 2018) and in line with previously published studies (e.g. Deater-Deckard et al. 2019).

Family Life Events. At Time 1, mothers and fathers completed the Life Events measure (Dodge, Pettit, & Bates, 1994), consisting in a series of 19 major life events (e.g. move, birth of a child, divorce, death of a close family member) and were asked to report whether that event did occurred in the last year, indicating either *Yes* or *No*. A *Family Life Events* summary scale was created by summing mothers and fathers’ reports.

Dyadic coping. At Time 2 self-reports of a short (11 item) version of Dyadic Coping Inventory (DCI-K; Bodenmann, 2008) was used to measure how they cope with common daily life stressors with their partner. Response options for each item ranged from *very rarely* (1) to *very often* (5). In the present study, we calculated positive Dyadic Coping (DC) computed by averaging scores from those items describing positive dyadic coping responses (e.g. “When I am stressed, my partner listens to me and gives me the opportunity to communicate what really bothers me”) and reverse-coding those items addressing negative dyadic responses (e.g. “When I am stressed, my partner does not take my stress seriously”*).* The psychometric properties of the Italian version of DCI have been examined in a validation study comparing three language groups (Lederman et al., 2010) and used in

a cross-cultural study involving 35 nations (Hillpert et al., 2016). The internal consistencies were good in all countries (Supplementary Tables).

Parent-Adolescent Relationship Quality (P-ARQ). At Time 1 and Time 3, the *Parental Acceptance-Rejection/Control Questionnaire-Short Form* (PARQ/Control-SF; Rohner et al., 2005) was used to measure youth-report of the frequency of mother and father parenting behaviors. Youth rated 29 items as *almost never* (1) to *every day* (4). In this study, we did not use items about behavioral control and hostility. Based on previous works, we used the total acceptance-rejection scale, by deriving a subscale of relationship quality which is computed as the mean of the items for warmth-affection (e.g. "I make my child feel wanted and needed.") and the reversed-coded item of neglect-indifference (e.g. "I pay no attention to my child when (s)he asks for help.") (Pastorelli et al., 2016). This construct aims to catch the adolescents' perception of experiencing a good relationship quality with their mothers and fathers characterized by high level of affection and lack of neglect-indifference. The measure has been proved to be invariant across parents' gender in this sample by previous studies (e.g. Putnick et al., 2015) and showed good internal consistency for all countries (Supplementary Tables).

Control variables. We controlled for adolescents' gender - coded 1 for males and 2 for females-, parental Marital Status and Number of Children in the household. We also controlled for an index of family Socio-Economic Status (SES), created by averaging parental Education and family Income ($r > .50$ for all countries).

Analytic Plan

Preliminary descriptive statistics and Pearson's correlations were examined. Then a series of path analysis models were then employed to test the study hypotheses. Models were implemented in *Mplus* software (Version 7; Muthén & Muthén, 1998–2015) using full information maximum likelihood and robust estimator (MLR) to account for any nonnormality of the study variables.

First, a priori developmental model was implemented to examine the longitudinal associations across countries. Maternal and paternal positive Dyadic Coping (DC) (T2) was predicted by Family Chaos and Family Events at T1. Youth reported outcomes (P-ARQ; T3) were predicted by both Family Chaos and Family Events (T1), parental DC (T2) and covariates (T1). The residual variances were allowed to covary for P-ARQ at T1 and T3, maternal and paternal T2 and Family Chaos and Family Events at T1.

Then we tested a covariate-controlled model to test whether associations between the variables were influenced by control variables (i.e. family SES, marital status and Number of Children in the household).

Finally, we implemented multi-group path analysis models to test whether there were significant differences in the structural parameters across the eight countries and across adolescents' gender. Testing for cross-group invariance involved comparing two nested models. A first *unconstrained* model in which no constraints were specified for the eight countries tested simultaneously; a second model (*full-constrained*) in which all paths were constrained to be invariant across groups.

Comparison of nested models employed chi-square difference test for adjusted for MLR estimator (robust *Satorra-Bentler* χ^2). If imposing constraints decreased model fit significantly - suggesting that one or more parameters are not equivalent across groups - using modification indices, site specific paths were iteratively freed until optimal model fit was achieved. Model fit was evaluated using standard criteria: a model was considered to have good fit if the χ^2 test was nonsignificant ($p \geq .05$), the CFI and TLI $\geq .95$, the RMSEA $\leq .06$, and the SRMR $\leq .08$ (Hu & Bentler, 1999).

Attrition

Attrition across these three annual assessments was on average 4% and varied by site, based on analysis of samples from Time 1 to Time 3 (i.e. from 85% retention in Thailand to 99% retention in Jordan). The attrition rate was principally due to two main reasons: unavailability of the subjects

to participate in the later data collections in the ongoing longitudinal study or their unwillingness to participate in that specific wave. We compared the retained and the missing families based on the variables and covariates in the current analysis that were available in Year 1 (*Figure 1*) and very few significant differences emerged. Specifically, one-way ANOVAs showed no significant differences in Thailand and Colombia. Missing families had lower SES in Italy ($F = 5.532$; $p = .020$; respectively, $M_{missing} = 7.26$; $M_{non\text{-}missing} = 9.17$), Kenya ($F = 8.219$; $p = .005$; respectively, $M_{missing} = 6.72$; $M_{non\text{-}missing} = 8.38$), USA ($F = 7.864$; $p = .005$; respectively, $M_{missing} = 9.82$; $M_{non\text{-}missing} = 11.28$). Furthermore, missing families has less children in the household in Sweden ($F = 5.490$; $p = .022$; respectively, $M_{missing} = 1.58$; $M_{non\text{-}missing} = 2.18$) and Jordan ($F = 7.170$; $p = .009$; respectively, $M_{missing} = .50$; $M_{non\text{-}missing} = 3.19$). No significant differences emerged on the other study variables.

