Naughty or clumsy? Negative parental attributions in the context of child abuse risk

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Voor mijn opa, Jacob Willem van Brummen

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Chapter 1

General Introduction

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In support of efforts to develop effective intervention and prevention programs to reduce (the devastating consequences of) child maltreatment, it is important to understand the origins of child maltreatment. Why do some parents use dysfunctional parenting strategies and others do not? Different research angles have been of guidance in tracking down the etiology of child maltreatment (e.g., stress-regulation, intergenerational transmission, attachment security). An influential line of thought is that parental responses to child behavior depend on the way parents interpret and evaluate child behavior, also known as parental attributions. Milner (1993, 2003) incorporated parental attributions as key component in the Social Information Processing (SIP) model of Child Physical Abuse (CPA). The model explains how parental cognitions (e.g., perceptions, attributions) and affective schemata based on prior experiences, guide parenting behavior. The model hypothesizes that parents who attribute more responsibility and hostile intent to child behavior, and evaluate the behavior as more wrong and blameworthy, are parents who are at risk for child abuse. In this dissertation, negative parental attributions and their interrelated components as theorized by the SIP-model, are the main focus of investigation in a quest to improve our understanding of the etiology of dysfunctional parenting, and subsequently child maltreatment.

Child Maltreatment: Status Quo

As stated by the World Health Organization (WHO; Report of the Consultation on Child Abuse Prevention, Geneva, 1999) "child abuse or maltreatment constitutes all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power" (p. 15). Child maltreatment is a worldwide phenomenon that victimizes millions of children (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2015), resulting in devastating consequences often not limited to childhood, but with far reaching consequences in later adult life. Maltreated children experience an increased risk for physical, psychological, and behavioral problems. For example, empirical studies show that maltreated children, compared to non-maltreated children, are more likely to have a dysregulated stress-system (Carpenter et al., 2009), to have difficulties in social functioning (Alink, Cicchetti, Kim, & Rogosch, 2012), to experience depression and anxiety disorders (Tollenaar, Molendijk, Penninx, Milaneschi, & Antypa, 2017), and have alterations in brain structures that are involved in healthy emotion regulation (Jedd et al., 2015). To prevent this from happening, effective prevention and intervention programs are needed.

Prevention of child maltreatment has been put high on the agenda globally with the United Nation's Convention on the Rights of the Child (1989), ratified by 196 countries in 2018. Article 19 of this convention proclaims:

> 1. States Parties shall take all appropriate legislative, administrative, social and educational measures to protect the child from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse, while in the care of parent(s), legal guardian(s) or any other person who has the care of the child.
>
> 2. Such protective measures should, as appropriate, include effective procedures for the establishment of social programmes to provide necessary support for the child and for those who have the care of the child, as well as for other forms of prevention and for identification, reporting, referral, investigation, treatment and follow-up of instances of child maltreatment described heretofore, and, as appropriate, for judicial involvement.

The Netherlands ratified the convention in 1995 and undertook serious action. This action was given even more priority after the presentation of the first study that systematically examined Dutch prevalence rates of child maltreatment in 2005 (Netherlands' Prevalence study on Maltreatment of children and youth, NPM-2005; Euser, van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2010). Based on sentinel and CPS reports, the Dutch prevalence estimate of overall child maltreatment in 2005 was 30 per 1000 children (107,200 children in total). A second prevalence study in 2010 (NPM-2010; Euser et al., 2013) showed relative stability in prevalence rates over a period of five years: 34 per 1000 children, meaning that about 119,000 Dutch children were victims of maltreatment according to the latest survey in 2010. These troubling numbers gained huge media attention and were a wake-up call for the Dutch government. As a result, important prevention and intervention initiatives were taken in the Netherlands to reduce (the effects of) child maltreatment with a main focus on early detection by professionals (Euser et al., 2013). For example, physical and psychological violence against children became prohibited by law in 2007 (Article 1:247 Dutch Civil Code), and child and family professionals were trained to act according to a protocol (i.e., *meldcode kindermishandeling*) when encountering child maltreatment. This protocol has become legally regulated in 2013 (Staatsblad, March 14th, 2013), stating that organizations that work with children and families (i.e., schools, child care facilities, health and youth care services, social support services, and the justice department) are obligated to use this protocol when they suspect child maltreatment. Moreover, child maltreatment in 2018 is still top priority of the Dutch government. Commercials and campaigns are being used to gain more attention for the subject, local authorities are being monitored on their policy regarding child maltreatment (e.g., De Wilde, Kooijman, Van Boven, Van der Kooi, 2017), and in 2016 a large research call for testing the effectiveness of child maltreatment preventions and interventions and to bring this knowledge into practice has been issued (ZonMw, 2016).

For prevention and intervention purposes, it is important to track down the etiology of child abuse and neglect; how do maltreating parents differ from non-maltreating parents?

Answering this question gives us insight in risk factors and processes that lead to child maltreatment, which can be used to design effective interventions aimed at reducing the risk of child maltreatment. Parental cognitions are thought to play an important role in the etiology of child abuse and neglect. Cognitive behavioral theories assume that behavior is guided by cognitions and affective schemata based on prior experiences (Bandura, 1986; Milner, 2003). In line with this theory, different parental cognitions have been of interest in research on the predictors of child maltreatment (Milner, 1993). These include for example, parents' self-perceptions, parental awareness of the child's perspective (Newberger & Cook, 1982), parental expectations of child behavior, and parental attributions of responsibility and perceived negative intent (Twentyman & Plotkin, 1982; Twentyman, Rohrbeck, & Amish, 1984). Milner (1993) organized all cognitive activities that had been studied in relation to abusive parenting into one comprehensive cognitive model. Based on the information processing model by McFall (1982), and the theory of automatic and controlled processing by Shiffrin and Schneider (1984), Milner constructed the Social Information Processing (SIP) model of child physical abuse (CPA). The SIP-model aims at providing complete descriptions of parental cognitive activities related to CPA in each stage of the model, it describes how they are interrelated, and how they can be influenced by stress and negative affect (Milner, 1993, 2003).

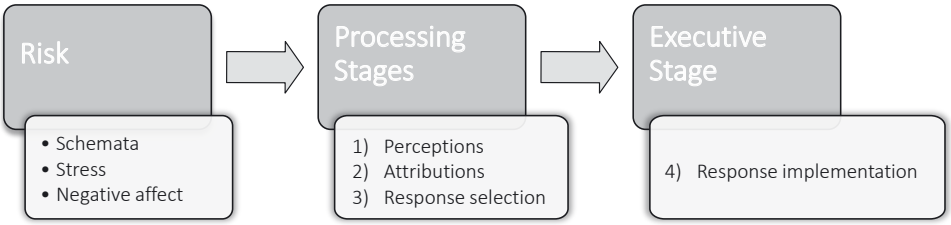

Figure 1. Social information processing model of CPA (Milner, 1993, 2003)

The Social Information Processing Model

The SIP-model of CPA (Milner, 1993, 2003) is a four-stage model. It consists of three cognitive stages that give meaning to social behavior (i.e., processing stages: 1. perception, 2. attributions, and 3. response selection), and a fourth executive stage that involves response implementation and monitoring. Furthermore, the model describes how pre-existing schemata (i.e., general beliefs about children and parenting / person-specific beliefs about the child and oneself) influence the cognitive stages, and explains how cognitive stages are interconnected and influence each other by automatic and controlled processing as a consequence of stress and negative affect (Figure 1).

Stage 1: Perceptions. In the processing stage, the parent processes situational information, and thereby gives meaning to the observed child behavior. The first

processing stage is called the perception stage. In this stage information is encoded by the parent. The model theorizes that high-risk parents, compared to low-risk parents, make more perceptional errors. Not only are high-risk parents thought to be less attentive and aware of child-related information (e.g., minor improvements or attempts to comply), it is also proposed that they engage in selective attention (congruent to their per-existing schemata; e.g., my child is always disobedient, so he will disobey me now as well) and make more errors in recognizing and evaluating child emotions, especially when they are of low intensity (Milner, 1993, 2003).

Stage 2: Attributions. The second processing stage is the stage where parents interpret and evaluate child behavior, also called the attribution stage. The model hypothesizes that parents at risk for child abuse attribute child behavior differently than other parents. Parents at risk interpret child behavior more often as the responsibility of the child ("it is my toddler's responsibility to hold his cup straight"), as motivated by hostile intent ("he spilled the milk on purpose to bully me"), and they evaluate the behavior as being more serious, wrong, and blameworthy (e.g. "spilling milk is serious wrongdoing of my child, he should know better"). In addition, these parents are expected to be less able to think of alternative explanations for the child's behavior (e.g., "he spilled the milk, because he is too young to hold the cup straight") and are believed to ascribe negative child behavior to internal, stable, and global child characteristics (e.g., "my child does not comply, because he is a difficult child"). According to the model, these attributional differences between high-risk/ physically abusive parents and low-risk/ non-abusing parents will be greatest when the child's behavior in question is ambiguous in nature, and/or is a minor transgression (Milner, 1993, 2003).

Stage 3: Information integration and response selection. After the perception and attribution stage, the parent integrates information and selects a response. According to the SIP-model, high-risk parents are less likely to take situational, mitigating information into account (e.g., "he spilled the milk, because his big sister bumped him") (Milner, 1993,2003). They may notice the information, but it is proposed that they find it less important when selecting a response than other parents, and will stick more to general ideas about parenting and child development (i.e., pre-existing schemata). Often these general ideas are more rigid and biased ("no matter what, children should not spill milk and therefore must be held responsible for it") than those of non-abusive parents. In addition, it is proposed that these parents have less knowledge about positive parenting techniques (e.g., sensitive discipline: time-out, induction, distraction) and are equipped with a limited repertoire of parenting skills. As a consequence, they will be less able to use appropriate parenting techniques and apply them flexibly in the next stage (Milner, 1993, 2003).

