Universidade do Minho
Escola de Psicologia

Maria João Rodrigues de Carvalho

Preschoolers' Compliance to Mother and to Father: The Interplay of Parenting, Children's Attachment Representation and Infants' Emotion Regulation

October, 2011

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Doctoral Thesis in Psychology
Area of Knowledge in Clinical Psychology

Supervised by
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October, 2011

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Título da Tese de Doutoramento:

Preschoolers' Compliance to Mother and to Father: The Interplay of Parenting, Children's Attachment Representation and Infants' Emotion Regulation

Orientadora: Professora Doutora Carla Martins

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Ano de Conclusão: 2011

Ramo de Conhecimento do Doutoramento:

Psicologia, Área de Conhecimento em Psicologia Clínica

Universidade do Minho, _____ de _____ de_____

Assinatura: _____

ACKNOWLEDGEMENTS

This study is the culmination of an arduous and challenging journey over four years of my life. Hardship, doubts, anguish, conquests, breakthroughs and stymies all made up this journey and were the "ingredients" of my personal growth and investment, both professional and academic. Undoubtedly, I have been "rewarded" with the wide range of experiences I encountered in this journey; the strength to overcome hurdles; the acquiring of knowledge, and in particular, the opportunity of meeting a special group of people that, in their own unique way, contributed in shaping and giving meaning to the pages that follow…To all of you I express my sincere gratitude.

To Dr. Carla Martins, my supervisor, for her patient guidance and sensitive support; for her trust and ever-present encouragement; for her conceptual and methodological insights and for her tolerance and understanding along each step of this work. She was my constant encouragement in the ways of research and my example in the demand for accuracy and improvement in the process of scientific orientation of this dissertation. Words cannot fully express my gratitude for her exemplary personal support and professional mentorship, from the first step to the last. It all started six years ago in the supervision of my master degree…

To Dr. Eva Martins, my co-supervisor, for her growing friendship, sensitive support, availability, insightful inputs and the inspiration to continue in security and confidence throughout this entire process. Her patient and pertinent commentaries, dedication and strength have helped me several times over these years.

To Dr. Isabel Soares, for the opportunity to take my first steps as a researcher in the *Grupo de Estudos da Vinculação*, for her wise advice, and for being my secure base throughout my academic career at the University of Minho.

I would also like to express thanks to the colleagues from *Grupo de Estudos de Vinculação*, particularly to Dr. Carla Faria, Dr. Susana Tereno, Dr. Vânia Lima and Dr. Pedro Dias, for their encouraging words and availability.

To Dr. João Lopes, coordinator of the Doctoral Program, for his availability and ever-present paternal sensitivity, for his excellence of knowledge, and for his wise advice conveyed throughout my academic and professional career.

To Dr. Grazyna Kochanska, from University of Iowa, for her willingness to share in the coding systems, and for her additional methodological advice.

To Dr. Margarita Ibánez, from University of Barcelona, for giving me the opportunity to share in her expertise and reliability assessment on the Düsseldorf Coding System.

I am also very grateful to everyone who has helped me with data collection and with the reliability assessment of the interactions: Mónica Freire, Joana Ribeiro, Lília Pinto, Paula Castiajo and Filipa Barbosa. A special thank you to Ana Osório, for revising part of this work and providing reflective and critical thinking.

I am especially indebted to the mothers, fathers and children who took part in this longitudinal study. I appreciate the trust they gave to the work of our team and thank them for their time and availability. They helped to ensure that the purpose of this investigation bore results and new paths of reflection and investigation were opened.

There are also many individuals who have been a source of support and invaluable encouragement throughout this process and I would particularly like to acknowledge:
Dra. Ivaneide Mendes and Dr. Miguel Mendes, for their encouragement, friendship and parental sensitivity that has helped me to find the courage and confidence in the more difficult steps of this journey. They taught me to never give up and always continue to fight for my goals…
My classmates and my friends of Centro Social Paroquial de Santa Eulália, for their growing friendship, emotional support and tolerance throughout these last four years. A special thank you to Ana Machado, for the endless cathartic conversations.
Marisa Fonseca, thank you so much for following my progress so closely, and for giving me a much needed sense of perspective, and for cheering me up when I needed it.
Joana Soares, I am very grateful for our long lasting friendship and for always being there…

To my parents and my sister for their unconditional support, comprehension and love every step of this journey and for being there at all times believing in my worth.

And to Nuno for his everlasting emotional support, dedication, companionship, wise words, and the strength he has provided throughout these years, and for the growing love. For everything else that is so much bigger than words, which has made me stronger and better able for us both to follow this path.

PRESCHOOLERS' COMPLIANCE TO MOTHER AND TO FATHER: THE INTERPLAY OF PARENTING, CHILDREN'S ATTACHMENT REPRESENTATION AND INFANTS' EMOTION REGULATION

Abstract

Objective: This PhD project aims (1) to explore whether preschoolers' compliance derives from children's individual characteristics or grows out of the interaction with the mothers and the fathers in a cleanup task, (2) to investigate the mediating role of attachment representation in the relationship between parenting control and children's compliance in the preschool years, and (3) to explore the longitudinal links between emotion regulation in infancy (10 months old) and compliance (3 years old) to both mothers and fathers. **Method:** For over three years, 52 families participated in a longitudinal prospective study. Fifty-two infants were observed at home at 10 months of age to assess their style of emotion regulation with each parent in a semi-structured problem solving task, the *Shape Sorter Task* (Martins, 2007). At 3 years of age, 49 children were again observed with each parent in two independent laboratory sessions during a cleanup task (e.g., Kochanska & Aksan, 1995, 2008), where children's compliance behaviours and parents' control behaviours were coded. Children's attachment representation was also assessed using the *Attachment Story Completion Task* (ASCT; Bretherton, Ridgeway, & Cassidy, 1990). **Results:** At 3 years old, two children's behavioural profiles in the cleanup task with their mothers and their fathers were identified: a *Compliant Profile* and a *Noncompliant Profile*. No significant associations between children's behavioural profiles with both parents were found. Differences emerged between mothers' and fathers' control behaviours which differentiated the two profiles. Children's attachment representation predicted children's compliance with the mother but not with the father. However, attachment representation did not mediate the relationship between mothers' positive parenting control and children's compliance. Thus, mothers' and fathers' parenting control behaviours play a direct role on children's compliance in the preschool years. Furthermore, the longitudinal link between early emotion regulation at 10 months and compliance at 3 years to both mothers and fathers was not found. Nevertheless, compliant children to the mother or the father showed a

trend towards expressing early adaptive emotion regulation across contexts (with the mother or with the father or with both) than noncompliant children. Finally, an association was found between infants' emotion regulation in the task with the mother and the father. **Conclusion:** This study highlights the construct of compliance as relationship specific rather than an individual characteristic. Additionally, it provides new data regarding the impact of mothers' and fathers' parenting control, attachment representation and early emotion regulation on the development of children's compliance in the preschool years.

OBEDIÊNCIA EM IDADE PRÉ-ESCOLAR À MÃE E AO PAI: A INTERAÇÃO DA PARENTALIDADE E DA REPRESENTAÇÃO DA VINCULAÇÃO E DA REGULAÇÃO EMOCIONAL PRECOCE DA CRIANÇA

Resumo

Objetivo: Este projeto de doutoramento tem como principais objetivos: (1) explorar se a obediência em idade pré-escolar é uma característica individual da criança ou uma característica que emerge na relação específica com a mãe e com o pai numa tarefa de arrumação, (2) investigar o potencial papel mediador da representação da vinculação na relação entre os comportamentos de controlo parental e os comportamentos de obediência da criança em idade pré-escolar, e (3) explorar relações longitudinais entre a regulação emocional na infância (10 meses de idade) e a obediência em idade pré-escolar (3 anos de idade). **Método:** Foi implementado um estudo prospetivo longitudinal ao longo dos três primeiros anos de vida com 52 crianças, as suas mães e os seus pais. Cinquenta e dois bebés foram observados em casa aos 10 meses de idade para avaliar o seu estilo de regulação emocional com cada um dos progenitores durante uma tarefa semi-estruturada de resolução de problemas, a *Shape Sorter Task* (Martins, 2007). Aos 3 anos de idade, 49 crianças foram de novo observadas com cada um dos seus progenitores em duas sessões laboratoriais independentes numa tarefa de arrumação (e.g., Kochanska & Aksan, 1995, 2008), na qual os comportamentos de obediência da criança e os comportamentos de controlo parental foram codificados. A representação da vinculação da criança também foi avaliada através da *Attachment Story Completion Task* (ASCT; Bretherton, Ridgeway, & Cassidy, 1990). **Resultados:** Aos 3 anos de idade, foram identificados dois perfis de obediência da criança na tarefa com a mãe e com o pai: o *Perfil de Obediência* e o *Perfil de Não Obediência*. Os resultados não revelaram associações significativas entre os perfis de obediência da criança na tarefa com a mãe e com o pai, emergindo diferenças entre os comportamentos de controlo parental da mãe e do pai na diferenciação dos dois perfis. A representação da vinculação da criança também surgiu como um preditor significativo do perfil de obediência da criança na tarefa com a mãe mas não com o pai. Contudo, a representação da vinculação da criança não surgiu como um mediador da relação entre os

comportamentos maternos de controlo e o perfil de obediência das crianças. Assim, os comportamentos de controlo parental positivo da mãe e do pai desempenham um papel direto no desenvolvimento da obediência em idade pré-escolar. Além disso, não foram encontradas relações longitudinais entre a regulação emocional aos 10 meses de idade e a obediência aos 3 anos de idade. No entanto, as crianças obedientes com a mãe ou com o pai revelaram uma tendência para expressar uma regulação emocional adaptativa precoce em diferentes contextos de interação diádica (com a mãe ou com o pai ou com ambos), comparativamente com as crianças não obedientes. Finalmente, foi encontrada uma associação significativa entre a regulação emocional na infância com a mãe e com o pai. **Conclusão:** Este estudo sublinha o construto da obediência como tendo uma natureza relacional específica mais do que uma característica individual. Adicionalmente, proporciona novos dados relativos ao impacto dos comportamentos de controlo parental, da representação da vinculação e da regulação emocional precoce no desenvolvimento da obediência das crianças em idade pré-escolar.

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CHAPTER 1

Introduction

> " (…) within the guidance, boundaries, and support provided by caregivers, toddlers can achieve a substantial level of self-regulation, which prepares the way for the more true self-regulation that is to emerge." (Sroufe, 1996, p. 213)

The aim of this chapter is to address the central constructs involved in this research project: children's compliance in preschool years as a stepping stone for self-regulation, and variables thought to explain inter-individual differences from a relational point of view, namely parenting control, attachment representation, and early emotion regulation.

The period from infancy through preschool age is considered a critical time for the emergence of self-regulation, which, according to Kopp (1982, 1989), takes place within the context of children's early relationships with their parents. During preschool years, children gradually develop the ability to attune their behaviours and emotions to best support situational demands, and to initiate, maintain, and modulate their behaviours and emotions in response to parental requests (Kochanska & Aksan, 1995; Thompson, 1994, 2008). The development of these capacities is expressed in children's compliance. When children follow their parents' requests and directives, they are changing their behaviours and emotions in order to accommodate and manage parents' expectations. This process allows them to internalize society's values and rules that are being formulated and transmitted by their parents, thus facilitating their adaptation to the social environment (Thompson, 1994, 2008). Hence, compliance has been shown to be an important predictor of the internalization of social rules and parental standards, and one of the steps towards the development of self-regulation during later preschool years (Kochanska, 2002; Kopp, 1982, 1989; Sroufe, 1996). In turn, noncompliance can be conceptualized as less self-regulated behaviour, indicating the absence of children's willingness or ability to cooperate (Gralinski & Kopp, 1993; Kopp, 1982; Sroufe, 1996). In earlier studies, children's willingness to comply with parents' demands and rules at preschool age was associated with fewer antisocial behaviour problems approximately a year later (Kochanska, Barry, Aksan, & Boldt, 2008). Thus, it becomes relevant to understand and explore the development of children's compliance to parental demands during the preschool years.

1.1 Compliance in the Preschool Years

Compliance with parental requests is generally conceptualized as a prototypic form of early self-regulation that reflects children's ability to initiate, cease, or modulate their behaviours, thoughts and emotions in response to parental requests (Gralinski & Kopp, 1993; Kochanska, Coy, & Murray, 2001; Kopp, 1982). Compliance is often based on a conceptual model that encompasses two motivationally distinct forms: *committed compliance,* in which children are internally driven to willingly embrace their parents' requests, and *situational compliance*, in which children are externally driven to be cooperative and nonoppositional, but they do not fully accept their parents' agenda

(Kochanska, 2002; Kochanska & Aksan, 1995, 2008). Most of the research in the area of compliance has been carried out from a socialization perspective, which considers compliance as a "… process by which societies induce their members to behave in socially acceptable ways" (Crain, 2000, p. 197). The socialization perspective focuses on how parents try to socialize young children by setting limits, promoting the internalization of rules or by using positive guidance with the intention of helping the children develop compliance and self-regulation (Crain, 2000; Grolnick & Farkas, 2002; Kochanska, 1995). Parenting behaviours and children's compliance in the preschool years mark the beginning of the process of self-regulation as an internal process, instead of it being externally controlled by parents.

Thus, a conceptual and empirical review of the literature reveals how children's compliance has been related to their parents' behaviours (Colman, Hardy, Albert, Raffaelli, & Crockett, 2006; Crockenberg & Litman, 1990; Dix, Stewart, Gershoff, & Day, 2007; van der Mark, Bakermans-Kranenburg, & van IJzendoorn, 2002) as well as to infant's attachment quality (Higgins, 2008; Kochanska, Koenig, Barry, Kim, & Yoon, 2010; Matas, Arend, & Sroufe, 1978; Stayton, Hogan, & Ainsworth, 1971).

1.2 Compliance and Parenting

A number of researchers have argued that children develop compliance abilities within a network of social relationships, particularly in the dyadic interactions with their parents (Barry & Kochanska, 2010; McElwain, Halberstadt, & Volling, 2007). Parental responses determine the nature of children's behaviours and this has implications for their compliance (Belsky, Rha, & Park, 2000; Colman et al., 2006; Feldman & Klein, 2003; Higgins, 2008). The majority of studies on parenting and compliance have focused on parental control behaviours (e.g., see Karreman, van Tuijl, van Aken, & Dekovic, 2006 for a meta-analysis), such as positive control behaviours (i.e., the use of clear guidance and orientation, polite suggestions, hints, playful comments, and positive reinforcements while directing the child), and negative control behaviours (i.e., power-assertive control, anger, negativity, physical and verbal coercive behaviours, harshness, criticism, hostility, and over-control). Children whose mothers and fathers use positive parenting and guidance behaviours do tend to be more compliant as well as internalize socially appropriate ways to behave by the preschool period (Colman et al., 2006; Crockenberg &

Litman, 1990; Dix et al., 2007; Kochanska, Aksan, & Koenig, 1995; van der Mark, et al., 2002). On the contrary, when mothers and fathers use negative parenting and controlling behaviours, their children tend to exhibit more noncompliant behaviours as well as difficulties delaying gratification and regulating their emotions (Calkins & Johnson, 1998; Deater-Deckard, Ivy, & Petrill, 2006; Mauro & Harris, 2000). According to this review, parents who are warm and sensitive, and respond to children's behaviours and emotions in appropriate ways raise better regulated children, who, in turn, are more likely to be socially competent and comply with parents' requests (Spinrad et al., 2007).

Contrastingly, very few empirical studies have examined the possible differential impact of mothers' and fathers' parenting (Barry & Kochanska, 2010; Blandon & Volling, 2008; Feldman & Klein, 2003; Higgins, 2008; Kochanska, Aksan, Prisco, & Adams, 2008; Kochanska et al., 2010). Nevertheless, the findings so far highlight the importance of exploring potential similarities and differences between mothers' and fathers' parenting behaviours on children's compliance (Diener, Mangelsdford, McHale, & Frosch, 2002; Grossmann et al., 2002; Parke & Buriel, 2006). Therefore, the particular role of mothers' and fathers' parenting on children's compliance must be investigated.

1.3 Compliance and Attachment

Attachment theorists widely acknowledge the importance of parent-child relationships for the development of compliance (Borelli et al., 2010; Thompson, 2008; Weinfield, Sroufe, Egeland, & Carlson, 2008). According to Bowlby (1969/1982), the development of an attachment relationship to a primary caregiver is considered a developmental milestone in infancy. In turn, early attachment organization has been conceptualized as having significant implications for developmental trajectories of children, constituting a chief contributor to the evolving parent-child cooperation and to children's compliance (Kochanska et al., 2010; Thompson, 2008; Weinfield et al., 2008). In fact, empirical studies have revealed links between children's secure attachment organization and their ability to comply with parental requests, though the evidence is relatively modest (Londerville & Main, 1981; Kochanska & Aksan, 1995; Kochanska et al., 2010; Matas et al., 1978; Stayton et al., 1971; Volling, Blandon, & Kolak, 2006). One potential reason for that could be due to the focus on the link between early attachment

behavioural organization assessed in the Strange Situation Procedure (SSP; Ainsworth, Blehar, Waters, & Wall, 1978) and children's later compliance and self-regulation.

In the preschool years, however, children are able to use communicative, linguistic and symbolic forms to express their mental representation and to organize their knowledge (Bretherton, Grossmann, Grossmann, & Waters, 2005; Gloger-Tipplet & Koenig, 2007). In fact, preschoolers have the ability to inhibit attachment behaviour and to internally operate on the goals and plans of the self and other, to understand the causal relationship between the caregiver's plans and behaviour, and to engage in goal-corrected negotiations with the caregiver regarding a shared plan for proximity – the formation of a goal-corrected partnership. In other words, children's mental representation of relationships in particular, and the world in general, become more sophisticated and their behaviour is potentially more flexible (Bowlby, 1969/1982; Marvin & Britner, 2008). These newly emerging conceptual structures and processes can be observed in children's doll-play narratives centering on attachment-relevant themes, with children's narratives reflecting their working models of attachment (Bretherton, Ridgeway, & Cassidy, 1990; Gloger-Tipplet & Koenig, 2007; Solomon & George, 2008). Empirical findings indicate that performance in attachment story completion tasks correlate with standard measures of attachment (Gloger-Tippelt, Gomille, Koenig, & Vetter, 2002; Miljkovitch, Pierrehumbert, Bretherton, & Halfon, 2004), which suggest a powerful methodology for investigating the attachment relationships of preschool children. Thus, research focusing on preschoolers' attachment representation and compliance is needed.