Results

Table 1 displays descriptive statistics across countries (descriptives divided by country are included in the Supplementary Tables). The average level of positive DC was medium to high across countries and mothers and fathers, but there was a considerable amount of variability within and across countries. Adolescents' reported P-ARQ varied widely, however mean levels on average a medium to high level of P-ARQ across countries. Table 1 displays also the correlation matrix of all variables across countries (correlation matrices divided by country are included in the supplemental tables). Within waves, there were medium to strong correlations among examined indicators of DC for fathers and mothers and adolescents' reported P-ARQ for both parents. Maternal and Paternal positive DC was positively associated to youth reported P-ARQ and *Family Chaos* was negatively associated to both parental DC and youth reported P-ARQ.

Table 1. Descriptives. Reliability values and Correlations among the examined variables across eight countries

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	5.40	4.49	.81	(2)	.01	1							
Family Chaos	2.10	.56	.63	(3)	.01	.13**	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.56	.43	.84	(4)	.01	-.13**	-.22**	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.47	.48	.86	(5)	-.02	-.04	-.19**	.65**	1				
Mother's reported Positive Dyadic Coping Time 2	3.78	.78	.88	(6)	-.04	-.01	-.19**	.17**	.21**	1			
Fathers' reported Positive Dyadic Coping Time 2	3.85	.67	.84	(7)	.03	.04	-.19**	.20**	.20**	.43**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.47	.47	.86	(8)	-.02	-.01	-.16**	.48**	.38**	.16**	.24**	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.33	.59	.91	(9)	-.05	-.00	-.14**	.32**	.50**	.23**	.24**	.54**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

According to the first aim, we fitted a priori developmental model with a stability coefficient from T1 to T3 for youth-reported P-ARQ, paths from T1 *Life Events* and *Family Chaos* to maternal and paternal PDC at T2 and youth-reported P-ARQ at T2, and covariances among all measures within time (Figure 2). The developmental model provided a good fit to the data, [χ^2 (6) = 36.48, p < .001, CFI = .96, RMSEA = .06, 90%CI = .04–.09, SRMR = .05]. As shown in *Figure 2*, youth-reported P-ARQ was moderately stable from T1 to T3. Controlling for concurrent relations at each wave and for P-ARQ stability, higher *Family Chaos* was associated with lower positive DC both for mothers and fathers. Higher positive DC was also associated with higher adolescent-father relationship quality as reported by youth. Interestingly, fathers' DC was also positively associated with youth-reported mother-adolescents' P-ARQ.

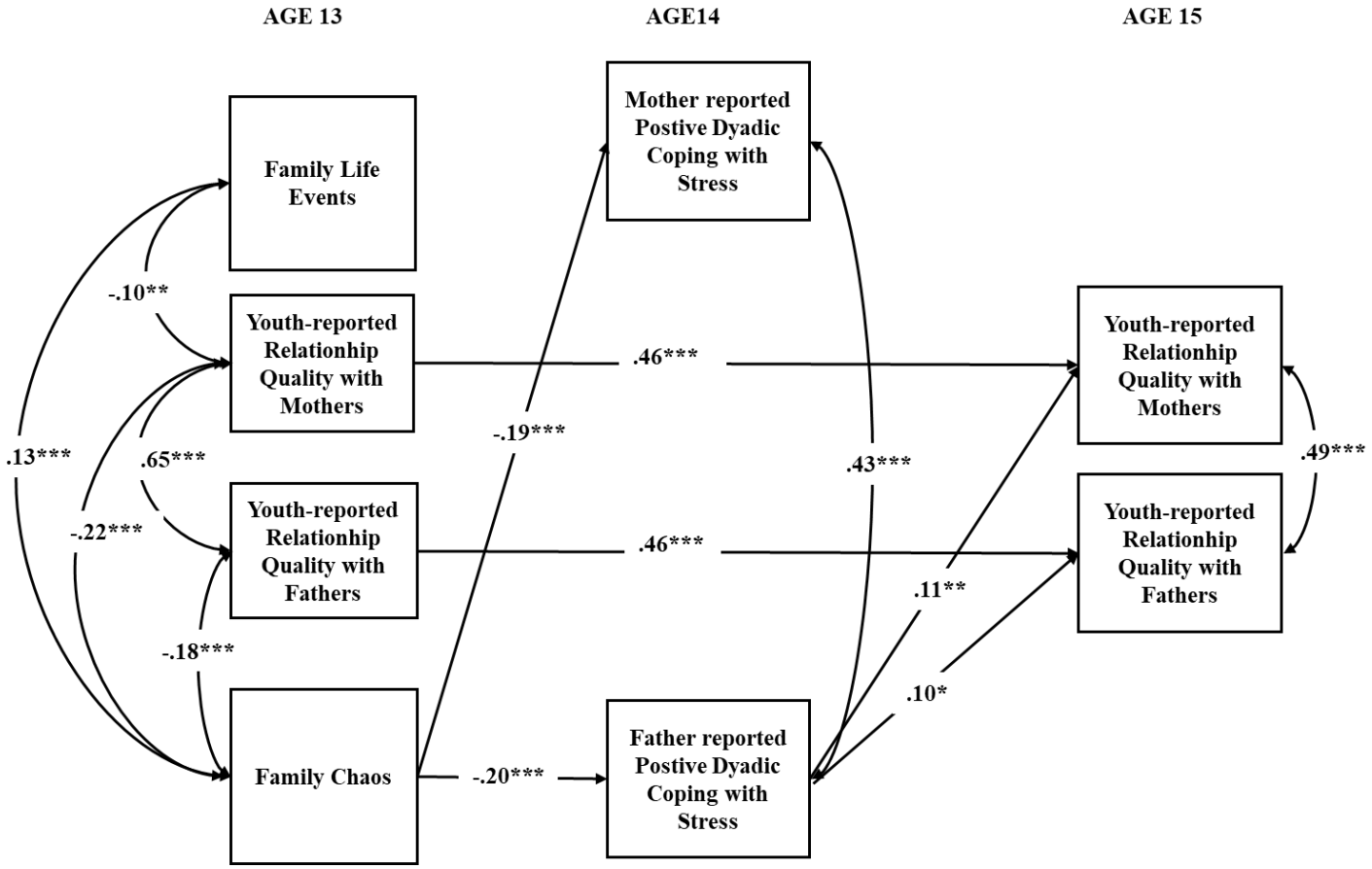

Figure 2. Model of Family Stressors, Marital Dyadic Coping and Parent-Adolescent Relationship Quality across 8 countries. Note. Standardized coefficients are presented. Only significant paths are depicted. *p < .05; **p < .01; ***p < .001.