Stage 4: Response implementation and monitoring. The fourth stage is an executive stage, after giving meaning to the child's behavior and selecting a parenting response in

the three previous stages, in this stage the parent implements the selected response and monitors its effect. Parents at risk for abuse are expected to select more often a power-assertive parenting technique and lack the ability to implement a positive parenting technique, based on their shortcoming in parenting knowledge and their biased expectations concerning compliance (Milner 1993, 2003). For example, most toddlers will have to a hear a rule dozens of times before internalizing it, so consistent parenting and patience is needed to make a child compliant. This is expected to be especially challenging for high-risk parents. When the high-risk parent fails to achieve child compliance while using a non-power assertive parenting technique, it may serve as confirmation that only power-assertive discipline works in letting the child obey (Milner, 1993, 2003). Moreover, next to the importance of being consistent and patient during implementing positive parentings techniques, during this phase parents also need to be flexible. Parents at risk for abuse are expected to be less able to monitor the effect of their parenting technique and to modify their parenting responses adequately when the situation asks for it (Milner, 1993, 2003).

Pre-existing schemata. According to the model, the processing phase is guided by pre-existing schemata (i.e., general beliefs about children and parenting/ person-specific beliefs about the child and oneself) which are partly a result of prior experiences with children, but are mainly formed by parents' experiences with their own upbringing and interactions with their own parents. Examples of pre-existing beliefs are parental attitudes towards spanking, beliefs of self-efficacy and child-related expectations. These guiding principles may form a risk for impaired processing cognitions (i.e., perceptions, attributions, response selection) when they contain inaccurate, biased information. For instance, when parents have disproportionately high child-related expectations, it is likely that they will attribute more responsibility to the child's behavior, and as a consequence are more inclined to choose and use power assertive discipline (see Figure 2). Or, when parents have the general belief that the child is disobedient in nature, they engage in selective attention that disqualifies minor attempts of the child to obey. As a consequence they will evaluate the behavior as more wrong and blameworthy, and subsequently are more likely to justify the use of power assertive discipline. Parents who are at risk for CPA are expected to have more inaccurate and biased pre-existing schemata. In addition, it is expected that their pre-existing schemata are more often accompanied by negative emotions (i.e., hostility, depression) based on negative experiences, which also affects the processing stages. Furthermore, it is thought that parents at risk rely more than other parents on those pre-existing schemes, instead of using situational cues (e.g., type of child behavior) during the processing phase.

Automatic and controlled processing. To describe how the cognitive stages of the SIP-model are interconnected and influence each other, the concepts of automatic and controlled processing (Shiffrin & Schneider, 1984) are used. Automatic processing takes place when information is processed outside of awareness, and when a person depends

primarily on pre-existing schemata. It is a process that is well established within a person. This type of processing requires little attention, and modification and suppression is very difficult. In contrast, controlled processing takes place within awareness, it places serious demands on attention, and in this type of processing a person has room for adjustments, flexibility and reflection (Milner, 1993, 2003). For example, controlled processing allows parents to attend to minor improvements in the child's behavior (Stage 1), to take situational information into account (Stage 2), to think of alternative explanations for the child-behavior (Stage 3), and to modify their parenting responses if needed (Stage 4).

Stress is thought to be responsible for a tendency to use automatic processing. The more stress a parent experiences, the more the parent will engage in automatic processing; depend on pre-existing schemata and thinking patterns that are well-learned and are easily accessible. Moreover, according to the theory, all parents use both types of processing, but high-risk parents are thought to have greater physiological reactivity to stressful stimuli and therefore may engage in more automatic-processing. And, the more this type of processing is used, the more easily it is triggered and the parent will react with a short temper (i.e., immediate and explosive reactions; Milner, 1993, 2003). Furthermore, it is expected that automatic processing produces different outcomes in parents at risk for abuse, because of their biased pre-existing schemata. In addition, it is proposed that when child-related stress causes automatic processing, it is likely that other child-related emotions and cognitions will also be triggered, which are expected to be negative for high-risk parents (e.g., anger and hostility; Milner, 1993, 2003).

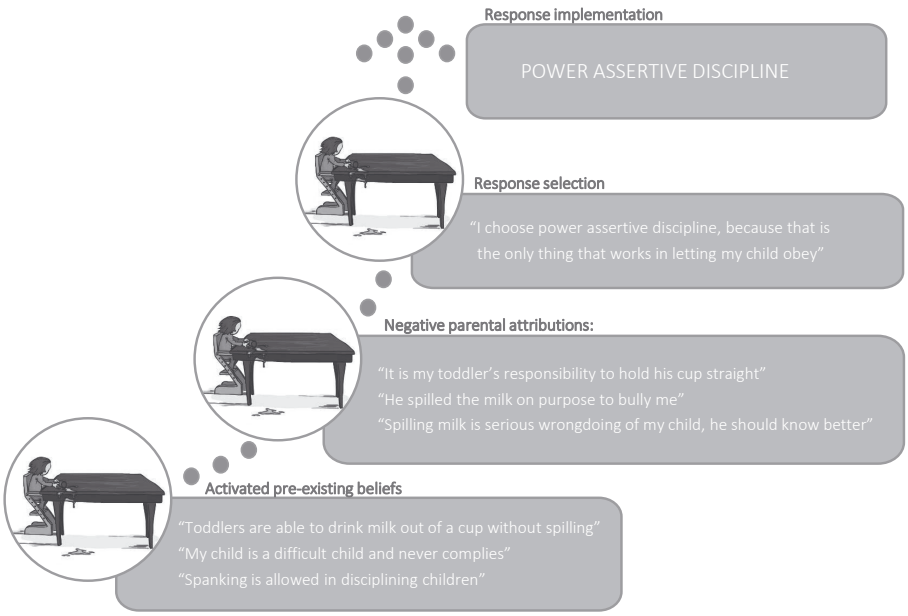

Figure 2. Example of negative parental attributions within SIP-model

Parental Attributions

Parental attributions are probably the most studied parental cognition of the SIP-model. Scientifically, parental attributions gained attention in the late 80's and early 90's as an extension of "attribution theory" (Heider, 1958; Kelley, 1967; Weiner, 1972). Where attributions in general apply to interpreting and evaluating behavior of both others and the self, parental attributions refer to parents' thoughts about children. Given the information parental attributions provide on social cognition and the effect of such attributions on parental behavior towards their children, and hence child development, made them interesting for scholars investigating parenting (Miller, 1995).

The first studies on parental attributions focused on parental attributions in relation to academic outcomes of children. Later, social behavioral outcomes, such as agression and withdrawal also gained the interest of scholars. Originally parental attributions were studied in terms of attributional dimensions (Weiner, 1985, 1986) such as locus of control (internal vs. external), stability (stable-unstable), and controllabilty (controllable-uncontrollable) (Miller, 1995). Empirical evidence showed that parents tend to attribute postive outcomes more to *internal stable controllable* characteristisc of the child and the parent, and negative outcomes to *external situational uncontrollable* factors. This so called *self-serving bias* – attributing child behavior that positively reflects on either the child or the parent – may serve the parent to maintain a positive self concept (Miller, 1995). Moreover, the literature clearly suggests that there are attributional differences between parents. For example, parents who are angry, depressed, and/or stressed are proposed to attribute child behavior more negatively, compared to other parents (Miller, 1995). Regarding maltreating parents, proof for the exact opposite direction of the self-serving bias has been found; mothers rated negative behavior more to internal and stable child characteristics, outside of the parent's control, and postive behavior to the inverse (e.g., Larrance & Twentyman, 1983; Bugental, Blue, Cruzcosa, 1989). These parents may conclude their children are uncontrollable while they have tried everything. This might also serve self-presevation purposes; when there is nothing in your control that you can do about your child's behavior, you cannot be blaimed for it.

With the introduction of the SIP-model that included the parental attribution as a key element in studying predictors of child maltreatment, empirical studies with parental attributions took a huge leap. In the last 25 years, many more studies confirmed the proposed attributional difference between high-risk/ maltreating parents and low-risk/ non-maltreating parents (e.g., Burchinal, Skinner, & Reznick, 2010; De Paul, Asla, Perez-Albeniz, & De Cadiz, 2006; Farc, Crouch, Skowronski, & Milner, 2008; Irwin, Skowronski, Crouch, Milner, & Zengel, 2014; Milner & Foody, 1994; Slep & O'Leary, 1998). For example, it was found that mothers who attributed more responsibility to their child's negative behavior, were also mothers who were more overreactive in their discipline strategies (Slep & O'Leary, 1998). A study by Farc et al. (2008) found that high-risk parents attributed

ambiguous child pictures as more hostile, compared to low-risk parents; and it was found that high-risk mothers showed no changes in parental attributions concerning stability and intentionality after mitigating information, where low-risk mothers attributed child behavior more unintentionally and less stable after receiving this information (Milner & Foody, 1994).

Nevertheless, some studies found inconclusive evidence for the proposed attributional difference between high-risk/ maltreating parents and low-risk/ non-maltreating parents (e.g., Dadds, Mullins, McAllister, & Atkinson, 2002 ; Montes, De Paul, & Milner, 2001 ; De Paul et al., 2006). For example, high-risk mothers were found to attribute more hostility, but no overall differences were found for internal/external attributions and evaluations of wrongness between high- and low-risk parents (Montes et al., 2001). Dadds et al., (2002) found proof for high-risk mothers, relative to low-risk mothers, to attribute negative child behavior more to internal characteristics and positive child behavior more to external characteristics, but they failed to find evaluation differences. It is unknown why these inconsistencies in findings exist. It might be that there are only weak attributional differences between high-risk/ maltreating and low-risk/ non-maltreating parents, and therefore it is difficult to detect a statistically robust effect. Other suggestions, such as differences in methods of attribution assessment (e.g., global vs. specific; open-ended vs. structured; vignettes vs. stories), and variations in risk definitions have been proposed (Milner, 2003).