1.4 Compliance and Emotion Regulation

Emotion regulation involves children's ability to control and direct their emotional experiences, to maintain organized behaviour in the presence of strong emotions, and to be guided by emotional experiences (DeHart, Sroufe, & Cooper, 2004). Thus, emotion regulation refers to the process that serves to manage emotional arousal and support adaptive responses (Calkins, Smith, Gill, & Johnson, 1998; Gross & Thompson, 2007). In other words, adaptive emotion regulation allows the individual to redirect, control, modulate, and modify emotional arousal to enable him/her to function adaptively in emotionally challenging situations (Cassidy, 1994; Thompson & Meyer, 2007). If the first year of life is fundamental for developing the ability to regulate

emotions (Eisenberg & Spinrad, 2004), it is during preschool years that emotional regulatory capacities become more integrated and complex (Gross, 1998), allowing preschool children to be more aware of their emotional expressions and internal experiences.

Children learn how to regulate their emotion within the parent-child relationship (Grolnick, McMenamy, & Kurowski, 2006; Morris, Silk, Steinberg, Myers, & Robinson, 2007). The role of parents is to help their children regulate their emotions throughout their development, by being emotionally available and expressive and by using positive and guidance behaviours that involve helping the children to tolerate frustrating situations and to delay gratification. An adaptive emotion regulation style (e.g., using self-regulating strategies and verbal expression instead of physical or verbal coercive aggression) can improve children's social competence in dealing with parental demands and peer pressure, as well as decreasing the probability of externalizing or internalizing problems in the preschool and school-aged years (Kochanska et al., 1995; Kochanska, Barry, Aksan, & Boldt, 2008).

Emotion regulation and *compliance* can be conceived as two types of self-regulation that develop from infancy through preschool years. Whereas emotion regulation involves the ability to respond in a socially appropriate, adaptive and flexible manner to stressful demands and emotional experiences, compliance represents the ability to regulate behaviours based on requests (Cole, Michel, & Teti, 1994; Eisenberg & Spinrad, 2004; Karreman et al., 2006). Emotion regulation influences compliance in two ways. First, in order to comply with parents' requests, children have to control their behaviours and emotions. It is possible that they can inhibit what they were doing or what they would rather be doing. In these situations, frustration may arise and the way children deal with these negative emotions may lead to a more or less socially appropriate response (Stifter, Spinrad, & Braungart-Rieker, 1999). Second, the behaviours and the emotions that are recruited by the infants to regulate emotional arousal may translate into strategies needed for controlling behaviours in response to a request to comply (Stifter et al., 1999). In this framework, both emotion regulation and compliance can be considered as developmental precursors of self-regulation.

Interestingly, very few empirical studies to date have explored the relationship between emotion regulation in infancy and compliance in the preschool years (Calkins et al., 1998; Kalpidou, Power, Cherry, & Gottfried, 2004; Stifter et al., 1999). To our knowledge, only the study of Feldman and Klein (2003) analyzed the relationship

between children's emotion regulation and compliance to fathers. Therefore, more longitudinal results linking emotion regulation in infancy and compliance in preschool years are in demand.

1.5 Main Goals and Research Questions of the Current Investigation

What accounts for individual differences in children's compliance to parental demands in the preschool years?

Given the above state-of the-art and the gaps in literature concerning compliance in preschool years and its relationship with parenting and attachment, the main goal of the first two studies was to understand, in greater depth, the concurrent dynamic interplay of compliance, parenting and attachment in child-mother and child-father relationship at age three. The third study focused on the longitudinal links between emotion regulation in infancy and compliance at age three.

Three central questions guided our empirical work:

1. Is compliance at age 3 an individual characteristic or relationship specific?

In this first study, presented in Chapter 2, the construct of children's compliance in the preschool years was conceptualized at a dyadic level rather than at an individual child one, under the assumption that the role of mothers and fathers may be particularly salient for preschoolers' compliance and early emotion regulation (Kopp, 1989).

2. Is attachment representation a mediator in the relationship between parenting control behaviour and children's compliance in the preschool years?

As the importance of parent-child relationships for children's compliance has been broadly documented (Blandon & Volling, 2008; Kochanska et al., 2010), the second study, presented in Chapter 3, aimed at understanding the role of the attachment representation in the link between parenting control and compliance. To our knowledge, this study is the first attempt to empirically explore the link between attachment representation and children's compliance, using representational measures rather than traditional behavioural organization measures of attachment. The use of measures based on children's symbolic representation is a relatively new endeavor, and is a promising field of research. Furthermore, this study explores the innovative research question of attachment representation playing a meditational role in the relation between parenting control and children's compliance.

3. Is emotion regulation at 10 months linked to later compliance at 3 years of age?

Longitudinal studies are needed to further investigate the process by which children develop emotion regulation styles in infancy over time, and to understand how these strategies might be related to children's compliance in preschool years. The third study, presented in Chapter 4, represented an attempt to empirically uncover longitudinal links between emotion regulation in infancy and compliance in preschool years.

Thus, the present PhD dissertation is composed of three papers, which reflect and explore the three research questions outlined above.

Paper 1, titled ***Compliance at Age 3: Individual Characteristic or Relationship Specific?*** (cf. Chapter 2), aimed at (1) identifying distinct children's behavioural profiles according to their compliance behaviours, (2) exploring whether preschoolers' compliance derives from children's individual characteristics or grows out of the relationship with their mothers and fathers, and (3) analyzing differences between mothers' and fathers' parenting control behaviours on the children's compliance profiles. This study had a cross-sectional design and all variables were measured concurrently.

The three specific research questions of this paper were:

a. Do distinct children's behavioural compliance profiles emerge within a dyadic interaction cleanup task with mother and with father?
b. Are the behavioural compliance profiles identified in child-mother interactions associated with the behavioural compliance profiles identified in child-father interactions?
c. Do maternal and paternal behaviours constitute explanatory variables of children's behavioural compliance profiles?

Paper 2, titled ***Parenting Control and Preschoolers' Compliance: Is Attachment a Mediator?*** (cf. Chapter 3) focused on the mediating role of children's attachment representation in the relationship between parenting and children's compliance in the preschool years. This study also had a cross-sectional design, as children's compliance outcome and potential explanatory variables were measured concurrently.

The four specific research questions of this paper were:

a. Do mothers' and fathers' parenting predict children's compliance profiles?

b. Do children's attachment representations predict children's compliance profiles?
c. Do mothers' and fathers' positive and appropriate parenting predict children's secure attachment representations?
d. Is attachment representation a mediator in the relationship between parenting and children's compliance?

Paper 3, titled ***Infants' Emotion Regulation and Preschoolers' Compliance to Mother and to Father: Is There a Longitudinal Link?*** (cf. Chapter 4), aimed at exploring longitudinal links between emotion regulation in infancy (10 months old) and compliance with mothers and fathers in preschool years (3 years old).

This paper aimed at answering the following two specific research questions:

a. Are there longitudinal links between adaptive emotion regulation at 10 months and compliance with mothers and fathers at 3 years?
b. Do infants at 10 months start developing an emotion regulation style that is similar across different situations?

All three empirical studies were grounded in the ecological perspective (Belsky, 1984; Bronfenbrenner, 1979), under the main assumption that parent-child relationships constitute an important dyadic context for the development of emotion regulation strategies in infancy and compliance in preschool years. This, in turn, had methodological implications in the type of data that would allow us to answer our research questions. Most of the key variables included in this PhD dissertation have been based on observational data, which involved the development of coding systems, extensive coding, and, last but not least, rater training and inter-rater reliability. Surely observational methodology involves a significant investment of time, resources and training but as it has "…a unique ability to allow us to witness 'in the moment' the complexity and the richness of the processes involved in human interaction, in multiple contexts" (Martins & Machado, 2006, p. 173). We believe that our empirical findings provide a more precise and ecologically valid description of the processes studied.

This PhD dissertation finishes with Chapter 5, which presents the main contributions of the three empirical studies, final considerations regarding their limitations and the implications for future research.

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CHAPTER 2

Compliance at Age 3: Individual Characteristic or Relationship Specific?

> "Although compliance is often conceptualized as a characteristic of an individual child (Kopp, 1982), it is also an interactive concept that reflects the quality of the caregiver's control style." (Kochanska & Aksan, 1995, p. 238)

Abstract

Objective: This study aims (1) to identify distinct children's behavioural profiles according to their compliance behaviours during a cleanup task with the mother and the father, in two separate sessions, (2) to explore whether preschoolers' compliance derives from children's individual characteristics or grows out of the relationship with the mother and the father, and (3) to analyze the differences between mothers' and fathers' parenting control behaviours on children's compliance profiles. **Method:** Forty-nine three-year-olds (28 boys, 57.1%) participated in the cleanup task (e.g., Kochanska & Aksan, 1995, 2008) with their mothers and their fathers, within a two-week period, in order to assess children's compliance behaviours and parents' control behaviours. **Results:** Two children's behavioural profiles in the cleanup task with their mothers and their fathers were identified: a *Compliant Profile* and a *Noncompliant Profile*. Our results revealed no significant associations between children's behavioural profiles with the mother and with the father. However, we did find evidence that parental control behaviours affected their children's compliance. Finally, differences emerged between mothers' and fathers' control behaviours which differentiated the two profiles. **Conclusion:** These findings underpin the construct of compliance during preschool years as relationship specific rather than an individual characteristic. Future research should contribute to a more detailed understanding of the differential impact of mothers' and fathers' control behaviours.

Keywords: children's compliance behaviours, parents' control behaviours, parent-child dyadic interaction, preschoolers

Introduction

Compliance, or children's ability to initiate, cease, or modulate their behaviours, thoughts and emotions in response to parental requests and directives (Colman, Hardy, Albert, Raffaelli, & Crockett, 2006; Gralinski & Kopp, 1993; Kopp, 1982) is a central developmental task (Braungart-Rieker, Garwood, & Stifter, 1997; Kochanska & Aksan, 1995). Kopp (1982) considers that it is during preschool years that compliance develops, with parents playing a major role in both promoting self-regulation capacities, through the formulation and management of rules, and providing young children with the opportunity to internalize these rules (Grolnick & Farkas, 2002; Kochanska, Koenig, Barry, Kim, & Yoon, 2010).

It has been argued that the degree of children's compliance may reflect their motivation and ability to self-regulate, with numerous studies highlighting two types of compliance. On the one hand, *situational* (or externally-motivated) *compliance* describes cooperative children who require parental prompts to follow through with a request. On the other hand, *committed* (or self-regulated) *compliance* describes children's enthusiastic acceptance of parents' directives and their wholehearted willingness to comply (Kochanska, 2002; Kochanska & Aksan, 1995, 2008; Kochanska, Aksan, & Koenig, 1995). While the latter reflects the self-regulation and the internalization of parental rules, the former implies submission to parents' demands (Kochanska, 1993; Kochanska & Aksan, 1995; Kochanska et al., 1995; Kochanska, Tjebkes, & Forman, 1998). As children develop from early to late preschool years, they are expected to display more committed compliance, thus requiring less parental prompting (Blandon & Volling, 2008).

In contrast, noncompliance takes place when children exhibit less self-regulated behaviour, indicated by their unwillingness or inability to cooperate with others' demands (Gralinski & Kopp, 1993; Kopp, 1982; Sroufe, 1996). Thus, behaviours such as passivity, assertiveness, defiance, and avoidance (Crockenberg & Litman, 1990; Kochanska & Aksan, 2008; Kuczynski & Kochanska, 1990; NICHD Early Child Care Research Network, 2004; Stifter, Spinrad, & Braungart-Rieker, 1999) reflect an underlying attitude for violating rules, often linked with future behaviour problems and unadaptive development (Kalb & Loeber, 2003; Kochanska, Barry, Aksan, & Boldt, 2008; Kuczynski & Hildebrandt, 1997). Through *passive noncompliance* children simply ignore adults' directives while maintaining a non-angry or non-distressed affect (e.g., carrying on playing with the toys while ignoring requests for compliance), whereas with *assertive*

noncompliance or *overt resistance* children verbally refuse to comply and use negotiation strategies while maintaining a neutral, non-angry tone of voice. *Defiant noncompliance* is observed when children do not follow directions and display negative emotions (e.g., whining, crying, screaming) or aggressive behaviour (e.g., kicking, throwing toys, temper tantrums), and finally, *avoidant noncompliance* is exhibited when children move away or hide from the parent in order not to comply (Braungart-Rieker et al., 1997; Kochanska & Aksan, 1995, 2008; Kochanska et al., 1995; NICHD Early Child Care Research Network, 2004). Research has already shown that when children reach the preschool years they tend to display greater committed compliance, show less defiance and/or passive noncompliance and less situational compliance (Crockenberg & Litman, 1990; Kochanska, 2002; Kochanska & Aksan, 1995; Kochanska et al., 1995).

Children's compliance behaviours are assessed in the parent-child contexts "designed to be 'saturated' with control issues typical for early childhood" (Kochanska & Aksan, 2008, p. 3). The cleanup paradigm in which children are asked "to do" something (i.e., put toys in a basket), and the delay task in which children are asked "not to do" something (i.e., refrain from touching an attractive toy) are the two main structured procedures to assess children's compliance behaviours in dyadic contexts (e.g., Braungart-Rieker et al., 1997; Kochanska, Coy, & Murray, 2001; Kochanska et al., 2010). To our knowledge, however, research on children's compliance has only focused on associations between different children's responses to parents' demands (Crockenberg & Litman, 1990; Kochanska, 2002; Kochanska & Aksan, 1995; Kochanska et al., 1995). The present study aimed to go beyond previous correlational findings by identifying distinct children's behavioural profiles that integrate compliance, avoidance, resistance and defiance behaviours, emerging within a dyadic "do" interaction task with the mother and with the father (i.e., a cleanup task). This was the first aim of this study. In addition, a scale comprising of five levels varying from committed compliance to noncompliance, passing through situational compliance was developed so as to capture Gralinski and Kopp's (1993) compliance definition as a continuous concept reflecting varying levels of self-regulation (i.e., from situational to internally oriented compliance). This methodological innovation parted from studies that analyzed compliance in a dichotomous fashion: situational versus committed compliance.

Beyond these methodological issues, one conceptual question that deserves attention is whether compliance derives from children's individual characteristics or grows out of the relationship with the caregiver and is specific to that relationship. While

there is empirical evidence that attest to the contribution of children's characteristics (e.g., temperament or gender) for their ability to comply, there is still a significant proportion of the variance to be explained (Kochanska, 1993; Kopp, 1989; Stifter et al., 1999). In fact, compliance has been shown to be related to the quality of parental behaviours observed during dyadic tasks (Blandon & Volling, 2008; Karreman, van Tuijl, van Aken, & Dekovic, 2006; Kochanska & Aksan, 2006; Kochanska et al., 2010), and, more specifically, to parental control rather than to children's characteristics, such as inhibition and emotion regulation (see Karreman et al., 2006 for a meta-analysis). Therefore, children may exhibit a particular behavioural profile with the mother that is not necessarily the same as the profile displayed with another figure, namely, the father. Thus, the second aim of the present investigation was to explore whether preschoolers' compliance derives from children's individual characteristics or grows out of the relationship with the mothers and with the fathers. We believed that children's compliance is an interactive concept that reflects the parents' control behaviours and is a relationship specific. Therefore, considering this aim, we first explored whether the behavioural profile identified within mother-child interactions were associated with the behavioural profile identified in equivalent father-child interactions. We predicted that no association would be found between children's compliance behavioural profiles emerging from the interaction with the mother and their compliance behavioural profiles emerging from an equivalent interaction with the father. Second, we analyzed the associations between children's behavioural profiles and their mothers' and fathers' behaviours. We anticipated that parental control behaviours would affect their children's compliance.

Parental control seems to have a particular impact on children's compliance. Whereas positive control (i.e., limit-setting activities with mild power-assertion and the use of clear guidance and orientation while directing the child) is positively associated with higher levels of children's compliance; more negative types of control (i.e., power-assertive control, anger, negativity, physical and verbal coercive behaviours, harshness, criticism, hostility, and over-control) tend to be associated with lower levels of compliance (Braungart-Rieker et al., 1997; Calkins & Johnson, 1998; Campbell, Pierce, March, & Ewing, 1991; Crockenberg & Litman, 1990; Dix, Stewart, Gershoff, & Day, 2007; Donovan, Leavitt, & Walsh, 2000; Karreman et al., 2006; Kochanska & Aksan, 1995; Smith, Calkins, Keane, Anastopoulus, & Shelton, 2004).

There is empirical evidence that highlights differences in terms of mothers' and fathers' behaviours that may account for individual differences in children's compliance.

Power, McGrath, Hughes, and Manire (1994) found that fathers were more direct in their requests for children's compliance than mothers, with mothers softening their requests and using bargaining strategies. Along the same line, mothers have been found to use more gentle guidance with children than fathers (Blandon & Volling, 2008; Volling, Blandon, & Gorvine, 2006). Interestingly, children's differential responses to maternal and paternal requests have also been noted. Thus, not only are children less likely to ask for clarification in response to fathers' than to mothers' requests, but also are more likely to comply with their fathers' than their mothers' directives (Feldman & Klein, 2003; Power et al., 1994; Volling, McElwain, Notaro, & Herrera, 2002). Similarly, Higgins' study (2008) also reported differences in mothers' and fathers' limit-settings behaviours on children's compliance.

In light of this state-of-the-art and based on our theoretical assumption that children's compliance is relationship specific, the third goal of this investigation was to analyze the differences between mothers' and fathers' parenting control behaviours on children's compliance profiles. We anticipated that children's behavioural compliance profiles would be predicted by different maternal and paternal behaviours.

Method

Participants

Forty-nine child-mother and child-father dyads were assessed when the children (28 boys, 57.1%) were aged between 36 and 40 months (M = 37.78, SD = .99). Most parents had higher education qualifications and came from an upper-middle socioeconomic background. Mothers' and fathers' average ages were 33.45 years, SD = 4.76 and 33.68, SD = 4.60, respectively. All dyads were participants in a larger longitudinal study since their infants were 10 months of age. The initial sample consisted of 52 intact families (infant and both parents). However, three families did not participate in the third year assessment for different reasons (one family refused, one could not be traced, and the last was unable to participate at the time). Additionally, recording problems prevented the inclusion of four dyads in the statistical analyses (three child-father and one child-mother dyads). All participants were Caucasian and had Portuguese as their first language.

Procedures

The recruitment of families was done through the directors of several childcare centres from a large city in the North of Portugal who handed the families an invitation letter with the aims and the overall procedure of the longitudinal project. Participating families were contacted by the research team and were invited to participate at two time-points of their children's age: at 10 months and at 3 years. Data for the current study were drawn from observations at age three. Each child-mother dyad attended one laboratory session with the approximate duration of 1½ hours, including a 15-minute break. During this session, child-mother interactions were observed in a cleanup task (e.g., Kochanska & Aksan, 1995, 2008) and at other procedures of protocol. Within two weeks of the first session, children returned to the laboratory with their fathers for the cleanup task. All procedures were videotaped for subsequent coding and took place in a university laboratory setting composed of two adjacent rooms separated by a two-way mirror.

Measures

Children's Compliance Behaviours.