Covariate-controlled model of Family Stressors, Dyadic Coping and Parent-Adolescent Relationship Quality

To determine whether the relations in Figure 2 were driven by T1 *Family SES*, *Number of Children in the Household* and *Parental Marital Status*, we added these variables as covariates to the model with direct paths to all variables in the model and covariance between them. The covariate-controlled model fit the data well [χ^2 (14) = 57.00, p < .001, CFI = .95, RMSEA = .05, 90%CI = .04–.07, SRMR = .04]. All structural paths depicted in Figure 2 were still significant at the .05 level when controlling for Family SES, Number of Children in the Household and Parental Marital Status. The path from T2 maternal PDC to T3 youth-reported P-ARQ with fathers shifted from non-significant in the full model (b = .066, SE = .035, p = .057), to significant in the covariate-controlled model (b = .075, SE = .036, p = .035).

Multiple-group model Family Stressors, Dyadic Coping and Parent-Adolescent Relationship Quality by country

Next, we examined whether the final model in Figure 2 fit for families across eight countries. A model with no constraints on which structural paths were allowed to vary across countries - which provided good fit, [χ^2 (41) = 91.94, p < .001, CFI = .94, RMSEA = .08, 90%CI = .05–.10, SRMR = .07] - was compared to a model with equality constraints across countries on the structural paths (within-wave covariances were allowed to vary across countries). The difference in model fit, [$\Delta\chi^2$ (98) = 128.63, p < .05, ΔCFI = .036], indicated that all structural paths were not invariant across eight countries. To achieve an acceptable difference in model fit, 6 paths were incrementally released. Change in model fit for the revised model was [$\Delta\chi^2$ (92) = 100.10, p= .26, ΔCFI = .008].

To put these modifications in context, there were 112 paths in the multiple-group model that could have been released, but only 6 (6.2%) had to be released to achieve a nonsignificant difference in model fit. These six released paths included: (a) the relation between fathers' positive DC and T3 youth reported P-ARQ with mothers was significant only in Jordan, (b) the negative relation between Family Life Events and youth reported P-ARQ with mothers in Colombia; (c) the relation between Family Chaos and youth reported P-ARQ with mothers was not significant only in Sweden; (d) the negative relation between family *Life Events* and youth reported P-ARQ with fathers was significant only in Thailand; (e) the relation between *Family Chaos* and youth reported relationship quality with fathers was not significant in Thailand; (f) the stability path from T1 to T3 youth reported P-ARQ with mothers was larger in the USA. Wald tests (*W*) revealed that the freed path coefficients were statistically different ($p < .05$) for the identified country compared to all other countries.

Multiple-group model Family Stressors, Dyadic Coping and Parent-Adolescent Relationship Quality by adolescents' gender

Finally, we examined whether the model in Figure 2 fitted for boys and girls. The unconstrained model [χ^2 (12) = 44.605, p < .001, CFI = .95, RMSEA = .07, 90%CI = .05–.09, SRMR = .06] - was compared to a model with equality constraints between boys and girls on all structural

paths. The difference in model fit, [$\Delta\chi^2$ (14) = 16.577, p= .27, ΔCFI =.003], indicated that constraining the structural paths to be equal for boys and girls did not worsen the model fit. Therefore, we concluded that Family Stressors and positive DC have similar effects on P-ARQ as perceived by boys and girls.

Discussion

The present study aimed to test the associations of maternal and paternal positive DC with parent-adolescents' relationship quality. We based our hypothesis and tests on the theoretical systemic and developmental models highlighting the relevance that marital processes have for parenting practices and, in turn, child-well-being (e.g. Belsky, 1984; McHale,1995; Minuchin, 1988). The conceptualization of coping as a relational process allows researchers to examine whether the way mothers and fathers deal with family stressor as a couple may affect their role as parents and consequently their children's adjustment. We considered the perceptions that mothers' and fathers' have on the support they receive from their partners when coping with stressful situations and the quality of their parent-child relationships as perceived by their adolescents.

Associations between Maternal and Paternal DC with youth-reported P-ARQ

Overall, findings confirmed our hypotheses and showed that parental positive DC had a significant positive longitudinal effect on P-ARQ. Notably, findings showed that this association was significant especially for fathers. Our findings in fathers are in line with previous research showing that a supportive interparental relationship is more relevant for fathers compared to mothers. The *Fathering Vulnerability Hypothesis* (Cummings et al., 2004) states that spillover impacts fathering more than mothering because of the greater salience of the parental role for mothers (e.g. being considered as the primary caregiver, higher engagement, more time spent with children) and because mothers show a greater ability to compartmentalize their roles as spouse and parent (Cummings et

al., 2010; Davies et al., 2009). Consistent with this hypothesis, we found that mothers' positive DC did not spill over directly to the mother–adolescent relationship, whereas fathers' perception of positive support by their partner did. Moreover, we found that fathers' positive DC was associated not only with P-ARQ with fathers, but also with adolescents' perceived P-ARQ with their mothers. This result is conceptually and theoretically grounded for two main reasons.