As Milner himself stated in 2003 (and still holds relevance today), not only is there a need for replication studies, possible interaction effects of different parts of the SIP-model and the interplay with stress also need to be explored, since most studies have been focusing on particular components of the model. Moreover, most studies focus on studying relations between parts of the model, without testing causality. For example, according to the SIP-model stress causes negative parental attributions, but the inverse might also be true; stress is predicted by negative attributions. When cognitions are biased, it might be that parents in general perceive things more negatively than other parents whose cognitions are not biased, which results in experiencing more stress. Experimental study designs are needed to study causality directions as proposed by the SIP-model.

Additionally, Milner (2003) recommends that studies make use of diverse groups of parents. Not only it is recommended to study parents with different socio-cultural backgrounds, but also to include fathers while studying parental cognitions in relation to CPA. It has been suggested that fathers are different from mothers because they have other socialization roles (father: discipline, exploration vs. mother: emotional well-being, communication), they have different experiences with children (in general, mothers still spend more time with children), and they differ in biological makeup (e.g., different physiological reaction to stress) (Lamb, 2010; Kudielka & Kirschbaum, 2005). Studies that

compare fathers' vs. mothers' attributions are rare and are difficult to compare because of variation in measurement. In general, more similarities than differences seems to exist, according to an overview presented by Miller in 1995. Nevertheless, later studies suggest that there are dissimilarities in mother and father attributions (e.g., Chen, Seipp, & Johnston, 2008; Lansford et al., 2011;), and that they also might predict child and parenting outcomes differently (Werner, 2012; Williamson & Johnston, 2015).

Lastly, it is concluded that future research should link elements of the SIP-model to observational measures of parenting behavior (Milner, 2003). Evidence exists that self-reported parenting is subjected to social desirability bias and has low concordance with observational measures of parenting (Bennett, Sullivan, & Lewis, 2006; Sessa, Avenevoli, Steinberg, & Morris, 2001). To validly asses power assertive discipline is especially challenging for researchers. Suggestions have been made to use stressful parenting tasks in order to minimize self-reporting bias and to discriminate maltreating parents from non-maltreating parents (Bennet et al., 2006; Joosen, Mesman, Bakermans-Kranenburg, & Van IJzendoorn, 2012).

Focus of the dissertation

In line with the need for more knowledge about the etiology of child maltreatment for globally prioritized prevention purposes of child maltreatment, and the more specific need to deepen empirical evidence regarding interactive elements of the SIP-model, two studies were completed which will be presented in this dissertation. To be more precise, the proposed mediating role of negative parental attributions (SIP stage 2) between risk factors and disciplinary actions (SIP stage 4) was studied (see all three parts of Figure 3). In Chapter 2, findings of the first study regarding this issue are presented, and in Chapter 3 a replication study of this topic is shown, extended with observational data and data of fathers. In Chapter 4 experimental data of Study 2 regarding the suggested causal relation between stress and negative parental attributions (SIP stage 2) is presented (see first two parts of Figure 3), for mothers as well as for fathers. Lastly, in Chapter 5 overall results are discussed in terms of important comments/limitations regarding study results, implications for future research and prominently, prevention and intervention purposes.

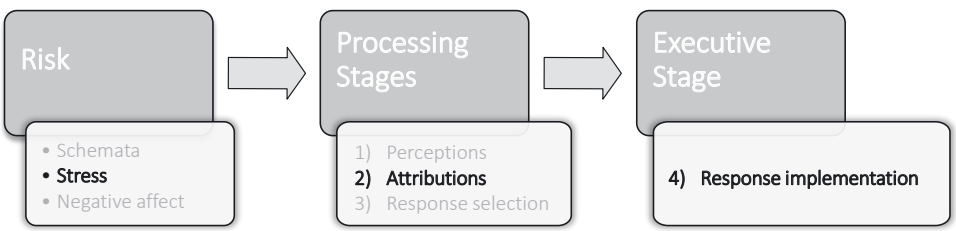

Figure 3. Part of the SIP-model that is the focus of the dissertation

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Chapter 2

The Role of Negative Parental Attributions in the Associations between Daily Stressors, Maltreatment History, and Harsh and Abusive Discipline

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Abstract

Negative parental attributions are related to parent and family stressors and are thought to be important predictors of subsequent disciplinary actions and, potentially, abusive parenting. We examined if negative parental attributions mediate the relation between daily stressors (i.e., low SES, parenting stress, partner-related stress) parents' own history of child maltreatment, and harsh and abusive parenting. Mothers (n = 53) completed a computerized attribution task and reported on daily stressors, their own history of child maltreatment and their discipline strategies. Mothers' negative parental attributions mediated the association between parenting stress (but not the other stressors) and harsh and abusive discipline. These finding implicate that interventions to decrease (the risk of) child abuse should not only focus on reducing abuse-related stressors, but also target negative parental attributions.

Keywords: parental attributions, harsh discipline, child abuse, parenting stress, information processing

Introduction

The research literature identifies many different types of risk factors for harsh and abusive parenting (Stith et al., 2009). Different types of daily stressors, such as socioeconomic strain, marital discord, and parenting problems have been studied as risk factors for harsh and abusive parenting, and are found to negatively influence parents' ability to use positive and effective discipline strategies (Coln, Jordan, & Mercer, 2013; Liu & Wang, 2015; Puff & Renk, 2014). In addition, parents' own history of child maltreatment is found to be a crucial risk factor for the parent to maltreat their own children (e.g., Dixon, Browne, & Hamilton-Giachritsis, 2005; Pears & Capaldi, 2001). A possible underlying mechanism that explains why current stress and past experiences of maltreatment relate to harsh and abusive parenting is parental attributions (i.e., parental interpretations and evaluations of child behavior; Milner, 1993, 2003). According to the Social Information Processing (SIP) model negative parental attributions are important predictors of subsequent disciplinary actions and potentially, harsh or abusive parenting (Milner, 1993, 2003). The model theorizes that parents who attribute responsibility and hostile intent to the child and evaluate the behavior as more serious and wrong, are at risk for child abuse. Further, high stress levels and the experience of childhood maltreatment are thought to predict negative parental attributions (Milner, 1993, 2003). This implies a mediation model from current stressors and past maltreatment via negative attributions to harsh and abusive parenting that has not yet been empirically examined as such. Therefore, the aim of the present study is to explore negative parental attributions as mediators that may explain why current stress and childhood maltreatment relate to the use of harsh and abusive discipline.

Stress can be caused by a broad range of factors. At the family level an important source of stress is low socioeconomic status (SES). The Family Stress Model (FSM; Conger & Conger, 2002; Conger & Donnellan, 2007) posits that parents with a low SES experience elevated levels of stress because of the economic hardship (e.g., low income, high debts, work instability) they encounter. As a consequence, parents will be more irritable, harsh, and inconsistent in their disciplinary practices. Several empirical studies support this relation between a low SES and the use of harsh discipline and abusive parenting. For example, low educational level and unemployment predict harsh discipline (Dodge, Pettit, & Bates, 1994), and physically abusive parents were found to be significantly more often parents with a low education, a low income, a lower occupational level, and being more often unemployed than non-abusive parents (Cappelleri, Eckenrode, & Powers, 1993; Euser et al., 2013; Sedlak et al, 2010; Whipple & Webster-Stratton, 1991). Moreover, poverty levels are associated with higher rates of child maltreatment (Eckenrode, Smith, McCarthy, & Dineen, 2014; Sedlak et al, 2010).

An additional family-related stress factor that is linked to more harsh discipline and abusive parenting, is stress caused by interparental conflict and marital dissatisfaction

(i.e., partner-related stress). Empirical evidence extensively demonstrates the relation between partner-related stress and abusive parenting. For example, abusing parents and those at risk for abusive parenting have been found to be more dissatisfied with their relationships (Chan, 1994; Salisbury, Henning, & Holdford, 2009), report less support from their partners (Whipple & Webster-Stratton, 1991), and hold less positive opinions of their partners (Smith, Hanson, & Noble, 1974), compared to other parents. In addition, marital conflict and low marital quality are related to the use of more coercive and harsh discipline (Chang, Lansford, Schwartz, & Farver, 2004; Coln et al., 2013; Kaczynski, Lindahl, Malik, & Laurenceau, 2006).

Another source of stress at the family level that might be particularly relevant in predicting harsh and abusive parenting is the stress a parent experiences in relation to parenting tasks and challenging child behaviors (i.e., parenting stress). Parenting stress results from a disturbance in balance between parents' perceptions of demands of parenting and their perceptions of their resources meeting those demands (Deater-Deckard, 2004). In general, the difficulty that arises from the responsibility of raising children, leads to higher levels of stress (Crnic & Greenberg, 1990). Nevertheless, feelings of competence in parenting and the experience of level of demandingness can differ greatly among parents. We would like to emphasize that this is not to be confused with negative parental attributions. For example, parents can experience their children as highly demanding (i.e., stressful), without attributing this behavior as negative (e.g., "It is normal for young children to be demanding"). According to the Parenting Stress Model (Abidin, 1990), parents who experience high levels of challenging child behavior, dysfunctional parent-child interactions and low levels of available resources (i.e., parenting stress), are also parents who engage in more negative, authoritarian parenting. Research demonstrates that parenting stress is indeed a risk factor for the use of harsh and abusive discipline. For example, parenting stress is related to the use of more corporal punishment and psychological aggression (Anthony et al., 2005; Liu & Wang, 2015; Rodgers, 1998), and more authoritarian, power-assertive discipline strategies (Deater-Deckard & Scarr, 1996). Additionally, it has been found that abusive mothers experience significantly more parenting stress than non-abusive mothers (Chan, 1994).