The *cleanup task* (e.g., Kochanska & Aksan, 1995, 2008) was used to assess children's behaviours with their mothers and their fathers in a "do" context. After a 5-minute parent-child toy play period, parents were asked to instruct their children to pick up the toys and place them into a large box. The task ended when all the toys had been placed in the box or when the parent indicated that they had finished it (M = 2.66 min, SD = 1.83, in the child-mother task; M = 3.12 min, SD = 1.84, in the child-father task; t (44) = -1.15, p = .257).

A coding system for assessing children's compliance behaviours was developed based on previous coding systems (Crockenberg & Litman, 1990; Klimes-Dougan & Kopp, 1999; Kochanska & Aksan, 2008; Kopp, 1989; Kuczynski & Kochanska, 1990; NICHD, Early Child Care Research Network 1998, 2004; Stifter et al., 1999) and consisted of four scales assessed on a 5-point *Likert* scale, every 60 seconds: *compliance, avoidance, overt resistance* and *defiance*. *Compliance* was described using categories of compliance/noncompliance in reference to directives from mother/father, thereby reflecting children's orientation to the task (*1 = noncompliance throughout the segment* to *5 = compliance throughout the entire segment, where the parental agenda functions as the children's own and the children embraces/endorses the directive*). *Avoidance* was observed when children avoided the task, ignoring their parents' requests, moving away

or hiding to avoid having to comply, while maintaining non-angry or non-distressed affect (*1 = child displays a conspicuous and very marked avoidance towards the parental directive throughout most of the segment* to *5 = child displays no avoidant behaviours*). Children could manifest the following behaviours of avoidance: ignoring parents' directives; non-cooperative; non-receptive to parental agenda, continuing to play with toys and/or expressing "deaf ears" to the parental directive; moving away from the parent during the task; diverting attention to the environment or other toys; and deviating from the task materials. Through *overt resistance*, children overtly rejected the parental agenda, by refusing or negotiating with the parent, showing a non-aversive protest (*1 = child overtly rejects parental agenda through refusals and/or the negotiations to clean up in most of the segment* to *5 = child displays no overt resistance behaviours*). More specifically, refusals included the following subcategories: *simple refusal* (e.g., "No"), *lack of desire* (e.g., "I don't want to", "I don't like to") and *lack of ability* (e.g., "I can't", "I don't know how") (Klimes-Dougan & Kopp, 1999). Negotiations to clean up were coded when children tried to change the parents' directive or to reach a new one, in mutual agreement with the parents' initial directive (e.g., "I'll clean this up later, ok dad?", "Let me play with this toy first, I'll clean after..."). *Defiance* was exhibited when children did not follow directions and answered with an angry or whiny tone of voice and/or displayed aggressive behaviours (*1 = child displays conspicuous and very marked defiant behaviours towards the parental directive throughout most of the segment* to *5 = child displays no defiant behaviours*). The most defiant behaviours exhibited by children were: poorly controlled anger/anger outbursts, crying and whining, kicking or throwing toys around, temper tantrums and overt expression of frustration in body language and voice. Thus, any behaviour accompanied with anger, sadness or other negative affect should be coded as defiance.

Final scores on each dimension resulted from the average of all 60-second segments.

About 30% of the sample was coded by four previously trained researchers. Cohen's kappa yielded inter-rater reliabilities of .97 for compliance, .90 for avoidance, .94 for overt resistance and .93 for defiance.

Parents' Control Behaviours.

The coding system used for parental control behaviours was developed based on previous studies (Crockenberg & Litman, 1990; Kochanska & Aksan, 2008; Kopp, 1989; Kuczynski & Kochanska, 1990; NICHD, Early Child Care Research Network 1998, 2004; Stifter et al., 1999). This system was used to measure the parents' verbal and non-verbal attempts to elicit their children's compliance through four scales of parental control strategies, assessed on a 4-point *Likert* scale, every 60 seconds: *physical coercive control*, *verbal coercive control*, *assertive control* and *oriented/guidance control*. *Physical coercive control* was exhibited when parents controlled the children's behaviour in a coercive and forceful manner associated with anger or irritation. This control strategy involved the use of any physical intervention, physical restraint (e.g., taking the toy out the children's hand) or physical punishment. Parents may have used physical interventions that were delivered with the intention to reorient the children to the parental agenda. They could also restrict the children's movement by pulling their whole body into the task area or by snatching the toys away from the child. Any form of physical control associated with impatient, forceful, threatening, angry and/or affectively negative tone should be coded as coercive physical control. Through *verbal coercive control*, parents controlled the children's behaviour using direct commands (e.g., "Clean up the toys", "Stop playing with the toys"), threats (e.g., "Do not play with this toy unless") or by criticizing the children's actions (e.g., "This is not the way we clean up"), associated with anger or irritation on behalf of the parental figure. *Assertive control* was observed when parents controlled the children's behaviour in an assertive way, that is, without anger or irritation. Namely, the parents held the children's hand and/or the children firmly; moved the children decisively; blocked the children's ongoing movement (that were not aimed at cleaning up the toys) and removed the toys from the children's hand. Verbally, parents gave direct commands, directives and prohibitions in a clear, precise and assertive way and without anger or irritation. They could also call the children's name in a firm and assertive tone and/or try to explain why they should carry out the task (e.g., "She asked you to pick up the toys"), issued without strong pressure, forcefulness or threat. Parents could include rewards or reinforcement (e.g., praise, comments that indicate approval or enthusiasm), presented contingently after the children attended a parental directive. In conclusion, parental control was not masked as play, but neither was there any anger or explicit threat. However, with *oriented/guidance control* parents controlled their children's behaviour regarding the task in a gentle, subtle or playful manner. No forceful

verbal or physical control was present during the entire segment. Parents tended to orient the children to the task using polite suggestions, hints, playful comments, reasons and turned the task into a game (e.g., singing, clapping, throwing toys playfully into basket, suggesting loading and dumping the beach bucket to clean up the toys, suggesting to put the toys away by colour, shape or other categories). Parents also tried to elicit the children's interest and challenged children to do the task (e.g., "Can you do this?"), using positive reinforcements (e.g., "Very good!", "Great job!"). Furthermore, parents could gently turn the children toward the toys or away from the door, put a toy into the children's hand gently and direct the children to the task (e.g., holding the children's face gently/softly, tapping on shoulder for attention). In summary, parents' behaviour was playful, encouraging and affectively positive, with parental control being understated in play-like and interactive quality.

Final scores on each dimension resulted from the average of all 60-second segments.

About 30% of the sample was coded by four previously trained researchers. Cohen's kappa yielded inter-rater reliabilities of .90 for physical coercive control, .86 for verbal coercive control, .80 for assertive control and .88 for oriented/guidance control.

Results

First, preliminary paired-samples *t* tests were used to explore whether there were differences between mothers' and fathers' parenting control behaviours as well as differences between children's behaviours in the cleanup task with mother and father (Table 1A). Then, we proceed to the goals of this investigation, performing the following statistical analyses: (i) cluster analyses were performed in order to identify distinct groups of children according to their compliance behaviours in a cleanup task with their mother and with their father (Table 2A); (ii) a qui-square test was conducted to explore the associations between children's behavioural profile to mothers and to fathers (Table 3A); and, (iii) discriminant analyses were used to differentiate the previously identified distinct groups of children using mothers' and fathers' parenting behaviours as predictor variables (Table 4A).

Parents' Control Behaviours and Children's Compliance Behaviours

Table 1A shows that no differences were found between mothers' and fathers' control behaviours directed towards their children during the cleanup task. Likewise, children's behaviours did not vary depending on their partner during the cleanup task.

Table 1A

Parents' Control and Children's Compliance Behaviours in the Cleanup Task (N = 45)

	Mothers *M (SD)*	Fathers *M (SD)*	*t* (44)
Parents' Control Behaviours			
Oriented/guidance control	2.83 (.90)	2.63 (.94)	1.34
Physical coercive control	1.06 (.27)	1.13 (.40)	-.99
Verbal coercive control	1.26 (.38)	1.24 (.58)	.18
Assertive control	2.37 (.75)	2.38 (.78)	-.03
Children's Compliance Behaviours			
Compliance	3.89 (.94)	3.83 (1.02)	.38
Avoidance	1.90 (.94)	1.89 (1.06)	.03
Overt Resistance	1.61 (.76)	1.65 (.83)	-.26
Defiance	1.42 (.64)	1.42 (.62)	.02

Children's Compliance to Their Mothers and Fathers

In order to identify distinct groups of children according to their behaviours in the cleanup task with their mothers and fathers, our first aim in this study, a two-step procedure was performed. First, the standardized scores of the four variables of children's behaviours namely *compliance*, *avoidance*, *overt resistance* and *defiance* that were assessed in the cleanup task were used in a hierarchical cluster analysis integrating Ward's method with a Euclidean distance measure so as to choose the solution with fewer clusters with higher total variance explained. Second, the participants' classification in the clusters was refined using a K-means non-hierarchical cluster analysis for a two-cluster solution, as suggested by Ward's method (Blashfield & Aldenderfer, 1988). A subsequent multivariate analysis of variance (MANOVA) was carried out in order to identify differences between the clusters with respect to the variables used for their identification.

Two behavioural profiles were identified during the cleanup task with the mother, with all four variables contributing significantly to the differentiation of clusters (Table 2A): Compliance, F (1, 46) = 78.41, $p < .001$, Avoidance, F (1, 46) = 45.03, $p < .001$, Overt Resistance, F (1, 46) = 48.03, $p < .001$, and Defiance, F (1, 46) = 27.91, $p < .001$. The first cluster was named *Compliant Profile* (n = 33, 68.8%), and is characterized by the highest scores on the children's compliance scale and the lowest scores on the avoidance, overt resistance and defiance scales. The second cluster was called *Noncompliant Profile* (n = 15, 31.2%) and has the lowest scores on compliance and the highest scores on all other scales. Stability of the cluster solution was supported by a significant multivariate result, Wilk's Λ = .22, F (4, 43) = 38.37, $p < .001$. Table 2A presents MANOVA's univariate results.

Two behavioural profiles were also identified during the cleanup task with the father. As it happened in the mother's case, all four variables contributed significantly to the differentiation of two clusters (Table 2A): Compliance, F (1, 44) = 60.40, $p < .001$, Avoidance, F (1, 44) = 58.87, $p < .001$, Overt Resistance, F (1, 44) = 74.28, $p < .001$, and Defiance, F (1, 44) = 49.90, $p < .001$. The *Compliant Profile* comprised of 37 children (80.4%), with the highest scores on the compliance scale coupled with lowest scores on avoidance, overt resistance and defiance behaviours. Conversely, the *Noncompliant Profile* (n = 9, 19.6%), had the lowest scores on compliance scale together with the lowest scores on the remaining three scales – avoidance, overt resistance, and defiance. This cluster solution was supported by a significant multivariate result, Wilk's Λ = .25, F (4, 41) = 30.33, $p < .001$ (Table 2A for univariate results).

Table 2A

Univariate Differences on Children's Behaviours Between the Identified Behavioural Profiles in the Cleanup Task with Mother and with Father

Child-mother dyads (N = 48)			
	Compliant (Cluster 1) (n = 33)	Noncompliant (Cluster 2) (n = 15)	
	M (SD)	*M (SD)*	*F* (1,46)
Compliance	4.42 (.51)	2.80 (.73)	78.41***
Avoidance	1.44 (57)	2.90 (.92)	45.03***
Overt Resistance	1.25 (.35)	2.44 (.85)	48.03***
Defiance	1.19 (.42)	2.04 (.68)	27.90***
Child-father dyads (N = 46)			
	Compliant (Cluster 1) (n = 37)	Noncompliant (Cluster 2) (n = 9)	
	M (SD)	*M (SD)*	*F* (1,44)
Compliance	4.21 (.60)	2.30 (.92)	60.40***
Avoidance	1.48 (.57)	3.49 (1.11)	58.87***
Overt Resistance	1.33 (.46)	2.97 (.68)	74.28***
Defiance	1.19 (.30)	2.31 (.77)	49.90***

*** $p < .001$. All significant levels reported are two-tailed.

No significant associations were found between children's gender and the two clusters with mother, χ^2 (1) = .96, p = .327, and with father, χ^2 (1) = 1.68, p = .195.

Children's Compliance to Mothers and to Fathers: a Relationship Specific Developmental Task

In order to explore whether preschoolers' compliance is an individual characteristic or a relationship specific developmental task to mothers and to fathers, the following statistical analyses were performed.

First, qui-square test was conducted to explore the associations between the children's behavioural profiles to mothers and to fathers (Table 3A). No significant

association was found between children's behavioural profiles during the cleanup task with their mother and children's behavioural profiles during the cleanup task with their father, χ^2 (1) = .03, p = .872, k = .02, p = .872. About a third of children were integrated in the *Compliant* profile with one parent but not with the other.

Table 3A

Concordance Between Children's Behavioural Profiles During the Cleanup Task with Their Mothers and Their Fathers (N = 45)

	Children's behavioural profiles: Child-father dyads	
Children's behavioural profiles: Child-mother dyads	Compliant (n = 36)	Noncompliant (n = 9)
	n (%)	
Compliant (n = 31)	25 (55.6%)	6 (13.3%)
Noncompliant (n = 14)	11 (24.4%)	3 (6.7%)
	χ^2 (1) = .03, p = .872, k = .02, p = .872	

Second, discriminant analyses were carried out to explore whether mothers' and fathers' parenting control behaviours could distinguish between the two children's behavioural profiles (Table 4A).

The model including the four mothers' control behaviours was able to significantly discriminate the two groups of children, Wilk's Λ = .73, χ^2 (4) = 13.95, p = .007. More specifically, mothers' assertive control, oriented/guided control and verbal coercive control behaviours successfully discriminated the two profiles (Table 4A). Furthermore, classification results show that the model correctly predicted 60% of the children belonging to the *Noncompliant* behavioural profile and 70% of the children integrated in the *Compliant* behavioural profile during the cleanup task with mother. The results of discriminant analyses also revealed that in the case of mothers, assertive control was the most relevant control behaviours that distinguished both profiles, r = .90, followed by oriented/guidance control, r = -.84, and verbal coercive control behaviours, r = .62.

The model including the four fathers' control behaviours was also able to significantly discriminate the two groups of children, Wilk's $\Lambda = .50$, $\chi^2 = 29.56$, $p < .001$. This time, however, all scales – verbal coercive, physical coercive, oriented/guidance and assertive control behaviours – successfully discriminated the two profiles (Table 4A). Classification results revealed that the model correctly predicted 67% of the children belonging to the *Noncompliant* behavioural profile and 100% of the children integrated in the *Compliant* behavioural profile during the cleanup task with father. Correlations between variables and discriminant function also reported that for fathers, the verbal coercive control was the behaviour that most contributed to the differentiation of both profiles, $r = .85$, followed by physical coercive control, $r = .61$, oriented/guidance control, $r = -.51$, and assertive control behaviours, $r = .46$.

Table 4A

Discriminant Analysis of Mothers' and Fathers' Parenting Control Behaviours Among Children's Compliant Behavioural Profile

Child-mother dyads (N = 48)				
Predictor Variables	Standardized discriminant function coefficients	Correlations between variables and discriminant function	Wilk's Lambda	F (1,46)
Assertive control	.59	.90	.766	14.03**
Oriented/guidance control	-.30	-.84	.792	12.10**
Verbal coercive control	.24	.62	.875	6.57*
Physical coercive control	.16	.42	.939	2.99
For the function as whole, Wilk's Λ = .73, χ^2 (4) = 13.95, p = .007.				
Child-father dyads (N = 46)				
Predictor Variables	Standardized discriminant function coefficients	Correlations between variables and discriminant function	Wilk's Lambda	F (1,44)
Verbal coercive control	.85	.85	.573	32.80***
Physical coercive control	.13	.61	.729	16.39***
Oriented/guidance control	.18	-.51	.788	1.85**
Assertive control	.62	.46	.822	9.54**
For the function as whole, Wilk's Λ = .50, χ^2 (4) = 29.56, p <.001.				

*p < .05; ** p < .01; *** p < .001. All significant levels reported are two-tailed.

Discussion

The current research was designed to explore preschoolers' behavioural compliance to parental demands under the theoretical assumption that compliance is relationship specific, rather than an individual characteristic. To this end, 49 three-year-olds were observed interacting with both their mothers and their fathers in two independent sessions in the context of a cleanup paradigm.

Preliminary findings showed that both mothers and fathers behaved similarly during the cleanup task with their children in two independent sessions (i.e., oriented/guidance control, physical coercive control, verbal coercive control and assertive control). Likewise, children's behaviours (i.e., compliance, avoidance, overt resistance and defiance) in the cleanup task with their mothers or their fathers did not differ. Therefore, any differences emerging in terms of children's behaviour during the two independent sessions and/or parental control behaviours associated with those could not be attributed to *a priori* differences between sessions.

These accounts guided our first aim by identifying distinct children's behavioural profiles according to their compliance behaviours during a cleanup task with the mother and with the father. Two different children's behavioural profiles in the cleanup task with their mother and their father were identified: (1) a *Compliant Profile* and (2) a *Noncompliant Profile*. The *Compliant Profile* characterized children with higher compliance to directives as well as lower avoidance, lower overt resistance and lower defiance, with both mothers and fathers. This compliant profile reflected children's active and enthusiastic involvement in the task directed by the parents and was often characterized by self-initiated behaviour and self-regulated compliance. In addition, this profile contained the majority of the sample in both cases (with mothers and fathers), which goes in line with previous studies that revealed that preschool children are more likely to engage in compliant, rather than in noncompliant behaviours (Braungart-Rieker et al., 1997; Kochanska & Aksan, 1995; Kochanska et al.,2010; Kuczynski & Kochanska, 1990). This result was a methodological innovation from previous studies that analyzed compliance in a dichotomous nature: situational versus committed compliance. The identification of two different children's behavioural profiles also validated the pertinence of analyzing children's behaviours in a compliance situation simultaneously rather than individually as it has been done most frequently in the past.

Our second aim concerned the preschoolers' compliance as a relationship specific developmental task to mothers and to fathers rather than an individual characteristic. Thus, we first examined the relationship between children's behavioural profiles during a cleanup task with their mother and with their father. As anticipated, our results revealed no significant associations between children's behavioural profiles with both parents. Therefore, children that are compliant with their mother are not necessarily compliant with their father. Second, we analyzed the associations between children's behavioural profiles and their mothers' and fathers' behaviours and found evidence that parental control behaviours affected their children's compliance. Both results, in our view, provide support to our theoretical assumption that compliance during preschool years is not necessarily and solely a matter of children's characteristics but is, to a great extent, relationship specific.