Firstly, it confirms the dyadic and relational nature of the coping which is also based on the extent to which one partner perceives the other as providing DC (Hillpert, 2016; Iafrate et al., 2012) and this may lead to differences in parental strategies. Reciprocal perceptions of mothers and fathers may represent a substantial source of stress, as ones who evaluate their partners poorly or disapprove of their approach to discipline may be more rejecting of their children because of a perceived lack of support from the other. One partner could then compensate for the other's lack of parental warmth, by acting warmer towards their children (Cummings & Davies, 2010; Murphy et al., 2017; Yunying Le et al., 2016). Alternatively, mothers and fathers may converge in their parenting styles over time, both eliciting more rejecting or warm parental practices (Christopher et al. 2015; Stroud et al. 2011). The differences in the effects of maternal and paternal DC on P-ARQ found in the present study are somewhat in contrast with the literature on DC showing women to be likely to report higher DC than men (Falconier et al., 2015). However, tests for gender differences in DC have reached mixed conclusions (Falconier et al., 2019) and given the dearth of previous studies linking specifically DC to parental dimensions, we were not able to compare our findings to other works. To note, Zemp and coll. (2017) linking DC to coparental conflict, found that the impact of change in DC on coparenting conflict was more salient in mothers compared to fathers. Authors explained this finding showing that this was due to the beneficial effect of training programs -in which study couples were included - found for mothers and not for fathers. Altogether, our study adds up on this literature suggesting that, when related to parental dimensions, gender differences in DC may respond to different mechanisms for fathers and mothers.

Secondly, our results suggest how the influence of parental positive DC is relevant on one's own parenting, but also for the other parent's. According to the Social Learning Theory (Bandura, 1963; 1977), one pivotal assumption of the family socialization process is based on children' ability to observe interactions between their parents as a model (i.e. *modelling*) and then represent them during their own social interactions. In the present study, the *spill-over effect* that occurs between marital relationship and parenting is also expressed in terms of influences that fathers exerted on adolescents' perceptions of having a good relationship quality not only with them, but also with their mothers'. Fathers who perceived high support and feel confident to cope with stressors with their wives might help their children to develop a good relationship quality with them both directly- by addressing mothers in a positive and affectionate ways in the presence of their sons and daughters – and indirectly, through positive interactions that adolescents' can observe (Cummings & Davies, 2010; Feinberg & Kan, 2008; McHale et al., 2015; Stroud et al, 2015; Yunying Le et al., 2016). We were specifically interested in assessing the perception of adolescents about having a positive relationship with their mothers and fathers. As recognized by most developmental theorists (e.g., Sameroff, 2010) to focus on the meanings that children assign to parental behaviors is a fundamental aspect that allows researchers to make progress in understanding how different parental behaviors affect the parent– child relationship (Marshall, 2001; Rosenberg & McCullough, 1981; Schenck et al., 2009).

Associations between Family Stressors, parental DC and youth-reported P-ARQ

Our findings showed also that *Family Chaos* was the most effective stressor and it was negatively associated with maternal and paternal positive DC, while *Family Life Events* were not significantly associated with either parental positive DC or youth-reported P-ARQ. This might be due to the nature of the of both DC and stressors we considered. Specifically, DC was developed in the STM to examine coping processes in couples dealing with daily hassles or minor chronic stressors, characterized by low intensity and chronic duration that are found to be the most detrimental for

relationship satisfaction (Randall & Bodenmann, 2009). Then, *Family Chaos* as causing stress within the family environment might be more relevant and challenging for parents in their daily lives compared to *Life Events* that includes major events that are more external from the family. As pointed out by some authors (e.g. Falconier et al., 2019), measure of DC (e.g. DCI) assess dyadic coping with stress in general and not in relation to a specific stressor. However, even if the self-report measure is not specific to the stressful situation, asking partners about their overall impression on DC may be more sensible to the different nature of the context in which stressors are originated (i.e. internal versus external family stressors). Nevertheless, the significant associations between family stressors and DC found in this study are consistent with the Family Stress Theory (Minuchin, 1988) that posit the fundamental role of interparental support and positive P-ARQ in coping with family stressors which require an active effort from the family to elaborate and activate its own resources (Scabini, 1995)

Cross-cultural comparison: the moderating role of culture

Our second aim was to examine the hypothesized associations in eight different countries in order to test the moderating role of culture on DC-related processes. Overall, our findings suggest that positive DC had a significant longitudinal effect on youth reported P-ARQ across the eight countries. Specifically, after controlling for stability in P-ARQ from T1 to T3, as well as relations among all variables within each wave, only changes in paternal DC predicted a higher P-ARQ with their fathers as perceived by the adolescents. Moreover, this pattern of relations concerning positive DC was generalizable across the eight countries. However, a few of the effects were site-specific and the major source of variability was found for the direct effects of family stressors and youth-reported P-ARQ.

Overall, only six paths had to be released for the change in model fit to be nonsignificant. The model held with no modifications for three countries, and only modifications in five other countries. Model modifications indicated that *Family Life Events* affected negatively father-adolescents P-ARQ