In addition to risk factors at the family level, a parent's own history of child maltreatment is seen as a crucial risk factor for the parent to become maltreating to their own children (Berlin, Appleyard, & Dodge, 2011). This is supported by many studies that confirm the intergenerational transmission of child maltreatment, and studies that found a relation between childhood maltreatment and the use of harsh and abusive discipline (Coohey & Braun, 1997; Dixon et al., 2005; Newberger, Hampton, Marx, & White, 1986; Pears & Capaldi, 2001; Whipple & Webster-Stratton, 1991).

Some research has been done on mediating mechanisms that might explain the relation between stress and harsh and abusive discipline practices and the intergenerational

transmission of child maltreatment. For instance, the relation between economic stress and harsh parenting was found to be mediated by parental depression (McLoyd, Jayaratne, Ceballo, & Borquez, 1994; Parke et al., 2004), and the intergenerational continuity of abuse has been found to be partially mediated by early childbearing and cohabiting with a violent person (Dixon et al., 2005). However, most research demonstrates the direct associations of stress and prior childhood maltreatment with the use of harsh and abusive parenting without testing mediational pathways. Based on the SIP-model, we examine parental attributions as possible mediators that may explain why stress and childhood maltreatment relate to harsh and abusive parenting.

Parental attributions are defined as parental interpretations and evaluations of child behavior (Milner, 1993, 2003). The SIP-model theorizes that when parental attributions are biased, the quality of parenting behavior can be compromised and might even take the form of abusive parenting. Parents who have biased attributions are hypothesized to attribute more responsibility and more hostile intent to the child (e.g., "he spilled the milk because he wants to get back at me"), and evaluate child behavior as more serious, wrong, and blameworthy compared to other parents. In addition, these parents are expected to be less able to think of alternative explanations for the child's behavior (e.g., "he spilled the milk, because he is too young to hold the cup straight") and are believed to ascribe negative child behavior to internal, stable, and global child characteristics. The more the parent attributes the child behavior as negative, the higher the chance that the parental disciplinary response will be harsh, and may subsequently result in abuse (Milner, 1993, 2003).

Furthermore, the SIP-model describes that the current experience of stress and the experience of childhood maltreatment are risk factors for the parental attribution to become biased. Stress is thought to be responsible for the parent's automatic and rigid rather than controlled and flexible information processing (Milner, 1993, 2003). Empirical evidence shows that people who are (chronically) stressed show cognitive impairments, such as problems in learning and memory (Kuhlmann, Piel, & Wolf, 2005; Lupien, Maheu, Tu, Fiocco, & Schramek, 2007), and are indeed more likely to process information automatically and habitually instead of in a controlled and flexible manner (Hermans, Henckens, Joëls, & Fernández, 2014; Vogel et al., 2015). During automatic processing, parents are less likely to take situational information into account. As a consequence, parents are less able to understand the child's behavior within the actual context and will attribute more responsibility to the child, and evaluate the child's behavior as more wrong (Milner, 1993, 2003). The experience of childhood maltreatment is thought to be a cause of having biased pre-existing cognitions (e.g., general beliefs about children and child rearing), given that moral standards and beliefs regarding children and parenting are thought to mainly develop in the family of origin (Milner, 1993, 2003; Van IJzendoorn, 1992). Particularly when parents evaluate ambiguous child behavior, challenging but age-appropriate child behavior, and minor transgressions, it has been proposed that

parents are more likely to be influenced by their pre-existing cognitions (Milner, 1993, 2003).

In sum, important risk factors that are related to harsh and abusive parenting are the current experience of stress and past experiences of childhood maltreatment. Mediating pathways that explain this relation are rarely studied. We explore parental attributions as a potential mediating mechanism, and hypothesize that:

1. Current stressors and past childhood maltreatment are related to more harsh and abusive discipline in parents.

2. Negative parental attributions are related to more harsh and abusive discipline.

3. Negative parental attributions mediate the relations between current stressors, past childhood maltreatment and harsh and abusive discipline.

Method

Sample

We were interested in studying variance in stressors and harsh and abusive discipline within the general population, and thus used a non-risk sample. Convenience sampling was used. Participants were recruited in different ways in order to include families with various socio-economic backgrounds. Mothers were recruited through health care services and door-to-door flyer distribution. Information about the study was provided by brochures, an internet page, and verbally by recruiters. Mothers could self-enroll by filling out a short questionnaire on the internet about family characteristics and were contacted by telephone within a few days. Because cultural background could influence the way parents evaluate child behavior (i.e., parental attributions), we chose to only include parents with one specific cultural background (i.e., Dutch). Mothers were eligible for participation if they had a child in the age range of 2-6 years old, were living in the Netherlands, had the Dutch nationality and self-identified as having a Dutch cultural background. Exclusion criteria were mother's psychopathology, severe intellectual or physical handicaps of the mother or the child, and not speaking the Dutch language. Mothers reported this on the enrollment questionnaire. Anonymity was guaranteed.

The recruitment resulted in a total number of 56 mothers and their biological children. Due to missing data on one of the measurements, three mother-child dyads were excluded from analysis. These dyads did not significantly differ from the final sample (n = 53) on family income, maternal age and education, child age, and gender of the child (all ps > .05). For the final group maternal educational level had the following distribution: 4% low, 30% average, 65% high, meaning that most mothers completed an education

after high-school. Monthly net family income was on average € 2,805 (*SD* = 1,013, range 1,000-4,250), which is slightly above the average income of the Dutch population. Most of the mothers were married and/or living with the biological father of their child (83%), a few were single parents (13%), and the remaining mothers lived with a new partner who helped raising the child (4%). The mothers were between 22.0 and 48.6 years old (*M* = 34.0, *SD* = 6.7). The participating children were between 2.0 and 6.0 years old (*M* = 3.7, *SD* = 1.1), 51% were boys.

Procedure

Data were collected during a home visit and a laboratory visit. The aim was to complete the laboratory visit within a week after the home visit. During the home visit mother-child dyads were filmed and mothers were asked to fill out several questionnaires. Mothers were then invited to visit the lab at the university where they completed computer tasks and filled out more questionnaires. Mother and child received a small gift after the home visit and at the end of the study they received a gift coupon of €75 and a DVD with the recordings of the home visit. Informed consent was obtained from all mothers. Procedures and measures were approved by the Ethical Committee of the Institute of Child Studies of Leiden University.

Measures

Socioeconomic status. Mothers were asked to report their highest completed education and their monthly net family income, $r(51) = .27$, $p < .05$. To calculate their socioecomic status (SES) both scores were standardized before computed into a sum score for total SES. Lower scores indicated lower SES.

Partner-related stress. Mothers completed the marital scale of the Maudsley Marital Questionnaire (MMQ; Crowe, 1978). The scale consists of 10 items about the mother's relationship with her partner. Examples of questions are: 'How much tension, coolness, quarrelling, nagging and violence is there in the marriage?' and 'Can you let you partner know your true feelings?'. Answers were given on an 8-point Likert scale (0 *very positive* to 8 *very negative*). Six mothers did not have a partner, these mothers did not significantly differ from the final sample ($n = 53$) on the study variables (all ps > .21). Analyses with the MMQ were done on a sample of 47 mothers. The Cronbach's alpha of the marital scale in this sample was .85.

Parenting stress. Parenting stress was measured with the Parenting Daily Hassles Scale (PDH; Crnic & Greenberg, 1990). Mothers rated 20 statements about potential hassles related to challenging child behavior and parenting tasks that occurred in their

family in the previous week, such as 'My child resists or struggles with me over bed-time' and 'I have difficulties in getting my child ready for outings and leaving on time'. A 5-point Likert scale was used to measure parent's assessment of the intensity of the hassles, ranging from 0 *no burden* to 4 *great burden*. The Cronbach's alpha of the PDH scale in this sample was .71.

Childhood maltreatment. To measure different types of maltreatment the mother may have experienced during her childhood the Childhood Trauma Questionnaire (CTQ; Thombs, Bernstein, Lobbestael, & Arntz, 2009) was used. The questionnaire consists of 24 items assessing the experience of emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Mothers rated statements such as 'People in my family called me things like stupid, lazy, or ugly' and 'People in my family hit me so hard that it left me with bruises or marks' on a 5-point Likert scale (0 *never true* to 5 *very often true*). For analysis the total mean score was used. Internal consistency of the total scale was α = .92.

Negative maternal attributions. To test negative maternal attributions of ambiguous child behavior a computerized task was developed, called the Parental Attributions of Child behavior Task (PACT) . The task consisted of presentations of ten ambiguous drawings of child behavior that could be explained as either being naughty or clumsy, and five drawings of neutral child behavior. Mothers were specifically asked to imagine their own children while evaluating the behavior in the drawings. Each time, two ambiguous illustrations were followed by a neutral one. Examples of ambiguous situations are: a child tripping over a laptop wire while chasing a ball, causing the laptop to fall off the table; a child picking flowers from a garden and giving them to someone; a child spilling food while eating with fork and knife. Examples of neutral situations are: a child reading a book; a child riding a bike; a child playing in the sandbox. Although the outcome of the behavior in the ambiguous pictures was negative (e.g., broken laptop, stains on clothing), it was disputable if the behavior that caused the outcome should also be evaluated as negative (i.e., wrong, blameworthy). The aim of the task was to measure the evaluation of the behavior; the attribution. The children in the drawings were gender neutral and were drawn without any facial expressions, to prevent interference of these features with the interpretation of the behavior in the picture. After showing the illustration of the child behavior for 4000 ms, mothers were asked to quickly answer eight attribution questions within 3500 ms each; four negative questions (e.g., 'Do you think this is naughty?') and four positive questions (e.g., 'Do you think this is cute?'). Each question could be answered with YES or NO. We were interested in the mothers' immediate responses. By letting parents choose between a simple YES/NO, instead of using a scale measure, we could ask the parent to answer quickly (within 3500 ms), thereby aiming at a realistic simulation of mothers' thinking process. The answers to the four negative attribution questions were used to assess the parent's level of negative attributions of the behavior. We mainly tried to tap into the evaluative (wrongness, blameworthiness) part of the negative attribution.