In addition, we explored the differences in mothers' and fathers' parenting control behaviours and the impact on children's compliance profiles, with this being our third aim. The link between parenting behaviours and children's compliance was evidenced by a meta-analytic review (Karreman et al., 2006) and was replicated in our study. Specifically, though mothers' and fathers' positive control behaviours were found to be positively associated with compliance behaviours, as in previous research (Braungart-Rieker et al., 1997; Crockenberg & Litman, 1990; Kochanska & Aksan, 1995; Smith et al., 2004), two sets of differences between them emerged. The first set relates to the negative types of control. All four fathers' control behaviours discriminated the compliant from the noncompliant profiles, also replicating that negative types of control (physical coercive control, verbal coercive control and assertive control) are associated with noncompliance (Braungart-Rieker et al., 1997; Campbell et al., 1991; Colman et al., 2006; Crockenberg & Litman, 1990; Donovan et al., 2000; Kochanska & Aksan, 1995; Smith et al., 2004). In the case of mothers' control behaviours, physical coercive control did not distinguish the compliant from the noncompliant profiles. Bearing in mind that there were no group differences in the quantity of physical coercion used by mothers and fathers in this sample, it seems that the use of physical coercion by mothers may not affect whether children actually comply. Caution regarding this interpretation is advised, since the level of physical coercion in this low-risk sample was very low and therefore this result warrants replication. The second set of differences between mothers and fathers is related to the type of control behaviours that have a greater impact on the discriminant function that differentiates the compliant from the noncompliant profiles. For fathers, the

use of verbal coercive control was the most relevant behaviour that distinguished both profiles followed by physical coercive control, oriented/guidance control and finally assertive control. In the case of mothers, assertive control was the behaviour that most contributed to the differentiation of compliant from noncompliant profiles, followed by oriented/guidance control and verbal coercive control. Taking into consideration these two set of differences, it seems that children are more affected by coercive control behaviours when fathers use them, than when mothers do so. Previous investigations have pointed to differences in fathers' behaviours during tasks that required the child to comply with a rule. Power et al. (1994) found that fathers were more direct in their requests for children's compliance, whereas mothers tended to use less direct forms of control and to soften their requests by using bargaining, affection and justification. Volling et al. (2002) also revealed that fathers, in general, asserted greater pressure for their children to comply than did mothers. Nevertheless, we have not found these differences in our study, but uncovered that, when mothers' and fathers' behaviours are similar, fathers' coercive control behaviours have a greater detrimental impact on children's compliance. When fathers use more verbal and physical coercion (i.e., direct commands, threats or criticize the child's behaviour and physical restraint or physical punishment), both characterized by the presence of anger and/or irritation, and more assertive control behaviours (i.e., controlling the child in an assertive way but without anger or irritation: removing the toys from the child's hand; giving direct commands, directives and prohibitions) and less orientation/guidance control behaviours, this leads to children's noncompliance. In turn, in the case of mothers, being more assertive, using more verbal and physical coercion, and exerting less orientation/guidance (i.e., less playful behaviour and affectively positive) is associated with noncompliance.

Recently, Higgins (2008) also highlighted differences in mothers' and fathers' limit-setting behaviours and its impact on children's compliance. Mothers with a developmentally appropriate guidance style tended to have children who were more compliant and less defiant, which replicates findings from several earlier studies (Calkins & Johnson, 1998; Dix et al., 2007; Kochanska et al., 1995). However, developmentally appropriate fathers have no impact on toddler compliance or defiance. These data suggested a different function of parenting for mothers and fathers; namely, mothers' positive parenting has positive effects on toddler compliance, but fathers parenting only effects on the children when it is a negative style (either permissive or controlling), confirming our results.

Even though our results are encouraging in supporting a relationship specific nature of preschoolers' compliance, this study is cross-sectional. To further the research on the dyadic developmental nature of compliance, future research should employ a longitudinal design that would analyze the relational context earlier than age three and that would also integrate other dyads such as child-teacher, or child-sibling pairs. Also, we did not assess children's individual characteristics (e.g., temperament) that might moderate or mediate relations between parenting and compliance.

The findings reported expand previous research by focusing on children's compliance behaviours through the identification of children's behavioural profiles in the cleanup task with their mother and their father. Our results also highlight a relationship specific nature of preschoolers' compliance rather than exclusively a matter of children's characteristics and also reveal the differences between mothers' and fathers' parenting behaviours in the two different children's behavioural compliance profile in preschool years. The impact of the mothers' and the fathers' parenting on children's compliance appears to be a complex process that progresses along distinct paths. This result has particular implications for subsequent research, suggesting the need for fathers to be included in studies of children's compliance and the importance of exploring the early parent-child relationships as a significant contributor to the development of parent-child cooperation and children's compliance.

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CHAPTER 3

Parenting Control and Preschoolers' Compliance: Is Attachment a Mediator?

> "A positive, reciprocal interpersonal set between parent and child, which renders the child ready, receptive, and positively motivated to respond to parental socialization… and internalize parental standards and values may be the result of a long-term relationship." (Kochanska, 1993, p. 332)

Abstract

Objective: The main aim of this study was to investigate the mediating role of attachment representation in the relationship between parenting control and children's compliance during a cleanup task with their mothers and their fathers. **Method:** Forty-nine children aged 3 years old (28 boys, 57.1%) were observed with each parent during two independent sessions in a cleanup task (e.g., Kochanska & Aksan, 1995, 2008) where children's compliance and parents' control behaviours were assessed. Children's attachment representation was assessed in the *Attachment Story Completion Task* (ASCT; Bretherton, Ridgeway, & Cassidy, 1990). **Results:** Mothers' and fathers' positive parenting control behaviours during cleanup task strongly predicted children's compliance. Children's attachment representation predicted children's compliance with the mother but not with the father. However, attachment representation did not mediate the relationship between mothers' positive parenting control and children's compliance. **Conclusion:** This study furthers the understanding of mothers' and fathers' parenting control behaviours and the role of attachment representation in the development of children's compliance in the preschool years. Our results also add to a limited but growing body of research that focuses on attachment as a mediator in the relationship between parental variables and child social-emotional outcomes.

Keywords: attachment representation, parenting control behaviours, preschoolers' compliance, parent-child relationship

Introduction

The quality of the parent-child relationship seems to provide an important context for both the development of attachment and preschoolers' emerging ability to comply with parental requests (Barry & Kochanska, 2010; Borelli et al., 2010; Cassidy, 1994; Gilissen, Bakermans-Kranenburg, van IJzendoorn, & van der Veer, 2008; Kochanska, Barry, Stellern, & O'Bleness, 2009). Within this conceptual framework, Thompson (1994, 2006) suggests that the central parental tasks during early preschool years is to manage and guide their children's emotional experiences, to formulate rules for them to comply with and provide them with the opportunities to internalize these rules (Grolnick & Farkas, 2002). Given the importance of the parent-child relationship for children's compliance, the present study aims at understanding the role of attachment representation in the link between parenting control and children's compliance. Though previous research has supported that children's compliance to the mother and to the father is independent and tends to reflect the quality of the parents' control behaviours in the cleanup task (Carvalho, Martins, Martins, Osório, & Soares, submitted), an approach that combines both parenting control and attachment relationship to understand children's compliance development is now in demand.

The majority of studies on parenting have documented that parents can respond to children's behaviour using positive control – characterized by specific attempts of encouraging, teaching, giving other choices and guiding the children's behaviour – or negative control – by setting limits on the autonomous behaviour in a punitive and coercive way or consistently yielding to the children's demands (Karreman, van Tuijl, van Aken, & Dekovic, 2006, for a meta-analysis; Omer, 2001). When parents' responses are more positive, children are more likely to develop compliance. Contrastingly, negative control has consistently been found to be associated with noncompliant behaviours (Belsky, Rha, & Park, 2000; Colman, Hardy, Albert, Raffaelli, & Crockett, 2006; Higgins, 2008; Karreman et al., 2006).

Sensitivity in parenting involves being warm and responsive to children's developmental needs, as well as providing appropriate responses to children's emotions. Thus, it is one of the main features of both compliance literature and research on parenting that is derived from the attachment theory. Several empirical studies have found that mothers and fathers who are sensitive in their parenting behaviours are more likely to have children who comply with their requests (Colman et al., 2006; Crockenberg &

Litman, 1990; Dix, Stewart, Gershoff, & Day, 2007; Kochanska, Coy, & Murray, 2001; van der Mark, Bakermans-Kranenburg, & van Ijzendoorn, 2002; Volling, Blandon, & Gorvine, 2006), or with the requests of other caregivers (Feldman & Klein, 2003; Wahler & Meginnis, 1997). This, in turn, lays the foundations for positive social development in the preschool years (Kaufmann et al., 2000).

Even though the majority of the literature to date has focused on mother-child relationships, some research has begun to address paternal sensitivity and parenting behaviours. It is now known that fathers are likely to play a unique role in their children's socialization process and the regulation of emotions (Parke & Buriel, 2006; Parke & McDowell, 1998) as well as the development of autonomy in problem-solving tasks (Easterbrooks & Goldberg, 1984). In what specifically concerns children's compliance, differences in mothers' and fathers' limit-setting behaviours have been described (Higgins, 2008). Thus, mothers with a developmentally appropriate guidance and positive style tended to have children who were more compliant and less defiant, which replicates findings from earlier studies (Calkins & Johnson, 1998; Dix et al., 2007; Kochanska, Aksan, & Koenig, 1995). Unexpectedly, no effect was found for fathers' developmentally appropriate guidance style on toddler compliance or defiance. This may suggest a differential effect of parenting for mothers and fathers (Barry & Kochanska, 2010; Diener, Mangelsdford, McHale, & Frosch, 2002; Grossmann et al., 2002; Grossmann, Grossmann, Kindler, & Zimmermann, 2008; NICHD Early Child Care Research Network, 2000; Parke & Buriel, 2006; Spinrad et al., 2007) and leads us to explore the potential similarities and differences between maternal and paternal control behaviours.

The quality of children's attachment to their parents in infancy has been associated with individual differences in parental sensitivity (Bakermans-Kranenburg, van Ijzendoorn, & Juffer, 2003; De Wolff & van Ijzendoorn, 1997; Steele, Steele, & Johansson, 2002; Thompson, 2006). Parental sensitivity is, therefore, also central to the attachment theory (Bowlby, 1969/1982), thus justifying research that examines parenting behaviour and children's compliance from an attachment perspective.

Previous studies have demonstrated that secure attachment organization to the mother (Strange Situation Procedure) predicted more compliant and cooperative behaviours (Londerville & Main, 1981; Matas, Arend, & Sroufe, 1978; Stayton, Hogan, & Ainsworth, 1971). In addition, Kochanska and Aksan (1995) found that mothers and fathers who were warm, responsive, guiding and shared mutual positive affect with their children – hallmarks of secure attachment relationships –, were more likely to have

children that engaged in compliance and the internalization of parental demands and expectations. In contrast, insecure children may be less easily socialized and less prone to accept parental requests and more likely to engage in negative behaviour, even in relatively undemanding situations that require cooperation, compliance and shared goals. Likewise, empirical findings have showed that children who were securely attached to their mothers and fathers as infants were more likely to be more socially competent, willing to comply and ego-resilient in the preschool years, compared to their insecure attachment counterparts (Grossmann & Grossmann, 2000; NICHD Early Child Care Research Network, 2004; Weinfield, Sroufe, Egeland, & Carlson, 2008).

Kochanska, Aksan and Carlson (2005) also reported that attachment security in infancy was strongly associated with higher receptive cooperation in broad ranging contexts. Receptive cooperation includes children's social responsiveness and cooperation with their parents in multiple settings that encompass discipline situations as well as wide ranging typical interactive contexts. Furthermore, in infant-mother dyads, secure attachment was strongly associated with infants' receptive cooperation. Higgins (2008) also examined the effects of infant-parent attachment and parental limit-setting behaviours on toddler compliance. The data showed that toddlers with a secure attachment organization were marginally more likely to be compliant with their mothers than toddlers with an insecure attachment. Overall, though, parental limit-setting behaviours seemed to be more predictive of toddler compliance behaviour than attachment. Conversely, the study by Volling, Blandon and Kolak (2006) indicated that toddler attachment security to both mothers and fathers was important in predicting committed compliance to mothers. Recently, Kochanska et al. (2010) reported that early attachment security to mothers significantly amplified the link between children's willing stance to mothers and socialization outcomes. In contrast, children's secure attachment with their mothers in the first year did not *per se* predict children's willing, cooperative stance toward the mother in the second year. These authors suggested that early attachment security might indicate a stable, positive, and harmonious ecological context of the family. Those features of the socialization context, rather than security *per se*, may underlie the particular effectiveness of future socialization processes, including children's willing stance. These empirical studies inform the debate on the role of early attachment in socialization outcomes, and in particular, children's compliance and cooperation with the parents in multiple settings.

Parenting sensitivity in infancy relates to secure attachment, which, in turn, has been associated with preschool-aged children's early internalized development and positive social skills (Laible & Thompson, 2000; Steelman, Assel, Swank, Smith, & Landry, 2002). According to Thompson's review (2008), secure attachment organization generally lays the foundation for future dyadic cooperation between parents and children in the preschool years, highlighting the importance of more research. Interestingly, however, no empirical studies have addressed how children's attachment representation at 3 years of age may be concurrently linked to compliance. The preschool years represent a period when children's relationship with each parent has stabilized into a predictable dyadic partnership and when the challenge of balancing needs for autonomy and dependence is predominant (NICHD Early Child Care Research Network, 2004). In particular, security of attachment in the beginning of the preschool years is expected to be associated with children's compliance and willingness to cooperate with parental demands and participate in the socialization process. This promotes a smooth transition to the goal-corrected partnership (Bowlby, 1969/1982), in which parents and children mutually negotiate demands and goals (Bretherton, Golby, & Cho, 1997; Kochanska et al., 2005; van Ijzendoorn, 1997). Furthermore, during early preschool years children begin to use symbolic forms of mental representation and organize knowledge conceptually (Bretherton, Grossmann, Grossmann, & Waters, 2005; Bretherton & Munholland, 2008). Thus, attachment can be better assessed by using attachment narratives through story completion methods. The narrative approach reflects Bowlby's conception of the child's representations as internal working models of attachment (Bretherton, 2008; Gloger-Tipplet & Koenig, 2007; Miljkovitch, Pierrehumbert, Bretherton, & Halfon, 2004; Pierrehumbert et al., 2009).

Based on this conceptual and empirical review of children's compliance in relation to parenting and attachment, we addressed the possible mediating role of attachment representation in the existing link between parenting control and children's compliance. The study of socialization processes has increasingly focused on moderators and mediators (Eisenberg, 2006); however, relatively few studies have considered attachment as a potential moderator or mediator in children's social development. We expected that parents' control behaviours with their 3-years-olds would reflect the quality of the parent-child exchanges that the children have been exposed to, thereby, influencing their attachment representation. Consequently, we also anticipated that this attachment

representation would have an impact on the children's ability to comply with the caregiver, as has been demonstrated in many of the studies reviewed above.

In summary, several hypotheses were tested in this study, specifically, (i) mothers' and fathers' positive parenting control would predict higher levels of children's compliance; (ii) children's secure attachment representation would predict higher levels of children's compliance, in child-mother and child-father dyads; (iii) associations would emerge between mothers' and fathers' positive parenting control and secure attachment representation; (iv) attachment representation would play a mediating role in the relationship between parenting control and children's compliance.

Method

Participants

The initial sample consisted of 52 intact families (infant and both parents) recruited from childcare centres in a large city in the North of Portugal. All families participated in a larger longitudinal study on child development since their infants were 10 months old in home visit and 3 years of age in laboratory visits. However, three of the families did not participate in the third year assessment for different reasons (one family refused, one could not be traced, and the third one was unable to participate at the time). Thus, data for the present study were drawn from observations of forty-nine children (28 boys, 57.1%), assessed with their mothers and their fathers (separately), when aged between 36 and 40 months (M = 37.78, SD = .99). Twenty-four children (49%) were singletons or had younger siblings. The remainder (51%) had one or two older siblings. Most parents had higher education qualifications and came from an upper-middle socioeconomic background. Mothers' and fathers' average ages were 33.45 years, SD = 4.76 and 33.68 years, SD = 4.60, respectively. All participants were Caucasian and had Portuguese as their first language. Additionally, recording problems prevented the inclusion of four dyads in the statistical analyses (three child-father and one child-mother dyads).

Procedure

The recruitment of participating families was done through the directors of several childcare centres who handed the families an invitation letter with the aims and the overall procedure of the longitudinal project. Families who showed interest were contacted by the research team. They were assessed at two time-points: 10 months old for the home visit and 3 years old for the laboratory visits. Data for the current study were drawn from observing the children at three years old.

Each child-mother dyad attended one laboratory session with the approximate duration of 1½ hours, which included a 15 minute break. During this session, child-mother interactions were observed in a *cleanup paradigm* (e.g., Kochanska & Aksan, 1995, 2008). In addition, children were administered the *Attachment Story Completion Task* (Bretherton, Ridgeway, & Cassidy, 1990) by the researcher. Within two weeks of the first session, children returned to the laboratory with their fathers for the cleanup task. All procedures were videotaped for subsequent coding and took place in a university laboratory setting that composed of two adjacent rooms separated by a two-way mirror.

Measures

Children's Attachment Representation.

The *Attachment Story Completion Task* (ASCT; Bretherton et al., 1990) was used to evaluate children's attachment representation. This procedure involves a set of five story stems whose themes have been designed to elicit the child's representations and feelings relating to their attachment experience. The story beginnings were presented with a set of five bendable family dolls (a mother, a father, a grandmother and two child figures of the same sex as the target child, with one being older and one younger) and various simple props appropriate to each story stem (e.g., miniature furniture, cups, plates, etc.). The play context allowed the child to express their narrative in a manner that was not solely reliant on language.

The story stems were individually administered in a fixed order, requiring approximately 20 to 30 minutes per child to complete: a *birthday party story* (to facilitate the development of rapport and to ensure the child's understanding of the task – not coded); a *spilled juice story* (parent as authority); a *hurt knee story* (parent as comforter); a *monster in the bedroom story* (parent as protector); a *departure of parents story* (separation of child from parent); and a *reunion story* (reunion of child with parent). Each story beginning was acted out and narrated by the experimenter with animation; the child

was then asked to show and tell what happened next (for more detailed instructions see Bretherton et al., 1990; Bretherton & Oppenheim, 2003). The procedure of ASCT was videotaped and later transcribed.