only in Thailand, while this association was not significant in other countries. Similarly, *Family Life Events* had a negative association with mother-adolescents P-ARQ only in Colombia, while for other countries this association was not significant or – contrary to our expectations – positive. Regarding the other family stressor, *Family Chaos*, its effect on parent-adolescent P-ARQ was found to be not significant in Thailand (P-ARQ with fathers) and in Sweden (P-ARQ with mothers). The only difference in the effects of positive DC on parenting was found for the cross-effect of paternal DC and the perceived P-ARQ with their mothers, that we found in the general developmental model depicted in Figure 1. We found this path to be strongly significant only in Jordan, and marginally significant in all the other countries. We do not have a specific hypothesis as to why this association is more significant in Jordan. In the present study, mothers and fathers in Jordan showed a high agreement on positive DC (r=.70), showing how both feel supported and appreciated by the other. Such high agreement might be transposed to positive interactions between the partners and could be reflected in the perception that the children have of their mothers and fathers. The fathers' influence on adolescents' perceived P-ARQ with their mothers may be explained in the light of the differences in perceived gender roles in Jordanian for mother and fathers. Jordanian society has undergone notable changes with regard to family structure and the role of mothers, fathers' attitudes and beliefs concerning involvement in child-rearing (Al-Hassan & Takash, 2011; Fathi Mahmoud Ihmeideh, 2014). However, Jordan still presents several areas of the country holding on to conservative rules and patriarchal traditions (Abuidhail, 2014; Ahmad et al., 2018). This might be reflected adolescents' perceptions of maternal and paternal roles within the family. Mothers and fathers in the Jordanian population have different roles and responsibilities: mothers are more responsible for the children care and household responsibilities, while fathers are bread-winners and family providers (Dwairy et al., 2010). However, recent findings on attributions and attitudes in Jordanian parents, showed that mothers and fathers reported similar levels of attributions regarding uncontrollable success, adult-controlled failure, and child-controlled failure in the same family, reporting greater progressive attitudes than authoritarian attitudes (Al-Hassan & Takash, 2011). Moreover, in the last few years,

policy programs in Jordan has been promoting paternal engagement in a broader range of educational settings (Fathi Mahmoud Ihmeideh, 2014). Our results are in line with the acknowledgement of father's positive role on family processes, suggesting the potential role that DC has for fathers in promoting relationships perceived as positive and supportive by both their partners and their adolescents.

Overall, attention to meaning when studying parenting in diverse cultural and family structure contexts is valuable given the different meanings that the same behaviors could carry across multiple family contexts and as a result have context-specific effects (e.g. Bornstein et al., 2011; Putnick et al., 2015). Future studies should include measures that assess gender role attitudes, given the importance that these have in the interpretation of cross-cultural findings.

The moderating role of Adolescent's gender

Finally, given that previous findings reported that gender moderate the effects of parental interactions on children (Cummings & Davies, 2010), we tested a multi-group model to examine the gender's moderating role. Findings showed that the model and the effects of positive DC on parenting was equivalent for boys and girls. In DC literature, the role of adolescent gender was rarely tested and prior empirical evidence does not provide strong support for gender differences. Zemp and coll. (2016), linking DC to child's adjustment in three studies, found in the first study that child's gender moderated the impact of DC on children's prosocial behavior, having a greater effect on girls' prosocial behavior than on boys'. However, in line with our findings, no moderation was found in the other studies in the link between DC and the three measures of child adjustment (i.e. internalizing and externalizing behaviors, prosocial behaviors).

Conclusions: strengths, limitations and practical implications

Some limitations of the current research must be considered. We did not have family stressors and positive DC measured at all three waves and therefore, it was not possible to test models with a

complete longitudinal design. Changes in the level of stressors that might contribute to adolescent adjustment problems and parenting, could not be tested along with potential indirect effects. Also, we were not able by design to administer the total DCI scale and examine the associations between the specific DC subscales and strategies (e.g. *emotion-focused* and *problem-focused*) and P-ARQ, in order to test for differential effects. Moreover, we relied on self-reports and we did not have representative samples from each country (however, our samples are representative of school-based families in their respective communities). Finally, the effects of parental DC on adolescents' perceived P-ARQ were small. Still, small effects are known to have large repercussions (Prentice & Miller, 1992).

However, strengths of the present study should be acknowledged. We used a large sample size and we were able to implement a longitudinal model with three-waves covering a relevant developmental stage such as middle adolescence. We involved families from eight countries, including and comparing both mothers and fathers and testing our model according to multiple reporters. Finally, findings were supported controlling for P-ARQ stability and for family SES, Marital Status and number of children in the household.

The present study takes a step forward in the DC literature by testing the understudied link between positive DC and parenting. The findings support the spill-over effects of parents' ability to cope jointly with family stressors and the perception of a good relationship quality with their adolescents. Moreover, we supported the generalizability of these associations by comparing eight different countries showing very few and minor cross-cultural differences. Policy and interventions that attempt to improve family resilience and positive family interactions should take into account the universal impact that parental DC may have on positive parenting during middle adolescence. Our results highlight the importance of paying attention to each partner's cultural beliefs and values around parenting. The model showed invariance across countries suggesting how the *spill-over* effect might be generalizable to different cultural contexts. Public programs and policies, and other community institutions contribute to shape the degree to which families are able to acquire and develop new

capabilities when challenged. Policy makers and practitioners while testing and deriving models for the effectiveness of culturally adapted interventions, would be considering ways to support families in acknowledging the potential protective role that Dyadic Coping may play taking into account the cultural variability in context, age, stage of the life cycle. Also, we believe that gender role theories may benefit from the findings in the DC literature by exploring an interesting perspective on different fathers' and mothers' roles on cross-cultural family stress-related processes (e.g. Bogels & Perotti, 2011).

Moreover, potential differences between mothers and fathers may be presented in these associations. Including both mothers and fathers in their programs would help researchers and professional to properly address their interventions with families. The differential impact emerged regarding the role of DC on fathers' parental role might prompt professionals in including fathers in their intervention by using specific strategies to support both member of the couples in acknowledging their own and their spouses' perceptions of DC. As shown by growing research, fathers who join in on parenting tasks early may feel more confident in that role, which is associated with their continued involvement in the future (Schoppe-Sullivan et al. 2008). Intervention should also focus on the interplays between spousal and parental roles for both mothers and fathers, working on the developing the acknowledgment that both parents are interdependent (e.g. Shapiro et al. 2000). The positivity and the negativity in their feelings and relationships with their spouses (Stroud et al. 2011; Whiteside-Mansell et al. 2009) affect the relationship between parents and children. On this regard, adolescents' meanings and perceptions of intra-parental interactions and parental behaviors should be also taken into account by professional working with families. Our results focused on the perceptions that adolescent children had about their relationship with their parents. The professionals should help parents to grow awareness on the effects of that their interactions with the partner have on the way children see and perceive them. If two partners manage to cope together and support each other in times of stress, this has a positive effect on their offspring too. Health professionals who provide training or intervention with families should use adolescents' point of view as an important

resource in their attempt to address parental stress as a couple-stress (e.g. by strengthening couples' DC skills).