When a negative attribution question was answered with YES, this was counted as a negative attribution (i.e., score 1). Negative maternal attributions could range from 0 to a maximum score of 40. Cronbach's alpha for negative attributions was .89.

Maternal harsh and abusive discipline. We combined two self-report measures to assess maternal harsh and abusive discipline. The first measure we used was the Parenting Scale (PS; Arnold, O'Leary, Wolff & Acker, 1993). The PS provides a measure for dysfunctional discipline strategies (discipline mistakes), divided into three subscales: overreactivity, laxness, and verbosity. We used the overreactivity scale, which reflects overreactive disciplinary actions such as displays of anger, meanness, and irritability (Arnold et al., 1993). Mothers indicated which of two statements (A and B) described their discipline tendency best on a 5-point Likert scale (ranging from 1 *A completely applies* to 5 *B completely applies*). An example of two statements is: 'A. When my child misbehaves I usually do not get into an argument' **–** 'B. I usually get into a long argument with my child'. Another example is: 'A. When my child misbehaves I spank, slap, grab, or hit my child…Never or rarely' – 'B. Most of the time'. The higher the score, the more overreactive discipline the parent uses.

The second measure that was used for assessing maternal harsh and abusive discipline was the Conflict Tactics Scale Parent Child (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1997). The CTSPC is a questionnaire with 32 items that obtains reports of maltreatment from parents. The questionnaire has six subscales. We were interested in the subscales minor physical assault, severe physical assault, and psychological aggression. Because of the absence of severe physical assault in our sample, only the subscales minor physical assault and psychological aggression were used. Mothers rated statements on a 5-point Likert scale ranging from 1 *never* to 5 *(almost) always*. Example items are 'I slapped my child on the hand, arm, or leg', 'I shook my child', 'I pinched my child' (physical assault), and 'I shouted, yelled, or screamed at my child', 'I swore or cursed at my child', and 'I said I would send my child away or kicked him/her out of the house' (psychological aggression). Higher scores indicated more minor physical assault and psychological aggression.

Subscales of the different measures were significantly correlated: overreactivity and minor physical assault $r(51) = .39$, $p < .01$, overreactivity and psychological aggression $r(51) = .48$, $p < .01$, and minor physical assault and psychological aggression $r(51) = .57$, $p < .01$. We therefore combined the PS overreactivity subscale with the CTSPC minor physical assault and psychological aggression subscales into one harsh and abusive discipline scale. A total mean score was computed after standardizing the scores, with higher scores meaning more use of harsh and abusive discipline. Internal consistency of this combined scale was $\alpha = .74$.

Data Analysis

SPSS 23.0 was used to conduct data-analysis. There were no outliers on any of the study variables, as evidenced by the absence of standardized individual scores lower than -3.29 or higher than 3.29 (Tabachnick & Fidell, 2012). All study variables were normally distributed. The Preacher and Hayes (2004) method was applied using the online available PROCESS macro for SPSS (Hayes, 2013) to test mediation.

Results

Preliminary-Analysis

We tested whether the ambiguous pictures in the PACTelicited different responses from the mothers than the neutral pictures to confirm the main premise of this instrument. Indeed, mothers had higher scores on the negative attribution questions in reaction to the ambiguous pictures, compared to the neutral pictures, $t(52) = -15.76$, $p < .001$, $d = -2.74$.

Correlations and descriptive statistics for study variables and relevant background variables are displayed in Table 1. Mothers who expressed more negative attributions in the computer task reported more parenting stress and harsh and abusive discipline. No significant associations were found between any of the other study variables, so no mediation was tested for these varaibles. Regarding the background variables (i.e., age mother, age child, gender child, number of children), none of them were related to both negative attributions and harsh and abusive discipline, so they were not added as covariates in subsequent mediation analysis.

Table 1

Summary of Correlations, Means, Standard Deviations and Range for Background and Study Variables (n=53)

	1	2	3	4	5	6	7	8	9	*M* (*SD*)	*Range*
Background variables											
1. Age mother										34.02 (6.66)	22.00-48.60
2. Age child	.16									3.75 (1.06)	2.02-6.03
3. Gender child	.18	-.01								1.49 (0.51)	1.00-2.00
4. Number of children	.48**	-.12	.04							1.85 (0.93)	1.00-4.00
Study variables											
5. SES	.28*	-.14	-.28*	.40**						0.02 (1.58)	-3.67-2.67
6. Parenting stress	.18	-.04	.08	.23	.05					0.71 (0.32)	0.10-1.55
7. Partner-related stress	.06	.39**	.16	.02	-.13	.13				1.16 (0.83)	0.20-4.00
8. Childhood maltreatment	.21	-.06	.19	.21	-.07	.01	.15			1.40 (0.47)	1.00-2.88
9. Negative attributions	.27*	.02	-.16	.31*	.14	.47**	.12	-.11		16.25 (7.43)	1.00-37.00
10. Harsh and abusive discipline	.06	.33*	-.20	.07	.16	.19	.21	-.06	.34*	0.00 (0.81)	-1.23-2.32

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

Mediation Model

Since negative attributions were only significantly associated with the risk factor parenting stress and harsh and abusive discipline, the mediation model was solely tested for parenting stress (see Figure 1). One thousand bootstrap resamples were used and 95% bias corrected (BC) confidence intervals were computed. The indirect path from parenting stress, through maternal negative attributions, to harsh and abusive discipline was significant, $B = 0.36$, *S.E.* = 0.19, 95% BC *CI* = 0.08, 0.79. The direct effect of parenting stress on harsh and abusive discipline was not significant, $B = 0.12$, *S.E.* = 0.37, $p = .75$. So, the relation between parenting stress and maternal harsh and abusive discipline was fully mediated by maternal negative attributions.

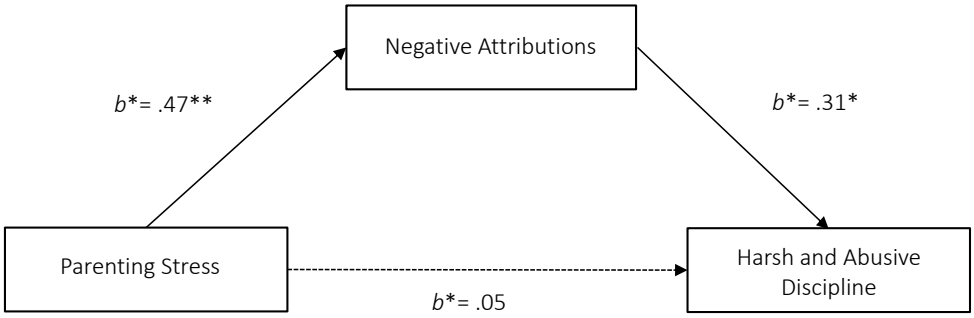

Figure 1. Mediation model of parenting stress on harsh and abusive discipline by negative maternal attributions.

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

Discussion

We have shown that negative parental attributions mediate the association between current experience of parenting stress and harsh, potentially abusive, discipline. We found no such relations for the other current stressor variables (i.e., low SES and partner-related stress) or for past childhood maltreatment.

Our mediating model is in line with the SIP-model, which theorizes that high stress levels predict negative parental attributions, which in turn predict subsequent disciplinary actions and potentially, harsh or abusive parenting (Milner, 1993, 2003). We found that mothers' current experience of parenting stress had an indirect effect on their use of more harsh and abusive discipline via their negative attributions. According to the SIP-model, the type of processing (i.e., automatic or controlled) that is used by the parent while evaluating child behavior is influenced by stress (Milner, 1993, 2003). Applying this model to our findings, the experience of parenting stress may have caused mothers to operate more on automatic pilot. As a consequence, mothers may have had difficulties taking situational factors into account while evaluating the ambiguous child pictures and may have been less able to understand the child's behavior within the actual context. This would explain their evaluations of the child's behavior as more wrong (i.e., negative attribution) and in turn, these negative attributions were related to the mothers' increased level of harsh and abusive discipline.

Only one of the predictors was found to be associated with negative parental attributions. We found an association between parenting stress and negative parental attributions and not between the other current stressor variables (i.e., low SES and partner-related stress) or for past childhood maltreatment and negative parental attributions. An explanation for this lack of findings might be that the type of stress that negatively influences parental attributions is quite specific. According to the SIP-model, it is hypothesized that when automatic processing is caused by child-related stress, it is likely that other emotions and cognitions related to the child will also be triggered, which are expected to be negative for parents at risk for child abuse (e.g., anger and hostility; Milner, 1993, 2003). Thus, automatic processing in combination with negative child-related emotions and cognitions caused by parenting stress are likely to negatively affect parental attributions. The drawings of ambiguous child behaviors may have elicited more negative cognitions in parents who experienced more parenting stress, because the behavior on the picture reminded them of negative parenting experiences, making them more susceptible to automatic processing.