Narrative coding. Transcripts were coded based on the Düsseldorf Coding System (DCS; Gloger-Tipplet & Koenig, 2002/2006). Narratives were coded in order to capture the child's representations of parents and self, as well as the child's behaviour with the examiner during the narrative assessment. The analysis of the attachment story completion task was based on videos and coupled with complete transcripts of play actions and verbal narratives. The aim of the data analysis was to assign each child with a five-point attachment security score both for each single story and for all stories together, in order to classify the predominant attachment strategy into (A) *secure attachment representation,* (B) *insecure-avoidant attachment representation and* (C) *insecure-ambivalent attachment representation*, and also to identify *attachment disorganization*. This coding system follows the five main steps described below. First, each story was coded according to the *basic coding markers for all stories* (e.g., anger in the child, anger in the caregiver, inappropriate/unclear speech, prolongation of the narrative/diversion from attachment topic, bizarre/incoherent event, weak or strong negative event, avoidance of story issue and producing a narrative, maximization, contradiction, and mental block/mental constriction). Each story was then coded according to *specific coding markers for each story* (e.g., new juice, punishment without violence, punishment with violence, exclusion, self-reproach, and fear of reproach or discipline from the caregiver – from the *spilled juice story*; immediate care, comforting by words or actions, later care of knee, no care of knee, and self-reproach – from the *hurt knee story*; actively destroying/removing monster, empathetic alternative explanation, rejection by parent, rejection by child, order/instruction by parent, child is still scared, and parents are still scared/incompetent – from the *monster in the bedroom story*; friendly interaction with grandmother, sadness in child but comfort, undoing separation, deactivation, worries about parents, and sadness in child without comfort/separation anxiety – from the *separation of parents story*; greeting/welcome delight, greeting with body contact, greeting verbally, communication of feelings and experiences, no greeting, delay by irrelevant actions, worries about parents, and obedience – from the *reunion of parents story*). Second, it was necessary to take diagnostic notes for each story (e.g., behavioural observation of the child, relevant events and conditions during the administration that

may have influenced the coding and classification). Third, an attachment security score (from 0 to 4) was assigned for each story according to the specific coding markers and the collection of diagnostic notes. Fourth, the classification of the dominant attachment strategy was reached by averaging the scores obtained for each story. Fifth and finally, for the final coding and classification it was important to have an overview of all the steps in the analysis and not only follow an arithmetic rule. In particular, the diagnostic notes indicated in which context the various coding categories had to be interpreted and which attachment strategy was dominant across all stories (Gloger-Tipplet & Koenig, 2002/2006). In general terms, children who used an imaginative, appropriate and coherent sequence of play events which were happily resolved in the end, who used appropriate handling of toys, who described adults as competent figures and addressed emotions adequately, were coded as possessing a *secure attachment representation*. Children who used poor and unresolved verbal and non-verbal sequences of play, who used poor emotions on attachment-related stories, who either ignored or responded inappropriately to prompts and who denied and avoided separation were classified as displaying an *insecure-avoidant attachment representation.* Children who showed a tendency to maximize the attachment-relevant themes, who created narratives without a clear and organized ending and who focused on the negative aspects of the stories were classified as having an *insecure-ambivalent attachment representation.* Children who engaged in bizarre play behaviours, including narratives with extremely negative content (e.g., violence, death, chaos, splitting up of the family at the end), mental blocking, freezing and constricted narrative because of fear were classified in the *attachment disorganization* category.

All the narratives were independently coded by three trained judges, who had previously achieved acceptable reliability in the Düsseldorf Coding System (DCS; Gloger-Tipplet & Koenig, 2002/2006). Mean Cohen's kappa of reliability measure for secure and insecure attachment representations of the three coders was .87.

Children's Compliance Behaviours.

The *cleanup task* (e.g., Kochanska & Aksan, 1995, 2008) was used to assess children's compliance behaviours with their mothers and their fathers. After a 5-minute parent-child toy play period, parents were asked to instruct their children to pick up the toys and place them into a large box. The task ended when all the toys had been placed in the box or when the parent indicated they had finished it (M = 2.66 min, SD = 1.83, in the

child-mother task; M = 3.12 min, SD = 1.84, in the child-father task; t (44) = -1.15, p = .257).

The coding system for children's compliance behaviours was adapted from previous research (Crockenberg & Litman, 1990; Klimes-Dougan & Kopp, 1999; Kochanska & Aksan, 2008; Kopp, 1989; Kuczynski & Kochanska, 1990; NICHD Early Child Care Research Network, 1998, 2004; Stifter, Spinrad, & Braungart-Rieker, 1999) and consisted of four scales that were assessed on a 5-point *Likert* scale, every 60 seconds: *compliance*, *avoidance*, *overt resistance* and *defiance*. *Compliance* was described as children's willingness to comply with the parental directives, reflecting the children's orientation to the task throughout the interaction. *Avoidance* was observed when the children tended to be reluctant and ignored the task: continuing to play with toys, ignoring their parent's requests, moving away or hiding to avoid having to comply, diverting attention to the environment or other toys, while maintaining a non-angry or non-distressed affect. *Overt Resistance* was exhibited when the children tended to refuse overtly: when the children were unwilling to comply with parental demands, negotiated in a non-aversive manner by trying to change the parent's directive or reach a new one. Through *defiance* children did not follow directions and answered with an angry or whiny tone of voice and/or displayed aggressive behaviours: poorly controlled anger, cried and whined, kicked or threw toys, had a temper tantrum and overtly expressed frustration through body language and voice.

Final scores on each dimension resulted from the average of all 60-second segments.

A random set of 30% of the sample was independently coded by four previously trained researchers. Cohen's kappa yielded excellent inter-rater reliabilities (.97 for compliance, .90 for avoidance, .94 for overt resistance and .93 for defiance).

Parents' Control Behaviours.

The coding system for parents' control behaviours was also adapted from previous work (Crockenberg & Litman, 1990; Kochanska & Aksan, 2008; Kopp, 1989; Kuczynski & Kochanska, 1990; NICHD Early Child Care Research Network, 1998, 2004; Stifter et al., 1999). This system consisted of four scales of parental control behaviours to elicit their children's compliance, assessed on a 4-point *Likert* scale, every 60 seconds: *physical coercive control*, *verbal coercive control*, *assertive control* and *oriented/guidance control*. Through *physical coercive control* parents controlled the children's behaviour in

a coercive and forceful manner associated with anger or irritation. This control strategy involved the use of any physical intervention, physical restraint (e.g., taking the object out of the child's hand) or physical punishment. *Verbal coercive control* was observed when parents controlled the children's behaviour for the task with direct commands (e.g., "Clean up the toys", "Stop playing with the toys"), threats (e.g., "Do not play with this toy unless") or criticised the children's behaviour (e.g., "This is not the way we clean up"), associated with anger or irritation from the parental figure. *Assertive control* was exhibited when parents physically controlled the children's behaviour in an assertive way, that is, without anger or irritation (e.g., the parent held the child's hand and/or the child firmly; moved the child decisively; blocked the child's ongoing movement away from the task and removed the toys from the child's hand). Verbally, parents gave direct commands, directives and prohibitions in a clear, precise and assertive way and without anger or irritation. With *oriented/guidance control* parents controlled the children's behaviour in a gentle, subtle or playful manner. Parents tended to orient the children on the task by using: polite suggestions; positive language with the children in a calm, matter-of-fact manner; positive reinforcements; hints; playful comments; explanation of the appropriate behaviour; and turned the task into a game (e.g., singing, clapping, throwing the toys playfully into the basket, suggesting loading and dumping the beach bucket to clean up the toys, suggesting cleaning the toys by colour, shape or categories, holding the child's face gently/softly, tapping the child on the shoulder for attention). Parent's behaviour was playful, encouraging and affectively positive, with parental control being understated in play-like and interactive quality.

Final scores on each dimension resulted from the average of all 60-second segments.

A random set of 30% of the sample was independently coded by four previously trained researchers. Cohen's kappa was .90 for physical coercive control, .86 for verbal coercive control, .80 for assertive control and .88 for oriented/guidance control.

Parents' control behaviours were reduced to a single component, identical for mothers and fathers, using Principal Components Analysis followed by an *Oblimin* Rotation. In the case of mothers, the component was labelled *mothers' positive parenting*, and explained 59.1% of variance (eigenvalue 3.08). All variables but *oriented/guidance control* (-.91) loaded positively on the component (*assertive control*, .80; *verbal coercive control*, .74; and *physical coercive control*, .53). For fathers, the component was labelled *fathers' positive parenting*, and explained 60.8% of variance (eigenvalue 3.15). Again, all

variables but *oriented/guidance control* (-.87) loaded positively (*verbal coercive control*, .81; *physical coercive control*, .74; and *assertive control*, .64). Thus, the resulting components refer to the parental behaviour characterized by specific attempts of teaching, encouraging and guiding the child's behaviour in the cleanup task, in the absence of anger, harshness, criticism, and excessive or coercive control.

Results

Descriptive Statistics of Compliance, Parenting Control and Attachment

Descriptive statistics for all relevant study variables – children's compliance profile, mothers' and fathers' positive parenting control behaviours, and children's attachment representation in child-mother and child-father dyads – are presented in Table 1B. Children's compliance versus children's noncompliance profiles were obtained through cluster analysis as described by Carvalho and colleagues (submitted).

Table 1B

Children's Compliance Profile, Parenting Control and Children´s Attachment Representation in Child-Mother and Child-Father Dyads

	Child-mother dyads (*N* = 48)			
	Compliant children (*n* = 33)		Noncompliant children (*n* = 15)	
	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)
Mothers' positive parenting control	14.00 – 19.00	16.85 (1.41)	11.33 – 18.00	14.80 (1.97)
Children's attachment[a]	*n* (%)		*n* (%)	
Secure attachment	23 (85.2%)		4 (14.8%)	
Insecure attachment	10 (47.6%)		11 (52.4%)	
	Child-father dyads (*N* = 46)			
	Compliant children (*n* = 37)		Noncompliant children (*n* = 9)	
	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)
Fathers' positive parenting control	13.75 – 18.83	16.56 (1.42)	10.50 – 18.83	13.23 (2.47)
Children's attachment	*n* (%)		*n* (%)	
Secure attachment	22 (88.0%)		3 (12.0%)	
Insecure attachment	15 (71.4%)		6 (28.6%)	

[a] This resulted in a sample of 27 children (55.2%) with secure attachment; 11 children (22.4%) with insecure-avoidant attachment and 11 children (22.4%) insecure-ambivalent attachment. As cell sizes were too small for a statistical analysis using all attachment classifications, we used the major distinction between secure (*n* = 27, 55.1%) and insecure attachment (*n* = 22, 44.9%) for group comparisons.

Mothers of the compliant group (*n* = 33, 68.7%) obtained the highest score on positive parenting control behaviours, *M* = 16.85, *SD* = 1.41, *t* (46) = - 4.08, *p* < .001. Qui-square test was also conducted to explore the associations between the children's behavioural profiles during the cleanup task with their mother and children's attachment

representation. Significant associations were found between children's behavioural profiles and children's attachment representation, χ^2 (1) = 7.76, p = .01. More than half of the children who were placed in the group exhibiting compliance with the mother had secure attachment representation (85.2%), and most of those included in the noncompliance profile had insecure attachment representation (52.4%).

Fathers of the children's compliant profile (n = 37, 80.4%) also showed a higher score on positive parenting control, M = 16.56, SD = 1.42, t (44) = - 5.41, p < .001. The association test between children's behavioural profiles during the cleanup task with their father and children's attachment representation was not significant, χ^2 (1) = 1.99, p = .264. More than half of the children who were placed in the group exhibiting compliance with the father had secure attachment representation (88.0%) whereas only six of children in the noncompliant group (28.6%) had insecure attachment representation.

Children's Attachment Representation as a Mediator in the Relationship Between Mothers' Positive Parenting Control and Children's Compliance

We then addressed the issue of whether children's attachment representation may mediate the association between mothers' positive parenting control and children's compliance profile. Logistic regression analyses were carried out following the guidelines suggested by Baron and Kenny (1986) to test whether: a) mothers' positive parenting control (independent variable) predicted children's compliance profile (dependent variable); b) children's attachment representation (mediator) predicted children's compliance profile (dependent variable); c) mothers' positive parenting control (independent variable) predicted children's attachment representation (mediator) (Figure 1).

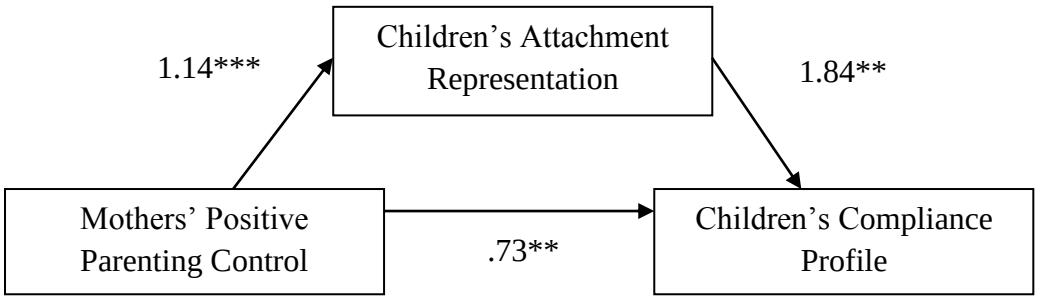

Figure 1. Children's Attachment Representation as a Mediator in the Relationship Between Mothers' Positive Parenting Control and Children's Compliance Profile.
Values are standardized regression coefficients, *B.* Solid lines represent significant effects. *** $p < .001$; ** $p < .01$.

The first logistic regression revealed that mothers' positive parenting control significantly predicted children's compliance, χ^2_{Wald} (1) = 9.38, $p = .002$. The significant results of the second logistic regression showed the effect of children's secure attachment representation on children's compliance, χ^2_{Wald} (1) = 7.02, $p = .008$. The third logistic regression attested that mothers' positive parenting control significantly predicted children's attachment representation, χ^2_{Wald} (1) = 12.49, $p = .001$. These significant results lead us to a final regression model to test the mediational role of children's attachment representation on in the relationship between mothers' positive parenting control and children's compliance profile (Table 2B).

Table 2B

Final Regression Model: Mediational Role of Children's Attachment Representation in the Relationship Between Mothers' Positive Parenting and Children's Compliance Profile

Step and Predictor	χ^2_{Wald}	*B* (SE)	OR	95% CI
Step 1 (df 1)	8.26**			
Mothers' positive parenting control		0.73** (0.24)	2.07	[1.30, 3.30]
Step 2 (df 1)	3.60*			
Mothers' positive parenting control		0.62* (0.27)	1.86	[1.09, 3.19]
Children's attachment representation		0.62 (4.61)	0.54	[0.10, 2.99]

Note. OR = odds ratio; CI = confidence interval.
** $p < .01$; * $p < .05$.

In the final model, children's attachment representation did not mediate the relationship between mothers' positive parenting control and children's compliance profile, χ^2_{Wald} (1) = .50, p = .480, B = 0.62, 95% CI [0.10, 2.99]. The variable of children's attachment representation loses its predictive power in the child-mother interaction when the role of mothers' positive parenting control is tested simultaneously. However, mothers' positive parenting control was a significant predictor of children's compliance, χ^2_{Wald} (1) = 5.11, p = .024, B = 0.62, 95% CI [1.86, 3.19].

Children's Attachment Representation as a Mediator in the Relationship Between Fathers' Positive Parenting Control and Children's Compliance

The three preconditions and analytical strategy for testing a mediation model (Baron & Kenny, 1986) were again carried out to test whether children's attachment representation was a mediator in the relationship between fathers' positive parenting control and children's compliance (Figure 2).

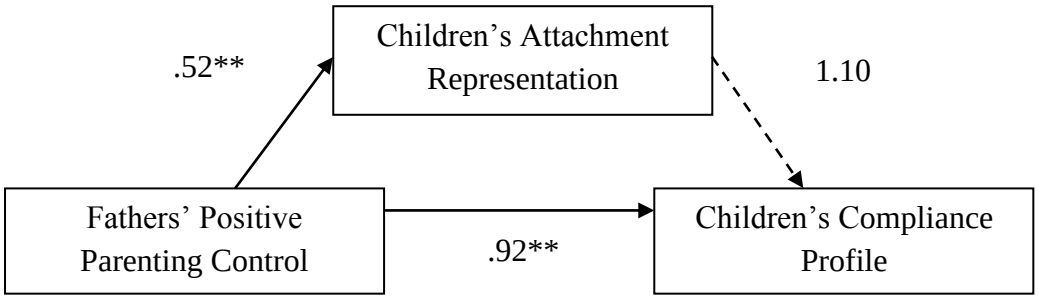

Figure 2. Children's Attachment Representation as a Mediator in the Relationship Between Fathers' Positive Parenting Control and Children's Compliance Profile.
Values are standardized regression coefficients, B. Solid lines represent significant effects and dashed lines represent nonsignificant effects. ** $p < .01$.

The first logistic regression revealed that fathers' positive parenting control predicted children's compliance, χ^2_{Wald} (1) = 9.03, p = .003. The second logistic regression revealed that children's attachment representation was not a significant predictor of children's compliance profile, χ^2_{Wald} (1) = 1.89, p = .169. The third logistic regression showed that fathers' positive parenting control significantly predicted children's attachment representation, χ^2_{Wald} (1) = 6.75, p = .009. As can be seen, the

second logistic regression did not allow testing of our final model which explored the mediating role of children's attachment representation in the relationship between fathers' positive parenting control and children's compliance profile. As a result, we examined the contribution of fathers' positive parenting control and children's attachment representation as direct predictors of children's compliance (Table 3B).

Table 3B

Predictions of Children's Compliance Profile in Child-Father Dyads

Step and Predictor	χ^2_{Wald}	*B* (SE)	OR	95% CI
Step 1 (df 1)	6.14*			
Fathers' positive parenting		0.97** (0.35)	2.65	[1.35, 5.22]
Children's attachment representation		0.44 (1.12)	1.55	[0.17, 13.84]

Note. OR = odds ratio; CI = confidence interval.

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

The regression logistic model was significant, χ^2_{Wald} (1) = 14.47, $p < .001$. Fathers' positive parenting control was the only significant predictor of children's compliance: fathers' higher positive parenting scores were associated with children's compliance profile, $B = 0.97$, $p = .005$, 95% CI [1.35, 5.22]. In contrast, children's attachment representation did not significantly predict children's compliance, $B = 0.44$, $p = .696$, 95% CI [0.17, 13.84].

Discussion

The ability to comply with parental requests is a major developmental task and it is conceived as an important step towards early self-regulation in the preschool years. Although most of the research in the area of compliance has been carried out from a socialization perspective, this study used the attachment theory as a theoretical basis. Empirical studies have documented associations between attachment, parenting, and compliance, and this seems to be a promising field of research (Belsky et al., 2000; Feldman & Klein, 2003; Gilissen et al., 2008; Higgins, 2008; Karreman et al., 2006; Kochanska et al., 2009; Thompson, 2008; Weinfield et al., 2008). Given the importance

of parent-child relationship for children's compliance, this study examined the relationship between parenting control, attachment representation, and children's compliance in the preschool years. More specifically, we were interested in the mediating role of the attachment representation in the relationship between mothers' and fathers' parenting control and children's compliance. In addition, very few studies have examined the role that fathers play in the development of young preschoolers' compliance and early self-regulation (Barry & Kochanska, 2010; Diener et al., 2002; Higgins, 2008; Volling, Blandon, & Gorvine, 2006; Volling, Blandon, & Kolak, 2006). Therefore, we studied children's compliance with both their mothers and their fathers to provide insight into their similarities and differences. This study adds to the growing body of research that portrays preschoolers' compliance as a process in which the qualities of parenting and the qualities of attachment are complexly intertwined.