Finally, these findings may be useful to interventions specifically aimed at support families facing with stressors by promoting the use of DC as a promising resource for couples: parents who are satisfied in their close relationship and have sufficient communication skills may also benefit from these aspects in their parenting by defining jointly their parenting practices and showing higher consistency and more congruent educational goals. There is increasing evidence that strengthening parental and spousal support may be a powerful means for enhancing couple, family and adolescents' adjustment (e.g., Feinberg et al., 2014; McHale et al., 2015) especially in the presence of stressful events. Having two loving, consistent parents is associated with the highest levels of family resilience, adjustment and positive development.

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Supplemetary Tables

Table 1. Descriptives. Reliability and Correlations among the examined variables in Italy

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	5.53	3.51	.70	(2)	-.02	1							
Family Chaos	2.01	.46	.59	(3)	-.10	.07	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.55	.39	.81	(4)	.01	-.07	-.17*	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.40	.50	.87	(5)	-.16*	.08	-.12	.57**	1				
Mother's reported Positive Dyadic Coping Time 2	3.73	.85	.88	(6)	-.06	.10	-.27**	.07	.16*	1			
Fathers' reported Positive Dyadic Coping Time 2	3.93	.71	.89	(7)	.03	.14	-.24**	.06	.13	.36**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.49	.40	.83	(8)	.00	.05	-.15*	.48**	.35**	.03	.07	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.28	.61	.92	(9)	-.18*	.00	-.18*	.43**	.56**	.20*	.05	.50**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 2. Descriptives. Reliability and Correlations among the examined variables in Kenya

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	11.63	6.23	.84	(2)	-.06	1							
Family Chaos	2.03	.62	.54	(3)	-.24*	.26**	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.57	.41	.75	(4)	-.12	-.20	-.05	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.59	.46	.81	(5)	.06	-.23*	-.05	.72**	1				
Mother's reported Positive Dyadic Coping Time 2	4.08	.79	.86	(6)	-.07	-.18	-.08	-.02	.03	1			
Fathers' reported Positive Dyadic Coping Time 2	4.20	.72	.87	(7)	.10	-.09	-.11	.05	.04	.19	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.62	.41	.79	(8)	.12	-.05	-.19	.38**	.38**	.11	.20	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.56	.50	.85	(9)	.09	-.09	-.26*	.45**	.45**	.20	.36**	.51**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 3. Descriptives. Reliability and Correlations among the examined variables in Philippines

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	6.60	4.25	.74	(2)	-.04	1							
Family Chaos	2.21	.54	.60	(3)	-.12	.21*	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.49	.38	.77	(4)	-.05	-.22*	-.02	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.43	.41	.79	(5)	-.03	-.10	-.05	.74**	1				
Mother's reported Positive Dyadic Coping Time 2	3.85	.58	.78	(6)	-.02	.03	-.20	.06	.05	1			
Fathers' reported Positive Dyadic Coping Time 2	3.84	.55	.72	(7)	.04	-.07	-.26	.18	.08	.24	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.34	.45	.83	(8)	-.07	.02	-.06	.40**	.24*	.06	.04	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.29	.51	.88	(9)	-.02	-.01	-.10	.27*	.41**	.18	.11	.60**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 4. Descriptives. Reliability and Correlations among the examined variables in Thailand

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	3.41	3.24	.73	(2)	-.03	1							
Family Chaos	2.11	.50	.73	(3)	.14	.29**	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.34	.50	.87	(4)	.02	.11	-.20*	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.29	.53	.87	(5)	-.01	.06	-.24*	.62**	1				
Mother's reported Positive Dyadic Coping Time 2	3.40	.69	.83	(6)	-.12	-.04	-.36**	.23*	.14	1			
Fathers' reported Positive Dyadic Coping Time 2	3.39	.47	.55	(7)	-.20	-.02	-.30*	.02	-.07	.33**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.32	.49	.88	(8)	-.06	-.04	-.25*	.42**	.42**	.28*	.25	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.23	.60	.92	(9)	.10	-.20	-.14	.20	.49**	.16	.14	.54**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 5. Descriptives. Reliability and Correlations among the examined variables in Sweden

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	2.61	2.54	.69	(2)	.09	1							
Family Chaos	1.86	.45	.58	(3)	.09	.11	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.70	.30	.80	(4)	.10	.03	-.01	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.63	.39	.86	(5)	.13	.16	-.05	.61**	1				
Mother's reported Positive Dyadic Coping Time 2	3.79	.57	.89	(6)	-.13	.01	-.24	.11	.18	1			
Fathers' reported Positive Dyadic Coping Time 2	3.74	.65	.90	(7)	.09	-.25	-.13	.19	.16	.46**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.54	.37	.80	(8)	-.00	.01	.04	.51**	.42**	-.18	.12	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.48	.42	.85	(9)	-.06	.12	-.18	.42**	.70**	-.06	.12	.66**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 6. Descriptives. Reliability and Correlations among the examined variables in USA

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	3.99	3.32	.72	(2)	.01	1							
Family Chaos	2.03	.52	.68	(3)	.08	.13*	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.70	.36	.85	(4)	.01	-.11	-.08	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.64	.40	.87	(5)	.00	-.11	-.11	.69**	1				
Mother's reported Positive Dyadic Coping Time 2	3.87	.80	.90	(6)	.07	-.16*	-.27**	.15	.11	1			
Fathers' reported Positive Dyadic Coping Time 2	3.96	.66	.83	(7)	-.02	-.08	-.29**	.17	.15	.40**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.56	.46	.89	(8)	-.03	-.04	-.05	.47**	.33**	.00	.15	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.33	.59	.92	(9)	-.02	.03	-.09	.18*	.33**	.07	.14	.43**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 7. Descriptives, Reliability and Correlations among the examined variables in Colombia