Because our data are correlational it should be noted that it is also possible that parents with more negative attributions experience more parenting stress. The SIP model differentiates between parental attributions which are theory-driven (i.e., more general pre-existing attributions; e.g., "when children disobey they are purposefully testing the

parent"), and parental attributions that are context-driven (i.e., processing attributions; e.g., "my child spilled the milk because he wants to get back at me"). The SIP-model theorizes that pre-existing attributions can influence how parents experience and cope with (parenting) stress (like an "internal working model", Bowlby, 1982), while processing attributions are rather influenced by stress (i.e., automatic processing; Milner, 1993, 2003). Because we studied context-driven attributions, we propose that parenting stress negatively affected parental attributions, rather than the other way around. Of course, this needs to be tested in future experimental research.

This study has some limitations. First, we used self-report questionnaires to measure harsh and abusive discipline. We are aware of the limitations of using self-report measures, such as social desirability bias, and highly recommend the use of observational measures where possible in replicating our study. A second limitation is our small sample size, which makes it more difficult to identify relations between variables. However, we did find quite a large effect size for negative parental attributions in relation to parenting stress and harsh and abusive parenting. A third limitation is that, although we tried to include mothers with different socioeconomic backgrounds for a representative sample, our final sample consisted of mothers with a relatively high SES background. As a consequence, we should cautiously generalize our findings. Furthermore, we only selected Dutch mothers to participate in our study, so generalization claims should mainly focus on mothers with this, or a comparable, cultural background. Last, our study focused on mothers and did not include fathers. Some literature suggests that mother and father attributions for child behavior are not only different (Chen, Seipp, & Johnston, 2008; Lansford et al., 2011), but also predict child and parenting outcomes differently (Werner, 2012; Williamson & Johnston, 2015). We encourage future research to study the paternal attributions in addition to the maternal attributions in relation to harsh and abusive discipline.

In conclusion, we found that negative parental attributions function as a mediator in the relation between parenting stress and harsh, potentially abusive, discipline. This highlights the importance for future research to study processing attributions as underlying mechanisms that can explain the relation between risk factors and harsh and abusive parenting. Experimental and longitudinal study designs should elaborate our cross-sectional results to further confirm the suggested pathways as proposed by the SIP-model. Moreover, we used a general- population sample in which harsh and abusive discipline rarely occur. We cannot automatically generalize these results to a high-risk population. Replication with a high-risk sample would shed more light on the applicability of our findings to other populations. When studying risk factors for parental attributions special attention should be paid to stressors that are directly related to the child or to parenting, since those seem to have the largest influence on the evaluation of ambiguous child behavior, and indirectly on harsh and abusive parenting. Our results implicate that interventions to decrease (the risk of) child abuse should not only focus on reducing abuse-related stressors, but also target negative parental attributions.

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Chapter 3

Negative Parental Attributions Mediate Associations between Risk Factors and Dysfunctional Parenting: A Replication and Extension

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Abstract

The primary goal of the current study was to replicate our previous study in which was found that negative maternal attributions mediate the association between parenting stress and harsh and abusive discipline. In addition, we investigated this association in fathers, and added observational parenting data. During two home visits mothers and fathers were observed with their children (age 1.5-6.0 years), filled in questionnaires, and completed the Parental Attributions of Child behavior Task (PACT; a computerized attribution task). Similar to our previous study, negative parental attributions mediated the relation between parenting stress and self-reported harsh and abusive parenting for both mothers and fathers. For mothers, this mediation effect was also found in the relation between parenting stress and lower levels of observed supportive parenting in a challenging disciplinary task. In addition, the relation of partner-related stress and abuse risk with harsh, abusive, and (low) supportive parenting were also mediated by maternal negative attributions. When parenting stress, partner-related stress, and abuse risk were studied in one model, only parenting stress remained significant. Results are discussed in terms of the importance of targeting parental attributions for prevention and intervention purposes in families experiencing stress.

Keywords: Parental attributions, harsh discipline, supportive parenting, child abuse, parenting stress, information processing

Introduction

Worldwide, millions of children are victims of child abuse and neglect (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2015). As a result, many of these children experience serious consequences in the short term as well as in the longer term, with an increased risk for physical, psychological, and behavioral problems (e.g., Alink, Cicchetti, Kim, & Rogosch, 2012; Jonson-Reid, Kohl, & Drake, 2012). To prevent such problems later in life it is important to investigate the etiology of child maltreatment. According to the Social Information Processing (SIP) model negative parental attributions are important predictors of subsequent disciplinary actions and potentially, harsh or abusive parenting (Milner, 1993, 2003). Parents who attribute responsibility and hostile intent to the child and evaluate the behavior as more serious and wrong, are at risk for child abuse. Furthermore, disproportionately high child-related expectations, positive attitudes towards physical discipline, high stress levels, and the experience of childhood maltreatment by their own parents, are potential risk factors for negative attributions (Milner, 1993, 2003). The two latter factors were investigated in our previous study in relation to parental attributions and harsh and abusive parenting (Beckerman, Van Berkel, Mesman, & Alink, 2017). We found that the association between current experience of parenting stress and harsh and abusive discipline was mediated by negative parental attributions. No such associations were found for the other stress factors or for past childhood maltreatment. The objective of the current study was to replicate the previous study using a larger sample, and to further extend the findings by also including fathers, an additional risk factor (i.e., general child abuse risk), and observed parenting in addition to questionnaire data.

Parental attributions are defined as the parent's interpretation and evaluation of child behavior (Milner, 1993, 2003). The SIP model argues that judgments concerning child behaviors of parents at risk for child abuse differ, both quantitatively and qualitatively, from judgments of parents without such risk. Not only do parents at risk report more negative child behavior in daily situations, they also show differences in evaluations and attributing intentionality of child behavior compared to other parents. Parents who are at risk for child abuse may associate children's naughty or clumsy behaviors more often with internal and stable child characteristics and hostile intentions (e.g., "he spilled the milk because he wants to get back at me"). These parents are also expected to be less able to think of alternative explanations for the child's behavior (e.g., "he spilled the milk, because he is too young to hold the cup straight"). As a consequence, parents at risk for child abuse will attribute more responsibility to the child, and evaluate the child's behavior as more serious, wrong, and blameworthy compared to other parents which in turn elevates the risk for dysfunctional parenting strategies to follow (i.e., power assertive and harsh discipline; Milner, 1993, 2003).

The current experience of stress and the past experience of childhood maltreatment are important risk factors for parental attributions to become biased (Milner, 1993, 2003).

Stress is thought to influence an individual's coping skills which results in automatic and rigid rather than controlled and flexible information processing. During automatic processing parents are less likely to take situational information into account. As a consequence, parents are less able to understand the child's behavior in context and will attribute more responsibility to the child, and evaluate the child's behavior as more wrong (Milner, 1993, 2003). Empirical evidence shows that people who are (chronically) stressed show cognitive impairments, such as problems in learning and memory (Kuhlmann, Piel, & Wolf, 2005; Lupien, Maheu, Tu, Fiocco, & Schramek, 2007), and are indeed more likely to process information automatically and habitually instead of in a controlled and flexible manner (Hermans, Henckens, Joëls, & Fernández, 2014; Vogel et al., 2015).

The experience of childhood maltreatment is thought to influence parental attributions through the effect it has on parents' pre-existing cognitions (i.e., general beliefs about children and childrearing; (Milner, 1993, 2003). The model theorizes that these general beliefs are a result of prior experiences with children, but that they are mainly formed by experiences parents had in their own childhood with their own caregivers. It has been proposed that parents are particularly influenced by their pre-existing cognitions when they evaluate ambiguous child behavior (i.e., challenging but age-appropriate child behavior; Milner, 1993, 2003).The idea that parenting is guided by pre-existing schemata, is similar to the assumption of the attachment theory that internal working models provide a basis for parenting (Milner, 2003). According to attachment theory, mental representations of the self and others (i.e., internal working models) are formed in the context of child-caregiver relationship (i.e. attachment), and guide future thought, feelings, and behavior (Bowlby, 1969, 1973). There is indeed evidence that such intergenerational transmission of parenting occurs (Verhage et al., 2016; Van IJzendoorn, 1992).

A large number of studies have confirmed the hypothesized differences in parental attributions of parents at risk for abuse or parents who are abusing, versus low-risk and non-abusing parents (e.g., Ateah & Durrant, 2005; Burchinal, Skinner, & Reznick, 2010; Chilamkurti & Milner, 1993; De Paul, Asla, Perez-Albeniz, & De Cadiz, 2006; Irwin, Skowronski, Crouch, Milner, & Zengel, 2014; Larrance & Twentyman, 1983; Slep & O'Leary, 1998). Far less research has examined parental attributions in relation to current stress and childhood maltreatment, and its potential mediating role between risk factors and harsh and abusive parenting. Some empirical evidence is available. For example, parenting stress and socioeconomic strain were found to be associated with negative parental attributions (e.g., Berlin, Dodge, & Reznick, 2013; Haskett, Scott, Willoughby, Ahern, & Nears, 2006), and negative parental attributions were found to mediate the relation between parental abuse history and their use of harsh and abusive parenting (Dixon, Browne, & Hamilton-Giachritsis, 2005). However, most research demonstrates the direct association between current stressors or past experiences of childhood maltreatment and harsh and abusive parenting, without testing mediational pathways that include parental cognitions as suggested by the SIP-model (Stith et al., 2009).