A descriptive reading of the results regarding compliance and parenting indicates that, in the child-mother and the child-father dyads, most children showed a compliant profile. Likewise, mothers and fathers of the compliant group revealed the highest scores on positive parenting control behaviours, thus replicating findings from several earlier studies (Crockenberg & Litman, 1990; Karreman et al., 2006; Kochanska et al., 2001; Omer, 2001). Mothers and fathers who are appropriate and positive in their parenting behaviours are more likely to have children who directly comply with their requests, which lays the groundwork for subsequent positive social development in the preschool years (Kaufmann et al., 2000). With respect to children's attachment representation, the majority of children exhibited secure attachment representation. Secure children tended to show an easier access to emotions related to the attachment experiences, to articulate them in a more coherent way, to represent positives interactions between parents and children, and to display greater investment, flexibility, and complexity in their play, with a broader range of emotional themes. The percentage of attachment security in our study is in line with previous research (Bretherton, 2008; Miljkovitch et al., 2004).

The main aim of this study was to examine the role of children's attachment representation as a potential mediator in the relationship between mothers' and fathers' positive parenting control and children's compliance. To this end, four research hypotheses were tested. First, as predicted, mothers' and fathers' positive parenting control strongly predicted children's compliance. This suggests that mothers' and fathers' positive parenting control behaviours had a significant effect on the probability of the children being compliant in a cleanup task. Therefore, mothers' and fathers'

developmentally appropriate and positive parenting tends to generate children who are more compliant, which replicates findings from several studies (Higgins, 2008; Karreman et al., 2006; Kochanska et al., 2001; Omer, 2001). These data highlight the similarities in mothers' and fathers' parenting control and their effects on children's compliance.

Our second hypothesis concerned the possible influence that children's attachment representation has on children's compliance at 3 years of age. To our knowledge, prior studies have focused exclusively on the link between early attachment organization and compliance. With preschoolers' goal-corrected behaviour and quality of emotional organization during linguistic and cognitive challenges, researchers are able to explore their representations of attachment through story stems. Story completion doll-play is a widely used clinical and research method with young children and has been shown to correlate with standard measures of attachment organization (Bretherton, 2008; Bretherton & Munholland, 2008). Our results highlight, for the first time, that children's secure attachment representation was a significant predictor of children's compliance with the mother, but not with the father, providing partial support for our expectations based on previous research on early attachment organization (Kochanska & Aksan, 1995; Kochanska et al., 2005; Matas et al., 1978; NICHD Early Child Care Research Network, 2004; Stayton et al., 1971; Weinfield et al., 2008). This result is in line with the Higgins' study (2008) that also did not find an association between attachment organization and compliance with the father. This investigation, like ours, underpins the differential impact of children's attachment on children's compliance with the mother and with the father. Along the same line, Grossmann el al. (2002) had already suggested that attachment may have a different role and importance in the infant-mother and the infant-father interactions. Namely, that sensitivity is a better assessment of the quality of the infant-father interaction, while attachment security is the best fit for the infant-mother interaction. Many infant-father interaction studies have found relationships between fathers' interactional sensitivity and quality of children's play, with attachment being an intervening variable (Grossmann & Grossmann, 2000; Grossmann et al., 2008; NICHD Early Child Research Network, 2000). Kochanska et al. (2010) also highlighted that infants' attachment security may differ in child-mother and child-father relationships and that more research is needed for a more comprehensive view of those differences. Finally, we raise one potential hypothesis from organizational attachment perspective, namely that the quality and nature of the preschool children's relationship will be reflective of the representational patterning of the earlier dyadic organization with the mother than with

the father. Indeed, our results might support the assumption that story completion reflect the child's working models of self with the mother (versus the father), considering that the construction of internal working models of attachment are affected by the experience with their caregivers. The use of narratives and story completion tasks provide a vehicle for accessing the representational world of young children, which reflects internal representational models from past and current caregiving experiences (Gloger-Tipplet & Koenig, 2007). These dissimilarities also point to practical implications, namely the creation of effective programmes and policies directed towards parents' needs to recognize that fathers make important contributions to their children's compliance and their social-emotional development, albeit differently perhaps to mothers. From this interaction relationship with the mother, children seem to develop skills for cooperation and compliance regarding maternal demands. However, these differential effects of attachment representation on children's compliance with mothers and fathers are really complex. As we discuss next, the quality of children's attachment representation loses its predictive power when the role of mothers' positive parenting control is tested simultaneously.

In our third hypothesis we explored the associations between mothers' and fathers' positive parenting control behaviours and secure attachment representation. In both child-mother and child-father dyads, positive parenting control was significantly related to children's secure attachment representation, confirming our expectations based on the available evidence that focused on early attachment organization. Parental sensitivity in infancy has been found to be related to a secure attachment, which has been associated with preschoolers' early internalization of rules and positive social skills (Laible & Thompson, 2000; Steelman et al., 2002). Likewise, mothers' and fathers' positive and appropriate parenting control was a significant predictor of children's secure attachment representation in our sample: this supports the argument that positive and responsive parenting control is closely tied to attachment representation. This result highlights that parents' control behaviours, when the child is 3 years of age, reflects the quality of the parent-child exchanges thus influencing children's attachment representation. Positive and responsive parenting, in which parents are sensitive to children's cues and assist them in achieving desired goals, increases children's exposure to positive strategies that, in turn, promote their behavioural and emotional adaptation to situational demands and encourage the formation of parents' representations as effective and secure. Parents of secure children may, therefore, be more sensitive, more responsive,

provide more guidance and interfere less in response to their children than parents of insecure children (Cassidy, 1994; De Wolff & van IJzendoorn, 1997, for a meta-analysis). Over time, these experiences of parental responsivity and sensitivity to children's needs become mentally internalized as an internal working model of attachment, which is active during times of stress and guides the individual's behaviour (Bowlby, 1969/1982). In addition, emotionally open verbal communication from parents to children (e.g., polite suggestions; positive language with the child in a calm, matter-of-fact manner; positive reinforcements; playful comments and explanation of the appropriate behaviour; all key features of positive parenting) contributes to secure attachment relationships in childhood and secure working models of attachment in the preschool years.

This study adds to a limited, though growing body of research that has increasingly focused on the role of attachment as a moderator or mediator in the relationship between important parental variables and child social-emotional outcomes (Eisenberg, 2006). Thus, in the fourth and final hypothesis of this study, we explored whether attachment representation plays a meditational role in the relationship between parenting control and children's compliance. Empirically, the three associations between mothers' positive parenting control, children's compliance profile and children's attachment representation lead us to explore the mediational role of children's attachment representation only in the relationship between mothers' positive parenting control and children's compliance. Nonetheless, attachment representation did not mediate the relationship between mothers' positive parenting control and children's compliance. In contrast, in the child-father dyads the three preconditions for testing a mediation model (Baron & Kenny, 1986) were not met. Therefore, we examined the contribution of fathers' positive parenting control and children's attachment representation as direct predictors of children's compliance profile. Fathers' positive parenting control was the only significant predictor of children's compliance. Likewise, Grossmann and colleagues (2002, 2008) have reported that the function of the attachment relationships is different for mothers and for fathers, with fathers' sensitivity during play as being more important than infant-father attachment. Researchers have also suggested that mothers assume primary responsibility for the routine care and nurture of their children, whereas fathers assume a primarily affiliate, playmate role (Parke & Buriel, 2006; Thompson, 2006). It is also interesting to note the similarities in terms of the impact of mothers' and fathers' parenting control on children's compliance. While children's attachment representation does not predict compliance with the father, this same variable loses its predictive power

in the child-mother relationship when the role of positive parenting control is tested simultaneously. This empirical finding leads us to think that mothers' parenting control behaviours play a direct role in children's compliance in the preschool years.

Effectively, taking into consideration the results of this investigation as a whole, our results seem to emphasize the importance of mothers' and fathers' parenting control behaviours as central to understanding the developmental processes of preschoolers' compliance. Therefore, both mothers' and fathers' positive parenting control behaviours, characterized by specific attempts at encouraging, teaching, providing other choices, and guiding the children's behaviour throughout the task, tended to promote children's compliance with their requests. During the preschool years, children are acquiring several developmental tasks related to compliance, namely: learning to manage impulses and emotions, establishing autonomy, and internalizing norms and standards within dyadic and social interactions. Mothers' and fathers' parenting control behaviours seem to provide important guidelines for preschoolers to manage all these developmental skills in order to comply with parents' requests and expectations.

In sum, this study lends empirical support to the assertion that parental orientation and guidance is crucial in the development of compliance skills during early preschool years, as opposed to children's attachment representation of the earlier relationships with the parents. In the preschool years, children develop more sophisticated language abilities and symbolic representational capacities, it becomes increasingly important to access directly their conceptualizations of their representations of self and other. However, it is in the course of the third year that children acquire and move from a sense of the self based on sensorimotor experiences to more sophisticated conceptualizations of the self (Sroufe, 1990), justifying our results.

Certainly, there are limitations in the present study that could be addressed in future research. Attachment security and compliance were measured concurrently. Longitudinal research is needed to examine prospectively how attachment and parenting control may influence the development of children's compliance and to clarify the direction of the effects earlier than three years of age. Furthermore, future research should also explore the longitudinal relationship between emotion regulation in infancy and compliance in preschool years. Concomitantly, some scholars have highlighted the importance of future research addressing variables that may mediate the link between parent-child relationships and child socialization (Kochanska, Aksan, & Joy, 2007; Kochanska et al., 2009), thus "reflecting both the recognition of complexities involved in

those processes and dissatisfaction with main effects that tend to be modest" (Kochanska et al., 2010, p. 1007). Observations of parenting and children's behaviours may enhance our understanding of the emergence of children's compliance in the preschool years in multiple natural contexts (home, laboratory) and in multiple relationships (co-parenting, triadic family system, nonparental agents as care teachers) and also to improve the generalization of findings and examine convergent validity. Our findings also suggest that research may need to pay closer attention to the role of fathers in the development of children's social-emotional outcomes in general, and compliance in particular. The question of the fathers' influence on children's attachment representation remains uncertain, thus, the specific role played by fathers stresses the importance of conducting further research on the different impacts of maternal and paternal care. Finally, the current study contributes to further the understanding of the development of children's compliance at 3 years old in the context of parenting control behaviours and attachment representation.

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CHAPTER 4

Infants' Emotion Regulation and Preschoolers' Compliance to Mother and to Father: Is There a Longitudinal Link?

> " (…) the inability to regulate emotion in infancy also may have implications for development. Children who are easily frustrated but cannot modulate their emotions may respond with more noncompliance to parental demands and thus be at risk for behavior problems (Forehand, 1977)… the identification of the early precursors of compliant/noncompliant behavior is a worthwhile effort." (Stifter, Spinrad, & Braungart-Rieker, 1999, p. 22)

Abstract

Objective: This study aimed (1) to test the longitudinal links between emotion regulation in infancy (10 months old) and compliance (3 years old) to both mother and father and (2) to explore if, by 10 months, infants start developing an emotion regulation style that is similar across different situations. **Method:** Fifty-two infants were assessed for emotion regulation during a semi-structured problem solving task, the *Shape Sorter Task* (Martins, 2007) with their mothers and then separately with their fathers when they were 10 months old. Only 49 children (28 boys, 57.1%) participated in the cleanup task (e.g., Kochanska & Aksan, 1995, 2008) at 3 years of age with their mothers and their fathers, with a two-week interval, in order to assess children's compliance behaviours. **Results:** No association was found between emotion regulation and compliance to mother, nor between emotion regulation and compliance to father. Nevertheless, compliant children to the mother or the father showed a trend towards expressing adaptive emotion regulation across contexts (that is, with the mother or with the father or with both) than noncompliant children. In addition, an association between infants' emotion regulation during the task with the mother and with the father was found. **Conclusion:** We endorse the importance of furthering the role of emotion regulation for later compliance and focusing on multiple assessments of children's performance. Our results support that by the end of the first year of life, infants have developed some degree of cross-situational stability in their emotion regulation style.

Keywords: emotion regulation, cross-situational stability, preschoolers' compliance, parent-child relationship

Introduction

Compliance reflects the ability of children to initiate, cease, or modulate their behaviours, thoughts, and emotions in response to parental demands and expectations (Gralinski & Kopp, 1993; Kopp, 1982). When children follow their caregiver's directives and commands, they are changing their behaviour to accommodate others' expectations. This process allows the internalization of societal values and norms that are being transmitted by parents, which in turn will probably lead children to regulate their own behaviour, even in the absence of the parental figure. Compliance is therefore one of the steps towards the development of self-regulation and the process of socialization, so that by the child's second birthday some degree of self-control is achieved leading to the emergence of self-regulation during the preschool years (Kochanska & Aksan, 1995; Kopp, 1989; Sroufe, 1996).

In order to comply, children have to recruit cognitive, motor, social, and emotional skills (Kochanska, 1993; Kopp, 1982; Stifter, Spinrad, & Braungart-Rieker, 1999). Consequently, earlier developmental acquisitions are necessary for self-regulation to emerge during the preschool years. In addition, differences in the quality of such skills will affect self-regulation (Kopp, 1982; Sroufe, 1996). Namely, in infancy, babies have to learn how to regulate physiological activation and consciousness states (e.g., cry, sleep) with the help of their caregivers. Also, as emotions unfold during the first year of life, infants are required to learn how to regulate them. From approximately three to six months old, caregivers are essential for infants' emotion regulation (caregiver guided regulation; Sroufe, 1996). But as infants approach the end of the first year of life, they join their parents in dyadically regulating their affective states (Sroufe, 1996). Hence, while both emotion regulation and compliance can be considered as developmental precursors of self-regulation, we expect that emotion regulation itself may also be considered a precursor of compliance. Therefore, this study's first and major aim consisted of analyzing longitudinal links between emotion regulation in infancy and compliance in preschool, as there are still few investigations regarding early precursors of compliance.

Generally speaking, emotion regulation might be defined as intrinsic (e.g., physiological), and extrinsic processes (e.g., behavioural, social) that are associated with the activation of an emotion and its management over time (Cole, Martin, & Dennis, 2004; Gross & Thompson, 2007). These processes have an impact on the overall

functioning of the person, influencing the (mal)adaptive role of that emotional experience in a particular context (Cicchetti, Ganiban, & Barnett, 1991; Cole et al., 2004; Gross & Thompson, 2007). Specifically, emotional dysregulation in infancy may be conceptualized as a dimensional construct, defined at one end of the continuum as a constricted emotional response that is rarely accompanied by crying (over-regulation), and at the other end, as an intense difficulty to recover from an unmodulated pattern of responding to stimuli (under-regulation) (Cassidy, 1994; Cole, Michel, & Teti, 1994; Keenan, 2000).

In the above definition of emotion regulation, it is clearly stated that the way children regulate their emotions has an impact on their behavioural organization. Regarding compliance behaviours, emotion regulation will influence compliance in at least two ways. First, in order to comply, children have to control their behaviour so that they can inhibit what they were doing or what they would rather be doing. In these situations, frustration may arise and the way children deal with these negative emotions may lead to a more or less socially appropriate response (Stifter et al., 1999). Second, the behaviours that are recruited by infants to regulate emotional arousal may translate into strategies needed for controlling their behaviour in response to a request (Stifter et al., 1999). For example, using attention skills is an important way of controlling negative emotions (Kopp, 1989), but they are also necessary in order for children to pay attention and remain focused to the rule that has been given by the parent when other more interesting stimuli compete with following the rule. Interestingly, some studies have supported that early emotion regulation skills set the stage for behavioural control with mother (Kalpidou, Power, Cherry, & Gottfried, 2004; Stifter et al., 1999), while others have not (Calkins, Smith, Gill, & Johnson, 1998), making this topic an open issue.

Specifically, Stifter et al. (1999) studied the relationship between emotion regulation (at 5, 10 and 18 months old) and compliance (at 30 months old). Their empirical findings suggested that a delay in the development of regulatory skills by infants at 10 months may constrain toddlers' ability to comply with requests later on. Another study of preschoolers aged from 3 to 5 years old found an association between emotion regulation (expressive emotional comfort during a cutlery sorting task and coping strategies perceived by mother and teacher) and compliance to the rule in the absence of the experimenter (Kalpidou et al., 2004). Contrastingly, Calkins et al. (1998) found that at 24 months there was no relationship between emotion regulation (assessed

by examining the child's behaviours ─ aggression, distraction, object focus ─ when confronted by three emotion-eliciting tasks) and compliance to maternal requests.

Despite the increase in studies that show the importance of fathers as socializing agents of children, only one has looked at the role of emotion regulation (Feldman & Klein, 2003). Their investigation showed that not only was children's emotion regulation in toddlerhood related to self-regulated compliance to the mothers, it was also related to fathers and to childcare teachers. Consequently, in addition to studying compliance to the mother, we wanted to further this analysis by looking at the association between emotion regulation and compliance to the father.

Until this point in the review, we had focused on two important socialization contexts separately, the child-mother and the child-father relationship. Nevertheless, we appreciate that analyzing the impact of cumulative influences on children's development is an important line of research in developmental psychology. If infants are able to show adaptive emotion regulation in certain circumstances, one might suggest that these skills are being included in the children's behavioural and emotional repertoire as a whole. If this is the case, they will be recruited when self-control is needed, namely in a compliance situation. Assessing emotion regulation during play with the mother and with the father allows us to have two examples of the infant's emotion regulation. Using both emotion regulation samples we can test if compliant children at 3 years old (whether with the mother or with the father) had indeed shown adaptive emotion regulation styles in an interactional context at 10 months old.

As explained before, in order to study early precursors of compliance to mothers and fathers we decided to assess emotion regulation in infancy (at 10 months). Furthermore, the decision to assess emotion regulation late in the first year of life encompassed the second aim of this study. We wanted to explore if infants start to develop an emotion regulation style that is similar across different contexts (mother vs. father). A significant increase in infants' emotion regulation abilities takes place on approaching the first birthday (Kopp, 1989). Infants use effortful attention to self-regulate emotions, for example, focusing attention on objects or distracting toy play (Rothbart & Sheese, 2007). They also use hetero-regulation strategies (Garber & Dodge, 1991), such as turning to the caregiver for help in order to manage levels of arousal that might be disorganizing (Buss & Goldsmith, 1998; Diener, Mangelsdorf, McHale, & Frosch 2002; Kopp, 1989; Stifter & Spinrad, 2002). The child's previous emotion regulation skills seem to become organized into patterns or styles starting as early as the end of the first

year of life (Diener et al., 2002; Kopp, 1989). Opposing the hypothesis of emergence of a coherent emotion regulation style, Bridges, Grolnick, and Connell (1997) found that only one in six emotion regulation strategies used by children in a delay situation with the mother was associated with its usage in the delay situation with the father. Since during the first years of life children are very dependent on parents to regulate high levels of arousal (Sroufe, 1996) one might expect that children will use different emotion regulation strategies regarding the interactional partner at hand or the demands of the context itself (Thompson, 2011).