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	6.24	3.89	.72	(2)	.16	1							
Family Chaos	1.81	.49	.68	(3)	.26*	.29**	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.59	.53	.89	(4)	-.09	-.26*	-.54**	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.49	.51	.87	(5)	-.12	-.04	-.30**	.45**	1				
Mother's reported Positive Dyadic Coping Time 2	3.61	.83	.89	(6)	-.25*	-.37**	-.33**	.27*	.40**	1			
Fathers' reported Positive Dyadic Coping Time 2	3.68	.54	.78	(7)	-.02	-.36**	-.40**	.31*	.22	.43**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.34	.61	.91	(8)	-.20	-.38**	-.40**	.55**	.42**	.41**	.22	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.13	.75	.93	(9)	-.20	-.22	-.31**	.20	.49**	.51**	.16	.59**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

Table 8. Descriptives. Reliability and Correlations among the examined variables in Jordan

	M	SD	α		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Child Gender				(1)	1								
Family Life Events	5.27	3.96	.76	(2)	-.21*	1							
Family Chaos	2.83	.36	.33	(3)	.17	-.02	1						
Parent-Adolescent Relationship Quality for Mothers Time 1	3.34	.47	.83	(4)	.30**	-.27**	-.08	1					
Parent-Adolescent Relationship Quality for Fathers Time 1	3.26	.51	.84	(5)	.13	-.19*	-.03	.64**	1				
Mother's reported Positive Dyadic Coping Time 2	3.84	.79	.90	(6)	-.00	-.26**	-.33**	.36**	.49**	1			
Fathers' reported Positive Dyadic Coping Time 2	3.80	.67	.83	(7)	.13	-.17	-.18	.36**	.50**	.71**	1		
Parent-Adolescent Relationship Quality for Mothers Time 3	3.35	.49	.89	(8)	.06	.06	-.09	.47**	.34**	.35**	.52**	1	
Parent-Adolescent Relationship Quality for Fathers Time 3	3.24	.54	.86	(9)	.01	.03	.01	.45**	.59**	.41**	.54**	.57**	1

Note. *=$p \leq 0.05$; **=$p \leq 0.01$

CHAPTER V

GENERAL CONCLUSIONS

According to a Developmental Systemic Perspective (Ford & Lerner, 1992), the present dissertation focused on parental dyad in order to examine the role of reciprocal associations between mothers and fathers in influencing adolescents' adjustment. We aimed to move from a perspective comparing the different and unique contributions of mothers and fathers to the child adjustment to a perspective that examined the parental dyad and the interplay of the dyad members. The three studies provided a longitudinal examination of the effect of parental strategies (i.e. Psychological Control) and parental relational coping strategies (i.e. Dyadic Coping) on adolescents' adjustment. Moreover, we aimed to extend the cross-cultural generalizability of the hypothesized dyadic associations, by comparing analytical models across different countries.

Specifically,

1) In the first study (Chapter II) we tested the longitudinal and dyadic associations between maternal and paternal aspects of Psychological Control of Guilt Induction and Verbal Constrain. We investigated our hypotheses by testing simultaneously the contribution of mothers and fathers in their perceived use of Psychological Control over time. We followed previous research on the potential similarity or differences in maternal and paternal use of Psychological Control by investigating dyadic associations on both the between-dyad level and the within-dyad level. Using a novel RI-CLPM (Hamaker et al., 2015), we compared the results with the regular CLPM (e.g., Rieger et al., 2016). The main difference between the two approaches was that the former differentiates between-person effects from within-person effects, and the latter does not.
2) The second study (Chapter III) examined the longitudinal associations between maternal and paternal use of Psychological Control (i.e. *Guilt Induction* and *Verbal Constrain*) in a dyadic context and the effect of these associations on adolescents' adjustment (i.e.

antisocial and anxious-depressing behaviors). The hypothesized associations were tested cross-culturally in order to test the moderation role of culture in families from three countries: Italy, USA and Colombia.

3) The third study (Chapter IV) aimed to test the associations of maternal and paternal positive Dyadic Coping with parent-adolescents' relationship quality. We based our hypothesis and tests on the theoretical systemic and developmental models highlighting the relevance that marital processes have for parenting practices and, in turn, child-well-being (e.g. Belsky, 1984; McHale,1995; Minuchin, 1988). The conceptualization of coping as a relational process allows researchers to examine whether the way mothers and fathers deal with family stressor as a couple may affect their role as parents and consequently their children's adjustment. We considered the perceptions that mothers' and fathers' have on the support they receive from their partners when coping with stressful situations and the quality of their parent-child relationships as perceived by their adolescents.

Overall, the present dissertation contributes to knowledge in the literature on mothering and fathering on several aspects. First, the contribution addressed the importance to include both parents when examining within family interactions. Fathers' role in family dynamics has been largely neglected compared to the vast majority of studies focusing on mothering and mother-child dyads (Lamb, 2012). Second, our study took a couple-based (dyadic) approach focusing on dyadic, reciprocal associations between mothers and fathers. Such approach allows to interpret findings on within family processes in a more complete and complex way and offers a valuable contribution to the study of family systems, since it considers simultaneously, maternal and paternal contribution on different constructs (i.e., parental Psychological Control, adolescents' adjustment, Dyadic Coping), frequently investigated independently. Third, the three studies were designed following a solid methodological design in order to properly examine and take into account the dyadic nature of the data and the non-independence of reports from members of the same family. Fourth, consistent with

a developmental perspective, the dissertation provided three longitudinal studies, focusing on the specific developmental stage of middle-adolescence and emphasizing the role of reciprocal influences between mothers and fathers, in in order to take into account the different parental influences, on adolescents' developmental pathways across time. Lastly, one of the most relevant contribution of the present work, to integrate our findings in a cross-cultural framework. We aimed to test for the moderating role of culture in the examined associations by comparing different countries and different cultures and suggesting our findings to be cross-culturally generalizable.