We conducted one of the first studies exploring parental attributions as a potential mediating mechanism between daily stressors (i.e., low SES, partner-related stress, and parenting stress), parent's own history of childhood maltreatment, and harsh and abusive parenting in a general population sample (Beckerman et al., 2017). Fifty-three Dutch mothers of 2- to 6-year-old children reported on daily stressors and their experiences of childhood maltreatment and completed the Parental Attributions of Child behavior Task (PACT) a computerized attribution task (Beckerman et al., 2017). Negative parental attributions mediated the association between current experience of parenting stress and harsh and abusive discipline. This suggests that the type of stress that affects parental attribution may be quite specific to stressors that are directly related to the child or to parenting. However, several limitations of this study raise questions about the robustness of these results.

First, the sample size of the Beckerman et al. (2017) study was quite small, making it difficult to identify small effects. Second, the study only included mothers. We cannot simply apply models found for mothers to fathers, because it has been suggested that fathers are different from mothers in their parenting (mother: secure base, talk vs. father: play, exploration, discipline), in their biological makeup (different stress responses), and in the amount of time they spend with their children (although paternal involvement increased significantly since the second half of the twentieth century, on average mothers still spend more time with their children) (Kudielka & Kirschbaum, 2005; Lamb, 2010; Ramchandani, 2009). Moreover, several studies suggest that attributions concerning child behavior are not only different for mothers and fathers (Chen, Seipp, & Johnston, 2008; Lansford et al., 2011), but also predict child and parenting outcomes differently (Werner, 2012; Williamson & Johnston, 2015). So, with these important notions in mind, the current study examined negative maternal as well as paternal attributions.

In addition to the limitations of small sample size and not studying fathers, only self**-**report questionnaires were used to measure harsh and abusive parenting. There is evidence that self-reported parenting may be subject to social desirability and is not, or only moderately, correlated to observations of parenting (Bennett, Sullivan, & Lewis, 2006; Sessa, Avenevoli, Steinberg, & Morris, 2001). It has been suggested that observations of parenting in more stressful tasks are needed to discriminate maltreating parents from non-maltreating parents (Bennet et al., 2006). Thus, the use of observational measures that elicit challenging parenting situations is needed to reduce the limitation of social desirability to a minimum. In conclusion, a replication study addressing these issues is needed to validate and extend the initial findings and to shed more light on their robustness.

The objective of the current study was to replicate the previous study using a larger sample, and to extend the findings by also including fathers, using an additional risk factor (i.e., a general child abuse risk), and including observed parenting in addition to

questionnaire data. Because many studies found general abuse risk to be associated with parental attribution (e.g., Chilamkurti & Milner, 1993; De Paul et al., 2006; Irwin et al., 2014; Rodriguez, Cook, & Jedrziewski, 2012; Rodriguez & Tucker, 2015), we added this risk factor to our study. Finally, the separate mediation effects were tested in a multiple mediation model for mothers and fathers separately.

In sum, in this study we expect to replicate our finding of the previous study: negative maternal attributions mediate the relation between parenting stress and self-reported harsh and abusive parenting. We also expect this association to be significant when we use an observational measure of parenting. In addition, we hypothesize that maternal negative attributions mediate the association of other current risk factors (e.g., low SES and partner-related stress) and past childhood maltreatment, with parenting. Finally, we study the exact same mediation models for fathers and explore if the mediation models differ for fathers and mothers.

Method

Sample

We were interested in studying variance in stressors and harsh and abusive discipline within the general population, and thus recruited a non-risk sample. Convenience sampling was used. Participants were recruited in different ways in order to include families with various socio-economic backgrounds. Families were recruited through health care services, door-to-door flyer distribution and Facebook advertisements. Information about the study was provided by brochures, an internet page, and verbally by recruiters. Families could self-enroll by filling out a short questionnaire on the internet about family characteristics and were contacted by telephone within a few days. Because cultural background could influence the way parents evaluate child behavior (i.e., parental attributions), we only included families who self-identified as having a Dutch cultural background. In addition, families were eligible for participation if they had a child in the age range of 1.5-6 years old, were living in the Netherlands, and had the Dutch nationality. Exclusion criteria were mother's or father's psychopathology, severe intellectual or physical disabilities of the mother, father or the child, and not speaking the Dutch language. Participants reported on these items on the enrollment questionnaire. Anonymity was guaranteed.

The recruitment resulted in a total number of 105 participating families. In all families both mothers and fathers participated and provided all data needed for analyses Educational level was distributed as follows for mothers: 1% low (highest education: primary school or partly secondary school), 43% average (highest education: secondary school or vocational school), 57% high (highest education: Bachelor or Master); and for fathers: 5% low, 38% average, 57% high. Parents reported their monthly net family income in categories ranging from 1 (< € 1000) to 8 (> € 4000); with intermediate steps

each increasing € 500. Monthly net family income was on average between € 2500 and € 3000 (category 5; *SD* = 1.63 range 2-8), which is around the average family income of the Dutch population (Central Bureau for Statistics, 2017). The mothers were between 23.7 and 44.2 years old (*M* = 32.7, *SD* = 4.4). The fathers were between 23.6 and 51.9 years old (*M* = 35.1, *SD* = 5.0). The participating children were between 1.7 and 6.0 years old (*M* = 3.4, *SD* = 1.1), 51% were boys.

Procedure

Data were collected during a series of home visits, of which the first two are relevant for the current study. Two visits were planned with the mother and two visits with the father. The aim was to complete the second home visit within a week after the first home visit for both mothers and fathers. The order of mother and father visits was counterbalanced. Mother and father visits were on average 16 days apart. During the first home visit parent-child dyads were filmed and parents were asked to fill out several questionnaires. During the second home visit parents were asked to complete a computer task and fill out a second set of questionnaires. Parents and children received a small gift after the first home visit and at the end of the study the family received a gift coupon of €100 and a DVD with the recordings of the home visits with the child. Informed consent was obtained from all parents. Procedures and measures were approved by the Ethics Committee of the Institute of Education and Child studies of Leiden University.

Measures

Risk factors.

Family socioeconomic status. Mothers and fathers were asked to report their highest completed education and their monthly net family income. Mother and father education scores were computed into a total mean score, as well as their reports on family income; mean education and family income were positively correlated: $r(104) = 0.55$, $p < 0.01$. Both mean education scores and mean family income scores were standardized before being summed for total family SES.

Partner-related stress. Parents individually completed the marital scale of the Maudsley Marital Questionnaire (MMQ; Crowe, 1978). The scale asked parents to rate 10 items about their satisfaction of the relationship with their partner on an 8-point Likert scale (0 *very positive* to 8 *very negative*).The Cronbach's alphas of the marital scale in this sample were 0.88 and 0.89 for mothers and fathers respectively.

Parenting stress. Parenting stress was measured with the Parenting Daily Hassles

Scale (PDH; Crnic & Greenberg, 1990). Parents rated 20 statements about potential hassles related to challenging child behavior and parenting tasks that occurred in their family in the previous week on a 5-point Likert scale ranging from 0 *no burden* to 4 *great burden*. The Cronbach's alphas of the PDH scale in this sample were 0.88 and 0.83 for mothers and fathers respectively.

Childhood maltreatment. To measure different types of maltreatment parents may have experienced during their childhood the Childhood Trauma Questionnaire (CTQ; Thombs, Bernstein, Lobbestael, & Arntz, 2009) was used. Parents rated 24 statements assessing their experiences of emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect on a 5-point Likert scale (0 *never true* to 5 *very often true*). For analysis the total mean score was computed. Internal consistency of the total scale was α = 0.94 and 0.85 for mothers and fathers respectively.

Child abuse risk. The short version of the Child Abuse Potential Inventory (CAPI, Milner, 1986, 1990; Bouwmeester-Landweer, 2006) was used to measure child abuse risk. This scale contains a main abuse scale with 70 statements divided over 5 subscales (distress, rigidity, unhappiness, problems with family, problems with others) which parents can agree or disagree with. A troublesome answer is given a risk score ranging from 1 to 23, resulting in a maximum score of 450. Cronbach's alphas in this sample were 0.86, and 0.85 for mothers and fathers respectively.

Negative parental attributions. To assess negative parental attributions of ambiguous child behavior the Parental Attributions of Child behavior Task (PACT; Beckerman et al., 2017) was used. This computerized task consisted of presentations of ten ambiguous illustrations of child behavior that could be explained as either being naughty or clumsy, and five drawings of neutral child behavior. The children in the drawings were gender neutral and were drawn without any facial expressions, to prevent interference of these features with the interpretation of the behavior in the picture. After presenting the illustration for 4000 ms, parents were asked to quickly answer eight attribution questions within 3500 ms each; four negative questions (e.g., 'Do you think this is naughty?') and four positive questions (e.g., 'Do you think this is cute?'). By forcing parents to choose between a simple YES or NO, instead of using a scale measure, we could register a quick response, thereby simulating a realistic representation of the parent's thinking process. The frequency of affirmative responses to the four negative attribution questions for each of the ten ambiguous drawings was used as a measure for the parent's level of negative attributions (ranging from 0-40). Cronbach's alphas for negative parental attributions were 0.95, and 0.94 for mothers and fathers respectively. More detailed information about the PACT can be found in Beckerman et al. (2017).

Parental harsh and abusive discipline. Two measures of harsh and abusive discipline were used, one based on self-report measures and one based on observation.

Self-report measures. Similar to our previous study (Beckerman et al., 2017), we combined two self-report measures to assess parental harsh and abusive discipline. The first measure was the overreactivity subscale of the Parenting Scale (PS; Arnold, O'Leary, Wolff & Acker, 1993), which reflects overreactive disciplinary actions such as displays of anger, meanness, and irritability. Parents indicated which of two statements (A and B) described their discipline tendency best on a 5-point Likert scale (ranging from 1 *A completely applies* to 5 *B completely applies*).