However, there are evidences that the patterning of infants' emotion activation and the emotion regulation strategies used to deal with that activation (i.e., the emotion regulations strategies used to regulate, positive vs. negative emotions) are similar with mothers and fathers (4 months, Braungart-Rieker, Garwood, Powers, & Notaro, 1998; 12 ½ to 14 months, Bridges et al., 1997; 12 to 13 months, Diener et al., 2002). Nevertheless, these results do not provide direct evidences of a cross-context (mother vs. father) coherent style of infants' emotion regulation, but the following empirical findings do. Diener et al. (2002) and Braungart-Rieker et al. (1998) revealed an association between infants' emotion regulation strategies used with mothers and with fathers. Diener et al. (2002) took their analysis even further and showed that it was possible to identify different patterns or styles of infant's emotion regulation. They found that indeed there was a concordance between the same infants' style of emotion regulation identified with the mother and with the father, providing concrete evidence regarding the emergence of an emotion regulation style in infancy. Based on this contradictory result, this research aimed at exploring the concept of emotion regulation styles, by comparing infant's emotion regulation within infant-mother and infant-father interactions.

In light of this state-of-the-art, this study had two main goals: (1) to analyze the longitudinal links between emotion regulation in infancy (10 months old) and compliance (3 years old) to both mother and father and (2) to explore if, by 10 months, infants start developing an emotion regulation style that is similar across different situations. Emotion regulation has been described as a precursor of children's compliance, since both are steps in the development of self-regulation (Kopp, 1989; Sroufe, 1996). There is empirical evidence that supports this connection with compliance to mothers (cf., Calkins et al., 1998, for nonsignificant finding), but we found only one study with compliance to fathers. Therefore, regarding the first goal, we explored three specific hypotheses. First, we expected an association between adaptive emotion regulation with the mother at 10

months and compliance to the mother at 3 years old. Second, we also expected associations between adaptive emotion regulation with the father at 10 months and compliance to the father at 3 years old. Third, we hypothesized that compliant children with the mother or father at age 3 would show adaptive emotion regulation in more contexts in infancy than noncompliant children. However, due to opposing beliefs (e.g., Bridges, Denham, & Ganiban, 2004; Diener et al., 2002), we did not make any specific hypotheses concerning the existence of coherent infants' emotion regulation styles within infant-mother and infant-father interactions, which concern the second main goal of this study.

Method

Participants

The participants were 52 families (mothers, fathers and their infants) recruited from childcare centres in a large city in the north of Portugal, who were participating in a longitudinal study on child development. Children were assessed at two time-points: 10 months and 3 years old. At Time-point 1 (T1) infants' style of emotion regulation (31 boys, 59.6%) was assessed. Mean age was 10.38 months, *SD* = .36. At Time-point 2 (T2), three families did not participate in the study and were excluded (one family refused, one could not be traced, and the third one was unable to participate at the time). Therefore, at T2, children's compliance behaviours (28 boys, 57.1%) were assessed. Mean age was 37.78 months, *SD* = .99. Mothers' and fathers' average ages were 33.45 years, *SD* = 4.76 and 33.68, *SD* = 4.60, respectively. Concerning SES, 48.1% were classified as high (*n* = 25), 21.2% as middle-high (*n* = 11), 17.3% as middle (*n* = 9) and 13.5% as middle-to-low (*n* = 7). All participants were Caucasian and had Portuguese as their first language. Additionally, recording problems prevented the inclusion of four dyads in the statistical analyses (three child-father and one child-mother dyads) at T2.

Procedure

The recruitment of the families was made through the directors of several childcare centres who handed the families an invitation letter with the aims and the overall procedure of the longitudinal project. Families who showed interest were contacted by the research team. They were assessed at two time points: at 10 months old

in the home visit (T1) and at 3 years of age in the laboratory visit (T2), after parents filled in informed consent forms.

At T1, the child-mother dyads were visited in their homes and 40-minute home-based observations were video-recorded. For the first 20 minutes, mothers were asked to go about their normal routine, and for the following 10 minutes they were to play with the child. The total of 30 minutes was used to score the quality of the parent-infant interaction (emotional availability). For the last 10 minutes, mothers were asked to play with the shape sorter provided by the researcher (to score infant emotion regulation). The same procedure was repeated with child-fathers dyads in a second home visit, with an average interval of one week.

At T2 each child-mother dyad attended one laboratory session with the approximate duration of 1½ hours, including a 15 minute break. During this session, child-mother interactions were observed in a *cleanup paradigm* (e.g., Kochanska & Aksan, 1995, 2008) to assess children's compliance behaviours. Within two weeks of the first session, children returned to the laboratory with their fathers for the cleanup task. All procedures were videotaped for subsequent coding and took place in a university laboratory setting composed of two adjacent rooms separated by a two-way mirror.

Measures

Emotion Regulation.

The *Shape Sorter Task* (Martins, 2007), specifically developed for this longitudinal study, was designed to assess 10-month-old infants' style of emotion regulation within an infant-mother and an infant-father interaction, at home, through a semi-structured problem solving task. The observer gave a shape sorter to the mother/father and explicitly asked her/him to teach the infant how to insert the pieces in the holes, given that the task is recommended for 12-month-old toddlers. The task took 10 minutes and was videotaped for subsequent coding.

An 8-point rating scale was used to score emotion regulation. The scale discriminated the style of the emotion regulation displayed during the infant-mother and the infant-father interaction: *over-regulation* (8), *adaptive regulation* (7-6) and *under-regulation* (5-1). In a task that is long and hard for the infant, *over-regulation* was identified when there was total absence of expression of negative emotions on the infants' behalf throughout the duration of the task (i.e., infant is highly focused on the task itself). The *adaptive style* of emotion regulation was characterized by the expression of some

negative emotions that lead to a momentary disruption of the task, but that would be followed by the infants' shift to positive or neutral affect and renewed focused attention on the task. And finally, *under-regulation* was representative of infants that expressed many negative emotions which disrupted the game, and the interaction with the parents was not successful in helping the infant to shift from a negative affect and to refocus on the task. In this investigation we used two categories, comprising of opposite qualities of emotion regulation: 1) adaptive and 2) maladaptive (collapsing both unadaptive emotion regulation strategies: over and under-regulation).

Four previously trained researchers, blind to all other measures, scored all tapes. Inter-rater reliability was adequate, Cohen's kappa = .77, $p < .001$, achieved through double coding of 67% of the videos of the three categories: *over-regulation*, *adaptive* and *under-regulation*.

Children's Compliance Behaviours.

The *cleanup task* (e.g., Kochanska & Aksan, 1995, 2008) was used to assess children's compliance behaviours with their mothers and with their fathers. After a 5-minute parent-child toy play period, parents were asked to instruct their children to pick up the toys and place them into a large box. The task ended when all the toys had been placed in the box or when the parent indicated they had finished it (M = 2.66 min, SD = 1.83, in the child-mother task; M = 3.12 min, SD = 1.84, in the child-father task; t (44) = -1.15, p = .257).

The coding system was adapted from previous research (Crockenberg & Litman, 1990; Klimes-Dougan & Kopp, 1999; Kochanska & Aksan, 2008; Kopp, 1989; Kuczynski & Kochanska, 1990; NICHD Early Child Care Research Network, 1998, 2004; Stifter et al., 1999) and consisted of four scales assessed on a 5-point *Likert* scale, every 60 seconds: *compliance, avoidance*, *overt resistance* and *defiance*. *Compliance* was described as children's willingness to comply with the parental directives, reflecting the children's orientation to the task throughout the interaction. Through, *avoidance,* children tended to be reluctant and to ignore the task: continuing to play with toys ignoring their parent's requests, moving away or hiding to avoid having to comply, diverting their attention to the environment or to other toys, while maintaining a non-angry or non-distressed affect. *Overt resistance* was observed when the children tended to refuse overtly and/or to negotiate with the parents, in a non-aversive manner. *Defiance* was exhibited when the children did not follow instructions and answered with an angry or

whiny tone of voice and/or displayed aggressive behaviours (e.g., poorly controlled anger, cried and whined, kicked or threw toys, had a temper tantrum and overtly expressed frustration through body language and voice).

Final scores on each dimension resulted from the average of all 60-second segments.

About 30% of the sample was coded by four previously trained researchers. Cohen's kappa yielded excellent inter-rater reliabilities (.97 for compliance, .90 for avoidance, .94 for overt resistance and .93 for defiance).

Children's *Compliant* versus *Noncompliant Profiles* was obtained through cluster analysis according to children's behaviours in the cleanup task with their mother and their father, as described by Carvalho, Martins, Martins, Osório, & Soares (submitted). These two distinct children's behavioural profiles during the cleanup task with mothers and fathers served as the basis for the subsequent statistical analysis.

Results

Descriptive Statistics of Sex and SES

In this sample 50% (n = 26) of the infants showed adaptive emotion regulation within the infant-mother interaction, while 69% (n = 33) were classified as compliant to the mother at age three (vs. 31%, n = 15 as noncompliant). Similar results were found for the child-father dyad. There was an even distribution of adaptive (54%, n = 28) vs. maladaptive emotion (46%, n = 24) regulation in infancy and also a greater number of compliant (80%, n = 37) than noncompliant children to the father at age three (20%, n = 9) (Table 1C).

Emotion regulation with the mother and with the father was not related to the infants' sex, χ^2 (1) = .72, p = .400 and χ^2 (1) = .03, p = .860, respectively, nor with SES, U = 309, p = .570 (mother); U = 124, p = .200 (father). Compliance to the mother and the father was neither associated with the child's sex, χ^2 (1) = .97, p = .330 and χ^2 (1) = 1.68, p = .190, respectively, nor with SES, U = 210, p = .370 (mother); U = 309, p = .570 (father). Therefore, sex and SES were not taken into further consideration.

Emotion Regulation and Compliance: Mother vs. Father

Neither of our first two hypotheses was confirmed (Table 1C). Adaptive infants' emotion regulation observed with the mother at 10 months was not associated with compliance to the mother at age three, χ^2 (1) = 2.42, p = .120, neither was adaptive infants' emotion regulation observed with the father associated with compliance to the father at age three, χ^2 (1) = 1.99, p = .160.

Table 1C

Descriptive and Relation Between Emotion Regulation and Compliance to Mother and to Father

Child-mother dyads (N = 48)			
		Compliant (n = 33)	Noncompliant (n = 15)
	n (%)	n (expected count)	
Adaptive emotion regulation	24 (50.0%)	19 (16.5)	5 (7.5)
Maladaptive emotion regulation	24 (50.0%)	14 (16.5)	10 (7.5)
		χ^2 (1) = 2.42, p = .120	
Child-father dyads (N = 46)			
		Compliant (n = 37)	Noncompliant (n = 9)
	n (%)	n (expected count)	
Adaptive emotion regulation	25 (54.3%)	22 (20.1)	3 (4.9)
Maladaptive emotion regulation	21 (45.7%)	15 (16.9)	6 (4.1)
		χ^2 (1) = 1.99, p = .160	

Emotion Regulation Across Contexts and Compliance

Next, we tested our third hypothesis – if compliant children with the mother or the father at age 3 had shown adaptive emotion regulation in more contexts in infancy compared with noncompliant children. We found a marginally significant difference (Table 2C), U = 169.50, p = .070, revealing that compliant children with the mother do tend to show an adaptive emotion regulation across contexts (that is, with the mother or

with the father or with both) than noncompliant children. The same trend was identified in the child-father relationship, $U = 105$, $p = .070$ (Table 2C).

Table 2C

Differences Between Compliant and Noncompliant Groups to Mother and to Father in Contexts in Which Emotion Regulation was Shown to be Adaptive

Child-mother dyads ($N = 48$)		
	Compliant ($n = 33$)	Noncompliant ($n = 15$)
	Mean Rank	
Emotion regulation in two contexts	26.86	19.30
	$U = 169.50$, $p = .070$	
Child-father dyads ($N = 46$)		
	Compliant ($n = 37$)	Noncompliant ($n = 9$)
	Mean Rank	
Emotion regulation in two contexts	25.16	16.67
	$U = 105$, $p = .070$	

Note. Emotion regulation in two contexts: 0 = maladaptive emotion regulation with mother AND father; 1 = adaptive emotion regulation with mother OR father, 2 = adaptive emotion regulation with mother AND father.

Association Between Infant's Emotion Regulation in Two Contexts

Regarding our last goal, which explored whether infants' emotion regulation is stable cross-contextually, no specific hypothesis was formulated due to opposing beliefs about this possibility. Significant association was found between infant-mother and infant-father emotion regulation, χ^2 (1) = 7.74, p = .005 (Table 3C). An infant that displayed an adaptive strategy of emotion regulation with the mother was associated with an adaptive emotion regulation style with the father.

Table 3C

Association Between Infant's Emotion Regulation in Infant-Mother and Infant-Father Contexts (N = 52)

	Mother: Infant emotion regulation	
	Adaptive	Maladaptive
Father: Infant emotion regulation	*n* (%) (expected count)	
Adaptive	19 (37.0%) (14)	9 (17.0%) (14)
Maladaptive	7 (13.0%) (12)	17 (33.0%) (12)
	χ^2 (1) = 7.74, p = .005	

** $p < .01$.

Discussion

Several researchers have reported the importance of early emotion regulation to the development of compliance (Kalpidou et al., 2004; Stifter, 2002; Stifter et al., 1999), although only one study has focused at the role of emotion regulation with fathers as socializing agents (Feldman & Klein, 2003). Thus, this study had two main focuses: (1) to explore longitudinal links between emotion regulation in infancy (10 months old) and compliance (3 years old) to both mother and father and (2) to analyze if, by 10 months, infants start to develop an emotion regulation style that is similar across different interactional situations.

Regarding the first goal, no links were found between adaptive emotion regulation within the infant-mother or infant-father dyads and compliance to mother or father, respectively. Although this was not the hypothesized result, another investigation has also reported no association with compliance to mother (Calkins et al., 1998). By analyzing the descriptive of this sample, we can realize that close to half of the sample presents an adaptive emotion regulation, in the infant-mother and infant-father interactions, while more than to two thirds of the children are classified as compliant to the mother and to the

father. This may explain, in part, why no links between emotion regulation and compliance were found.

Our first two hypotheses were refuted, but other results in this study might suggest that there are longitudinal links between emotion regulation in infancy and compliance later in the preschool years. Through the creation of a new variable that encapsulated the quality of emotion regulation that the infant evidenced in the contexts available in this research (none, with mother or father, with mother and father) we were able to analyze two samples of the infant's emotion regulation. This allowed us to find a trend, whereby compliant children to the mother or the father at age 3 displayed adaptive emotion regulation across contexts in infancy. Therefore, for infants that demonstrate adaptive emotion regulation in one, but in a greater extent, in both contexts (mother and father) it might be hypothesized that these emotion regulation capacities are becoming part of the children's psychological and behavioural repertoire. In turn, these children's capacities will allow self-regulate in the face of complying with the parent's request, whether it is the mother or father. This result may be interpreted to suggest that adaptive emotion regulation in infancy indeed relates to compliance at age three, as long as multiple assessments of emotion regulation are used. Likewise, this result seems to confirm that compliance in preschool years is preceded by development of the ability of infants to regulate their emotional responses in infancy, in a play interaction with their mothers and their fathers.

In this research we aimed at advancing our knowledge of children's compliance to fathers, specifically its connection to emotion regulation in infancy. To our knowledge, only one study has focused on this developmental trajectory of self-regulation in the child-father dyad (Feldman & Klein, 2003). The authors found a link between emotion regulation and compliance to mothers, fathers and childcare providers, with their interpretation of the results supporting the assumption that compliance is generalized from the child-mother relation to other figures. Opposing this interpretation, our research supports that compliance to mothers and to fathers are independent (Carvalho et al., submitted) and that more important than comparing parents' influence on the development of self-regulation, an approach that combines both socializing experiences to understand children's development is needed. More research is necessary to disentangle the similarities and differences in the development of self-regulation, and compliance in particular.

The second aim of this study related to the question of whether children start developing a coherent style of emotion regulation that is stable across situations at the end of the first year of life. When reflecting about future directions in emotion regulation research, Bridges et al. (2004) have pointed out the importance of studying the extent to which emotion regulation styles may develop in individuals, and, of so, when is this first recognizable during development. Although previous work has suggested this argument (Diener et al., 2002), others still question its emergence early in life (Bridges et al., 2004). By comparing infants' emotion regulation within infant-mother and infant-father interactions, it allowed us to explore the concept of emotion regulation styles. We found that an infant that displayed an adaptive strategy of emotion regulation with the mother was also frequently adaptive with the father. This result supports that, by the end of the first year of life, infants have developed some degree of stability in their emotion regulation style. This is not to say that at 10 months infants have developed fixed emotion regulation patterns. Research has shown that other variables throughout development will shape what strategies adolescents and adults use, and that many contextual variables condition the quality of emotion regulation expressed (Thompson, 2011). Nevertheless, this result seems to demonstrate the emergence of some stable differences early in life. Considering the impact of experience on brain development and how the first years of life have considerable effects on brain architecture (Belsky & de Haan, 2011), it is possible to hypothesize that the style identified early in life may subsequently contribute to later functioning.

The most important limitation of this study relates to the interpretation of a marginally significant association between adaptive emotion regulation across contexts (none, with mother or father, with mother and father) and compliance to either mother or father. One might argue that this relationship does not exist, but taking into consideration that this is a theoretically supported result, we advanced with its interpretation. We know that in order for a child to comply, different capacities have to be recruited, such as emotional, cognitive, motor, social, and so forth (Kochanska, 1993; Kopp, 1982; Stifter et al., 1999). Therefore, as future directions for research, we recommend that other early predictors of compliance should be taken into consideration in order to study interactions between them. And finally, we endorse the importance of focusing on the combined effects of mothers' and fathers' influence on children's development, going beyond the comparisons between their individual influences, and also examining on multiple assessments of children's performance. In conclusion, we are encouraged by the

important findings of this study and the potential value of the early emotion regulation for understanding the development of compliance in the child-parent relationship. More longitudinal investigations are needed to further explore the process whereby the children's develop emotion regulation styles in infancy and how these styles might be related to children's compliance in early caregiving relationships.

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CHAPTER 5

General Discussion and Conclusion

> "In any study of family processes and children's outcomes, an extended developmental perspective is particularly critical. The parent-child relationship is substantially transformed over time in all domains as the child develops (Maccoby, 1984). Furthermore, the history of the relationship shapes future interactions (…)"
> (Barry & Kochanska, 2010, p. 5)

The aim of this chapter is twofold: (1) to summarize the main results and contributions of the three empirical studies, and (2) to discuss its limitations and implications for future research. These aims are discussed in light of theory and recent empirical research.