As regards the study reported in Chapter II, our findings suggested that parental dyadic influences in the use of Psychological Control might play a role in how it unfolds in family interactions. Specifically, maternal and paternal use of Psychological Control's strategies appear to share a reciprocal relationship over time. Knowing that parents are a primary influence on children's adjustment (e.g. Maccoby & Martin, 1983; Belsky 1984), the study extended Psychological Control theory by suggesting that parents' tendency to use psychologically controlling strategies in their interactions with their adolescents, it is profoundly reflected by their partners' selection and use of Psychological Control. Moreover, we corroborated the relevance of distinguishing between within and between level when examining family interaction processes: in the case of the present study, the within-person processes showed a different piece of information that would have been covered by constraining the two sources of variances. Especially in the case of Guilt Induction – our finding on Psychological Control suggest being cautious in continuing to rely on CLPM instead of within-person methods like the RI-CLPM when the goal is to examine within-person processes (Berry & Willoughby, 2017). These results here are in line with several studies in which the within-person process and the between-person pattern of results are distinct, sometimes even opposing (Hamaker et al., 2015; Keijsers, 2016). To our knowledge, this is one of the first studies that examined specifically mothers and fathers' reciprocal associations in their use of Psychological Control across time and levels.

Findings from Study 2 (Chapter III) contributed to the research on parental Psychological Control in several aspects. First, including both parents in the model prevented results and conclusion to be based solely on mothering contributions, overlooking paternal role in family dynamics (Jeynes, 2016). Moreover, literature on Psychological Control was enriched by the findings on potential differential contributions of mothers and fathers on adolescents' internalizing and externalizing behaviors: paternal Psychological Control was found to have effect on children development over and beyond mother's contribution, and sometimes in an unexpected direction. Also, including adolescents' adjustment both in terms of internalizing and externalizing behaviors add up to the growing evidence of Psychological Control as an important predictor of both dimensions rather than solely on the internalization (Barber, 1996;2002; Scharf & Goldner, 2018; Soenes et al., 2012). Longitudinal and differential effects from maternal or paternal Psychological Control on both adjustment dimensions suggest that practices involving conditional love, guilt induction and love withdrawal are embedded in family dyadic interactions over time. Notably, the findings showed the invariance of the associations and provided further evidence towards the universality of the effects of Psychological Control on family dynamics and adolescents adjustment across diverse cultural contexts (Barber et al., 2005; Fung & Lau, 2012; Gargurevich & Soenens, 2016). To our knowledge, this was one of the very few studies in the Psychological Control literature that tested the longitudinal and cross-cultural associations in both maternal and paternal psychologically controlling strategies.

Finally, the third study (Chapter IV) focused on the parental couple relationship quality and the effects it has on the relationship with their youth. According to Belsky's parental model (1984) marital relationship quality is one of the most relevant determinants of parenting. Accordingly, the way parents deal with stressors as a couple (i.e. Dyadic Coping) have an important effect on how adolescents evaluate the relationship quality with their parents. The present study took a step forward in the DC literature by testing the link between the positive Dyadic Coping and parenting. The findings support the *spill-over* effects (Cummings & Davies, 2010; Davies & Cummings, 1994) of parents' ability to cope jointly with family stressors and the perception of a good relationship quality

with their adolescents. We found support to the *Fathering Vulnerability Hypothesis* (Cummings et al., 2004) showing that parental positive Dyadic Coping had a significant positive longitudinal effect on P-ARQ, especially for fathers. Our findings in fathers are in line with previous research showing that a supportive interparental relationship is more relevant for fathers compared to mothers. Moreover, we supported the generalizability of these associations by comparing eight different countries showing very few and minor cross-cultural differences. To our knowledge this is the first study in the field of cross-cultural research, that focused on the specific link between Dyadic Coping and parenting, extending the relevance of relational coping from the largely studied context of couple relationship satisfaction to a broader family process.

Practical implications and applications

Despite the limitations outlined at the end of each study, findings emerged from the present dissertation underlined the importance to consider both parents and their dyadic interplay when examining parental strategies and their effects on adolescents' adjustment. This was found to be true also for parental PC that exert its major effects during adolescence as a very important developmental stage characterized by the emergence of emotional and cognitive autonomy - related aspects that required parents to adjust and adapt their parental strategies. Specifically, the findings derived from this dissertation, focused on the reciprocal influences that mothers and fathers exert on each-others about their parental choices and roles.

Findings may inform the parents, clinicians, and family therapists about how interparental relationship quality (actor and partner effects) might lead to psychologically controlling (or autonomy supportive) parenting style which in turn might lead to maladjustment (or adjustment) of the adolescents. In addition, this dissertation may also inform the parents about the way their own parental behaviors are influenced by their partner tendency to use psychologically controlling parenting style.

In this regard, the distinctiveness of maternal and paternal parenting functioning, as well as the reciprocal influences between the two, provides important implications for prevention efforts in improving family functioning and child development. Professional working in education and intervention programs hoping to enhance and/or maintain parental quality, need to focus on and being aware of the importance of include both actors in parenting dynamics since paternal Psychological Control might have effect on children development over and beyond mother's contribution, and sometimes in an unexpected direction. Professional and family researchers - including those working with families from different cultural background - should also be aware of the reciprocal influence mothers and fathers exert on each other's and the effects that the vicious cycle has on adolescents' adjustment. Finally, the findings from the present dissertation may be useful to interventions specifically aimed at support families facing with stressors by promoting the use of DC as a promising resource for couples: those parents who are satisfied in their close relationship and have sufficient communication skills may also benefit from these aspects in their parenting by defining jointly their parenting practices and showing higher consistency and more congruent educational goals.

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