The preschool years represent an important time in the development of children's emotion regulation and compliance (Thompson, 2006, 2008). Over the first 3 years of life, children are acquiring various developmental skills related to self-regulation that are necessary for the emergence of compliance in the preschool years, namely: establishing physiological regulation; establishing attachment relationships with parents; developing autonomy, language and mental representations; and internalizing rules and parents' demands for social interactions (Kopp, 1982, 1989; NICHD Early Child Care Research Network, 2004; Sroufe, 1996).

Preschoolers' ability to comply with parental requests and expectations constitutes an important developmental task that has received much attention in research (Braungart-Rieker, Garwood, & Stifter, 1997; Colman, Hardy, Albert, Raffaelli, & Crockett, 2006; Kochanska, Koenig, Barry, Kim, & Yoon, 2010). However, some specific research questions remain untested or have been little explored. We sought to address some of the empirical gaps in literature by focusing on children's compliance in relation to parenting control, attachment representation and emotion regulation within the child-mother and the child-father dyadic interactions. The three central questions that guided our empirical work were: Is compliance at age 3 an individual characteristic or relationship specific? Is attachment representation a mediator in the relationship between parenting control behaviour and children's compliance in the preschool years? Is emotion regulation at 10 months linked to later compliance at 3 years of age? To this end, 52 infants were observed, at 10 months old, in a semi-structured problem solving task, the *Shape Sorter Task* (Martins, 2007) with their mothers and their fathers in two independent home sessions. Later on, 49 of those children were observed, at 3 years of age, with each parent in two independent laboratory sessions in a cleanup paradigm (e.g., Kochanska & Aksan, 1995, 2008), where children's compliance and parents' control behaviours were assessed. Children's attachment representation was also assessed in the *Attachment Story Completion Task* (Bretherton, Ridgeway, & Cassidy, 1990).

The next paragraphs summarize our main contributions and empirical findings.

5.1. Main Empirical Findings

Compliance at Age 3: Individual Characteristic or Relationship Specific?

In the first empirical paper (cf. Chapter 2), we explored whether preschoolers' compliance during a cleanup task with each parent derives from children's individual characteristics or grows out of a specific relationship. We also identified distinct children's behavioural profiles according to their compliance behaviours and explored differences between mothers' and fathers' parenting control behaviours and the effects on children's compliance profiles.

First, our results revealed two different children's behavioural profiles in the cleanup task with their mothers and their fathers: a *Compliant Profile* and a *Noncompliant Profile*. The *Compliant Profile* characterized children with higher compliance to parental directives as well as lower avoidance, lower overt resistance and lower defiance, with both mothers and fathers. This result was a methodological innovation that parts from previous studies that analyzed compliance in a dichotomous nature: situational versus committed compliance. Furthermore, we aimed to go beyond previous findings by identifying children's behavioural profiles that integrate compliance behaviours (i.e., committed and situational compliance) and noncompliance behaviours (i.e., avoidance, overt resistance and defiance). The empirical finding of two children's behavioural profiles served as the basis for subsequent analyses and studies. Second, our findings support the construct of compliance during the preschool years as relationship specific rather than as an individual characteristic, which is in line with our theoretical assumption. In fact, compliance has been shown to be related to parental behaviours observed during dyadic interactions (Blandon & Volling, 2008; Karreman, van Tuijl, van Aken, & Dekovic, 2006; Kochanska et al., 2010) rather than to children's characteristics. Third, our study confirmed the link between parenting behaviours and children's compliance. Namely, mothers' and fathers' positive control was positively related to compliance behaviours (Braungart-Rieker et al., 1997; Crockenberg & Litman, 1990; Karreman et al., 2006; Kochanska & Aksan, 1995; Smith, Calkins, Keane, Anastopoulus, & Shelton, 2004), though two sets of differences between mothers and fathers emerged.

The first set of differences was related to negative types of control. For fathers, all four control behaviours discriminated the compliant from the noncompliant profiles, also replicating that negative types of control (physical coercive control, verbal coercive control and assertive control) were associated with noncompliance (Braungart-Rieker et

al., 1997; Colman et al., 2006; Crockenberg & Litman, 1990; Donovan, Leavitt, & Walsh, 2000; Kochanska & Aksan, 1995; Smith et al., 2004). For mothers, physical coercive control did not distinguish the two behavioural profiles, reflecting that the use of this type of maternal control may not affect whether children actually comply with mothers' requests. The second set of differences between mothers and fathers was related to the type of control behaviours that differentiates the compliant from the noncompliant profiles. For fathers, the use of verbal coercive control was the most relevant behaviour that distinguished both profiles followed by physical coercive control, oriented/guidance control and finally, assertive control. For mothers, assertive control was the most important behaviour that differentiated the two profiles, followed by oriented/guidance control and verbal coercive control. These results suggest that children seem to be more affected by coercive control behaviours when fathers, and not mothers, use them.

Overall, paper 1 produced three important findings: (1) the methodological innovation of identifying two different children's behavioural profiles in the cleanup task with their mothers and their fathers; (2) the construct of compliance as relationship specific, rather than an individual characteristic; and (3) the differences between mothers' and fathers' parenting control behaviours on their children's behavioural profiles.

Parenting Control and Preschoolers' Compliance: Is Attachment a Mediator?

In the second empirical paper (cf. Chapter 3), we were interested in exploring the mediating role of attachment representation in the relationship between parenting control behaviours and children's compliance at 3 years of age. To our knowledge, this was the first study that explored the relationship between children's attachment representation and children's compliance at 3 years of age, using representational measures (Bretherton et al.,1990), rather than organizational measures of attachment (Solomon & George, 2008).

In accordance with our first hypothesis of this study, supported by previous research (Higgins, 2008; Karreman et al., 2006; Kochanska et al., 2010; Omer, 2001), mothers' and fathers' positive parenting control was a significant predictor of children's compliance profile. In other words, mothers' and fathers' developmentally appropriate and positive parenting control behaviours tends to generate children who are more compliant in the cleanup task with their mothers and their fathers.

Our second hypothesis was partially confirmed: children's attachment representation predicted children's compliance with the mothers but not with the fathers.

These results are in line with the empirical findings of Higgins (2008) who found that infants' organization of attachment to the mother marginally predicted toddler compliance, whereas infants' organization of attachment to the father did not. This evidence underpins the differential impact of children's attachment on children's compliance with mother and with father. Grossmann el al. (2002) had already suggested that attachment may have a different role and importance in the infant-mother and the infant-father interactions. Specifically, many infant-father interaction studies have found relationships between fathers' interactional sensitivity and the quality of children's play, with attachment being an intervening variable (Grossmann & Grossmann, 2000; Grossmann, Grossmann, Kindler, & Zimmermann, 2008; NICHD Early Child Research Network, 2000). Along the same line, Kochanska et al. (2010) also highlighted that the impact of infants' attachment security may differ in child-mother and child-father relationships. Thus, further research is needed for a more comprehensive view of these differences. In our study, perhaps in the first years of development, mothers and their parenting behaviours play a unique role in providing the child with the fundamental sense of security and protection that, in turn, serves as the base for future interactions, and, more specifically, for compliance with parental demands (Kochanska et al., 2010). These theoretical and empirical assumptions lead us to hypothesize that the representation of attachment at 3 years of age, as assessed via children's attachment narratives, may be more reflective of the quality of children's attachment relationship with the mother than with the father.

Our third research hypothesis was confirmed: mothers' and fathers' positive parenting control was a significant predictor of children's representation, which supports the argument that positive and responsive parenting is closely tied to attachment representation.

Finally, in the fourth and final hypothesis of this study, children's attachment representation did not mediate the relationship between mothers' positive parenting control and children's compliance. In contrast, in the child-father dyads, we could only examine the contribution of fathers' positive parenting and children's attachment representation as direct predictors of children's compliance profile. Fathers' positive parenting was the only significant predictor of children's compliance. Interestingly, these results highlighted the similarities of mothers' and fathers' parenting control behaviours on children's compliance. While children's attachment representation did not predict compliance with the father, this same variable loses its predictive power in the child-

mother dyads when the role of positive parenting control was tested simultaneously in the mediation model. Thus, mothers' and fathers' parenting control behaviours play a direct role for the children's compliance development in the preschool years. Both mothers' and fathers' positive parenting, characterized by specific attempts at encouraging, teaching, providing other choices, and guiding the children's behaviour throughout the task, tended to promote children's compliance with their requests.

The current study contributes to further the understanding of children's compliance at 3 years old in the context of attachment representation and parenting control behaviours. Future research should continue to explore these pathways in child-mother and child-father dyadic context.

Infants' Emotion Regulation and Preschoolers' Compliance to Mother and to Father: Is There a Longitudinal Link?

In the third and final research paper (cf. Chapter 4), we sought to investigate the longitudinal links between emotion regulation in infancy (10 months old) and compliance in preschool (3 years old). In addition, we explored if infants at 10 months start to develop an emotion regulation style that is similar across different interactional contexts. Emotion regulation has been described as a precursor of children's compliance, since both are steps in the development of self-regulation (Kopp, 1989; Sroufe, 1996).

Contrary to expectations, adaptive emotion regulation in infancy within the infant-mother dyads was not related to compliance in the preschool years with the mother. In the same line, no association between adaptive emotion regulation in infancy within the infant-father dyads and compliance to the father was found. However, we demonstrated that at age 3 compliant children, when compared to noncompliant children, tended to show adaptive emotion regulation across interactional contexts in infancy. This may suggest that emotion regulation in infancy is linked to compliance in the preschool years. Thus, the emergence of an adaptive emotion regulation style in infancy may indicate that some positive emotion regulation skills are becoming part of children's psychological and behavioural repertoire, laying the groundwork for children's compliance with their parents' requests in the preschool years. Finally, our results revealed an association between infants' emotion regulation expressed in the task with the mother and with the father. This empirical finding supports that by the end of the first year of life, infants develop some degree of stability in their emotion regulation style demonstrated by the consistency found in the context of play with the mothers and the fathers in our study.

In general, the results in this paper underlined the importance of exploring the developmental trajectory of emotion regulation and compliance in the father-child dyad. To our knowledge, this was the second empirical study that analyzed this longitudinal link between emotion regulation and compliance to the father and revealed different results to those of Feldman and Klein's (2003). In addition, our empirical findings underpinned the importance of focusing on combined effects of mothers' and fathers' influence on children's development, beyond comparisons between their individual influences. Future research should clarify and disentangle the similarities and differences in the development of emotion regulation and compliance, within child-mother and child-father relationships.

5.2. Limitations

The current research project presents some limitations that are worthy of mention. First, we only assessed children's compliance and parents' behaviours in the cleanup paradigm. Future research on children's compliance development might benefit from utilizing a prohibition paradigm (i.e., children are prohibited from touching an attractive toy), providing a more comprehensive description of children's and parents' behaviours. Second, the introduction of measures related to temperament could empirically validate our results and contribute to the ongoing debate on individual differences in compliance (Mangelsford & Frosch, 2000). Third, despite the theoretically recognized importance of the transition from externally to internally regulated behaviours, the majority of research on compliance (Kochanska & Aksan, 1995; Kochanska, Coy, & Murray, 2001), including our own, was based on relatively narrow developmental periods. Fourth, we did not study children's' compliance in the triadic family system, with all members (mothers, fathers and their children) interacting with each other. These triadic family interactions would almost certainly yield multiple new insights into the role of the family on children's compliance development. Finally, it is important to note that our sample consisted mainly of Caucasian intact families (mothers, fathers and their children) of middle to upper-middle social economic status, and, thus, the generalization of these results is limited.

5.3. Implications for Future Research

Despite its limitations, this research project has contributed to the comprehension of a global and broad perspective of children's compliance in the preschool years, as it considers the interplay between parenting control, attachment representation and early emotion regulation. In addition, this research project raises a number of interesting questions for further research. First, to further the research on the dyadic developmental nature of compliance, future studies should analyze the relationship context earlier than age three, in addition to integrating multiple contexts (e.g., home and laboratory) and multiple relationships (e.g., child-teacher, child-sibling pair, or triadic family system). Second, rigorous research on mothers' and fathers' parenting control behaviours in natural family ecologies could enhance the understanding of their similarities and differences, as emerged in our study. Specifically, more research is needed to explore the differences between mothers' and fathers' control behaviours that differentiate the compliant from the noncompliant profiles. Namely, a specific research should be designed to clarify the role of fathers' coercive control (verbal and physical) and the role of mothers' assertive control to children's compliance. Future research could also examine the parents as a dyadic parenting system. Fathers not only play a direct role in the development of children's compliance but may also have an indirect function by influencing mothers' parenting. Developmental research has unequivocally demonstrated that processes in one dyadic relationship in the family system influence other family systems (Barry & Kochanska, 2010; Cowan, Cohn, Cowan, & Pearson, 1996; Higgins, 2008). From this perspective, investigations should be focused on the importance of integrating family systems approaches in understanding specific links between emotion regulation, attachment histories and compliance. In addition, longitudinal research is needed to prospectively explore the course of how early emotion regulation, parenting control and attachment representation may influence the development of children's compliance. Finally, this study reported that attachment representation predicted children's compliance with the mother but not with the father. However, attachment representation was not a mediator in the relationship between mothers' positive parenting control and children's compliance. These results highlight the importance of future research addressing variables that might serve as mediators in the relations between parent-child positive relationship and socialization outcomes.

5.4. Conclusion

The three empirical papers make a significant contribution to the conceptualization of preschoolers' compliance as a multidimensional construct that emerges from the interplay between parenting control, attachment representation, and early emotion regulation. Although researchers have long stressed the importance of expanding observations of children's early experience beyond the child-mother relationship to the child-father relationship (Barry & Kochanska, 2010; Borelli et al., 2010; Kochanska et al., 2010; Parke & Buriel, 2006), this paradigm continues to be rarely implemented.

In this conclusion, we will answer the three key questions that guided the implementation of the different empirical studies:

(i) Is compliance at age 3 an individual characteristic or relationship specific?

Our first study revealed that children's compliance to the mother and to the father is independent and tends to reflect the quality of the parents' control behaviours in the cleanup task. This, in turn, highlights the development of compliance during the preschool years as having a relationship specific nature, rather than being a child individual characteristic. Using a cluster analytic approach, we identified two distinct children's behavioural profiles during a cleanup task with mothers and with fathers. Future research should investigate these different children's behavioural profiles as potential precursors of the self-regulation and the socialization process. Our empirical findings also pointed out the differences between mothers' and fathers' parenting control behaviours on the children's compliance, emerging as a complex process that progresses along distinct paths. These findings are important for intervention as they suggest that mothers' and fathers' parenting plays an important yet differentiating role in children's ability to initiate, cease, or modulate their behaviours and emotions in response to parents' demands and expectations. These abilities may set the stage for children's later adjustment and social competence (Kochanska, Barry, Aksan, & Boldt, 2008; Spinrad et al., 2007). Interventions should be designed to promote positive parenting control behaviours and to teach different strategies to mothers and fathers that will promote children's ability to comply with parents' demands and rules at preschool age.

(ii) Is attachment representation a mediator in the relationship between parenting control behaviour and children's compliance in the preschool years?

An approach that combines both parenting control and attachment relationship to understand children's compliance development was the starting point for our second empirical paper. To our knowledge, this was the first study that considered attachment representation as a potential mediator in the relationship between parenting control and children's compliance, thus enriching the understanding of the socialization process and the processes of attachment representation in relationships. Preliminary findings demonstrated that children's attachment representation predicted children's compliance with the mother but not with the father. However, attachment representation did not serve as a mediator in the relationship between mothers' positive parenting control and children's compliance. The extent to which these differences persist, or change, as the child develops remain largely unexamined, particularly at the level of attachment representation in the preschool years. While children's attachment representation did not predict compliance with the father, this same variable lost its predictive power in the child-mother relationship when the role of positive parenting control was tested simultaneously. This empirical finding leads us to think that mothers' and fathers' parenting control behaviours play a direct role in their children's compliance development in the preschool years. Children's compliance to parental requests involves nearly all domains of development – cognitive, social, motor, and emotional (Kochanska, 1993; Kopp, 1982). Thus, in our study, mothers' and fathers' parenting control behaviours seem to provide important guidelines for preschoolers' to manage all developmental skills in order to comply with parents' requests and expectations. In other words, mothers' and fathers' parenting control behaviours that help their children learn how to use and manage their behaviours, thoughts and emotions in response to parental requests and directives, may be conceptualized on the basis of Vygotsky's (1978) theorizing and concept of scaffolding. Although this study adds to the growing body of research that portrays preschoolers' compliance as a process in which the qualities of parenting and the qualities of attachment are complexly intertwined, more specific research is needed.

(iii) Is emotion regulation at 10 months linked to later compliance at 3 years of age?

Both early emotion regulation and preschool compliance have been conceptualized as developmental precursors of self-regulation, within the parent-child relationship (Grolnick, McMenamy, & Kurowski, 2006; Morris, Silk, Steinberg, Myers, & Robinson, 2007). However, very few empirical studies have explored the longitudinal links between emotion regulation in infancy and compliance in the preschool years (Calkins & Johnson, 1998; Kalpidou, Power, Cherry, & Gottfried, 2004; Stifter, Spinrad, & Braungart-Rieker, 1999). Therefore, our third empirical paper contributes to the understanding of longitudinal links between early emotion regulation and preschool compliance, in the two interactional contexts – with the mother and with the father. Our results did not reveal links between adaptive emotion regulation at 10 months and compliance at 3 years of age. However, compliant children to the mother or the father at age 3 showed early adaptive emotion regulation across interactional contexts, suggesting that emotion regulation in infancy could be a precursor of compliance in the preschool years. This study furthers the understanding of the role of emotion regulation in infancy for later compliance in the preschool years, supporting the assumption that the child's first year of life is fundamental for developing abilities to regulate emotions. In turn, these emotional regulatory capacities become more integrated and complex during the preschool years (Thompson, 1994). Nevertheless, our empirical findings also point to an important and understudied avenue of research, namely the exploration of the stability in emotion regulation and self-regulated compliance towards nonparental agents of socialization as childcare teachers. They must also play a role in the development of these skills, providing tools for the emergence of early emotion regulation and self-regulated compliance. Children's compliance has been studied mainly within the mother-child interaction; however, the degree of consistency between children's socialized behaviour toward parents and toward nonparental figures remains largely unknown (Feldman & Klein, 2003). Future research on the links between early emotion regulation and later compliance should take an ecological approach, examining parental and contextual variables.

Finally, it is noteworthy that this research project has focused on the description of early emotion regulation and later compliance, using observational methods in various naturalistic contexts and within child-mother and child-father relationships. Additionally, our results contribute to further understanding preschoolers' compliance as a dynamic process in which qualities of parenting control, qualities of children's attachment representation and qualities of infants' emotion regulation are complexly intertwined. Longitudinal research from early preschool to school age should continue to explore the developmental trajectory of these children, in particular, focusing on how individual pathways in terms of self-regulation might be associated with individual differences in socio-emotional school readiness.

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