The second self-report measure consisted of the minor physical assault, severe physical assault, and psychological aggression subscales of the Conflict Tactics Scale Parent Child (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). Parents rated 32 statements on a 5-point Likert scale ranging from 1 *never* to 5 *(almost) always*. Because of the absence of severe physical assault in our sample, only the subscales minor physical assault and psychological aggression were used.

Similar to our previous study (Beckerman et al., 2017), the PS overreactivity subscale and the CTSPC minor physical assault and psychological aggression subscales were combined into one score of harsh and abusive discipline for replication purposes. Subscales of the different measures were significantly correlated (all rs > .47, ps < .01). A standardized mean score was computed for fathers and mothers separately. Internal consistencies of this combined scale were for both mothers and fathers α = .80.

Observational measures. For the observation of parental discipline a *don't touch* task was used (e.g., Joosen, Mesman, Bakermans-Kranenburg, & Van IJzendoorn, 2012; Van Berkel et al., 2015). Parents were given a bag with attractive toys (i.e., colorful, sound making, interactive toys) and were instructed to unpack it in front of their children. Children were not allowed to touch the toys for two minutes. After these minutes the children were allowed to play with an uninteresting toy (i.e., a grey teddy bear) for 2 minutes. Parental discipline was coded during this disciplinary task on three separate scales: *harsh physical discipline*, *verbal overreactive discipline, and supportive presence*. The first two scales were coded according to an adapted version of the discipline rating scales (Joosen et al., 2012; Verschueren, Dossche, Marcoen, Mahieu, & Bakermans-Kranenburg, 2006), and the last one according to the Erickson scale for parental supportive presence (Egeland, Erickson, Clemenhagen-Moon, Hiester, & Korfmacher, 1990).

Harsh physical discipline was coded as a discipline strategy when the parent used severe physical force to prevent the child from touching the toys, but also when the parent used harsh physical force to strengthen his/her demand or punish the child. Scores ranged from 1 *no physically harsh acts* to 5 *more than one harsh act*. Parents were rated as using *verbal overreactive discipline* when they verbally expressed irritation and/or anger towards the child, indicating they were losing their temper. Scores ranged from 1 *no harsh verbal discipline* to 5 *almost constant irritation and/or anger*.

A parent scoring low on S*upportive presence* represents a parent who fails to provide supportive strategies to help the child to obey; the parent might be unavailable or uninvolved and fails to be responsive to the emotional needs of the child. A high score represents a parent who is emotionally available and involved, showing positive regard and emotional support to the child by using positive strategies to help the child to not touch the toys (e.g., induction, praising, and encouraging the child; Egeland et al., 1990). Scores ranged from 0 *non-supportive* to 7 *very supportive*.

Research interns were trained by an expert to work with the discipline coding systems. Interobserver reliability was adequate; intraclass correlations (single rater, absolute agreement) between all pairs of 4 independent coders were 0.70 or higher for all three scales. Different coders rated parents in the same family to guarantee independence among ratings.

Analyses of the observation scores revealed that the behavior represented in the observational scales *harsh physical discipline* and *verbal overreactive discipline* were virtually absent in our sample (only 3 mothers and 6 fathers showed minor indications of *harsh physical discipline*; only 7 mothers and 13 fathers showed some *verbal overreactive discipline,*, with scores on either scale not exceeding 2). Therefore, we could not use these variables for the analyses and only focused on observed Supportive Presence.

Data Analysis

There were three study variables with outliers, as evidenced by standardized individual scores lower than -3.29 or higher than 3.29 (Tabachnick & Fidell, 2012). Outliers were found for parenting stress reported by the mother (n=2), and partner related stress reported by the mother (n=2) and the father (n=1). These values were winsorized; making them the subsequent highest score within the particular variable. Study variables were normally distributed, except for childhood maltreatment and child abuse risk (for mothers as well as fathers), which positively skewed. To achieve normal distribution of the variables, logarithmic (log10) transformations were used (Tabachnick & Fidell, 2012). To test mediation, the Preacher and Hayes (2004) method was applied using the online available PROCESS macro for SPSS (Hayes, 2013).

Results

Preliminary-Analysis

Correlations and descriptive statistics of the study variables and relevant background variables are displayed in Table 1. For both mothers and fathers more negative attributions were related to more parenting stress and more harsh and abusive discipline. Mothers who reported more partner-related stress and scored higher on child abuse risk, also

expressed more negative attributions. Parenting stress was positively associated with harsh and abusive parenting for both mothers and fathers. For mothers, partner-related stress was also positively correlated with harsh and abusive parenting; while for fathers family SES correlated negatively with harsh and abusive parenting. Family SES was positively related with supportive presence for both mothers and fathers. Family SES was negatively related to fathers' child abuse risk. All other risk variables (i.e., partner-related stress, parenting stress, childhood maltreatment, and child abuse risk) were positively intercorrelated for fathers and mothers, except for fathers' parenting stress with fathers' childhood maltreatment experiences and with fathers' child abuse risk. Regarding the background variables (i.e., age parent, age child, gender child, number of children), age of the child was positively related to both negative attributions of the father and harsh and abusive discipline reported by the father, so it was added as covariate in subsequent mediation analyses.

Table 1

Correlations, Means, and Standard Deviations for Background and Study Variables (N=105)

					Father								
	1	2	3	4	5	6	7	8	9	10	11	12	*M* (*SD*)
1. Age child		-.01	.29**	.02	.14	.15	-.06	.02	.00	.22*	.27**	.09	3.44 (1.11)
2. Gender child			-.05	.04	-.07	.07	.06	.10	-.04	.03	-.11	.02	1.50 (0.50)
3. Number of children				-.03	.04	-.06	.01	.07	.03	.30**	.16	-.03	1.90 (0.74)
4. SES					.26**	-.17	-.06	-.18	-.46**	-.04	-.23**	.40**	0.03 (1.73)
Mother													
5. Age Parent	.26**	.04	.17	.50**	.58**	.11	.12	-.03	.06	.07	-.04	.08	35.14 (4.98)
6. Partner-related stress	.10	-.10	.08	-.24	-.07	.57**	.24*	.34**	.53**	.12	.16	-.07	1.21 (0.91)
7. Parenting stress	.03	.04	.11	.06	.14	.21*	.38**	-.06	.12	.21*	.32**	.07	0.77 (0.44)
8. Childhood maltreatment	.09	.01	.17	-.18	-.05	.24*	.26**	.05	.56**	-.01	.06	-.23*	0.37 (0.06)
9. Child abuse risk	.07	.14	.07	-.19	-.06	.54**	.39**	.53**	.39**	.03	.17	-.25**	1.67 (0.35)
10. Negative attributions	.16	.00	.12	-.10	.07	.22*	.27**	.11	.23*	.45**	.25**	-.18	15.38 (7.58)
11. Harsh discipline	.34**	-.01	.21*	-.11	.03	.28**	.40**	.17	.18	.38**	.39**	-.08	0.00 (2.57)
12. Supportive Presence	.09	.07	.08	.30**	.31**	-.03	.02	.08	-.04	-.18	-.10	.21*	5.39 (1.18)
M (*SD*)					32.70 (4.4)	1.15 (0.81)	0.78 (0.51)	0.38 (0.09)	1.71 (0.34)	14.97 (7.90)	0.00 (2.53)	5.49 (1.34)	

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

Note: Correlations below the diagonal refer to associations between variables of the mother, correlations above the diagonal refer to associations between variables of the father, and correlations on the diagonal reflect associations between mothers and fathers.

Mediation Model

Because we were interested in replicating the results of our previous study (Beckerman et al., 2017), we first ran the exact same analysis with the same study variables (i.e., SES, partner-related stress, parenting stress, childhood maltreatment, negative parental attributions, and self-reported harsh and abusive parenting). In addition, we tested this model for fathers, for the prediction of observed supportive presence, and for the risk factor child abuse risk. Finally, the separate mediation effects were tested in a multiple mediation model for mothers and fathers separately.

Self-reported harsh and abusive discipline. In line with our previous study (Beckerman et al., 2017) we first tested if negative parental attributions mediated the association between parenting stress and self-reported harsh and abusive discipline. One thousand bootstrap resamples were used and 95% bias corrected (BC) confidence intervals were computed. For mothers, the indirect path from parenting stress, through maternal negative attributions, to harsh and abusive discipline was significant, *B* = 0.40, *S.E.* = 0.19, 95% BC *CI* = 0.13, 0.89. The direct effect of parenting stress on harsh and abusive discipline was also significant, *B* = 1.61, *S.E.* = 0.45, $p < .01$. So the relation between parenting stress and maternal harsh and abusive discipline was partially mediated by maternal negative attributions. For fathers, partial mediation between parenting stress and harsh and abusive discipline by negative attribution was found as well: *B* = 0.27, *S.E.* = 0.17, 95% BC *CI* = 0.04, 0.72 (indirect effect), *B* = 1.71, *S.E.* = 0.53, $p < .01$ (direct effect). The effects for mothers and fathers were compared using an equality of coefficients z-test (Clogg, Petkova, & Haritou, 1995), that indicated that the mediation effects were not significantly different ($p > .39$).

Second, we tested if negative parental attributions mediated the relation between harsh and abusive parenting and the other previously studied risk factors (i.e., SES, partner-related stress, parenting stress, childhood maltreatment; Beckerman et al., 2017), and the additional risk factor child abuse risk. For mothers, we found that the effect of partner-related stress was partially mediated, *B* = 0.23, *S.E.* = 0.11, 95% BC *CI* = 0.06, 0.51 (indirect effect), *B* = 0.66, *S.E.* = 0.29, $p < .05$ (direct effect), and the effect of child abuse risk was fully mediated by negative parental attributions, *B* = 0.63, *S.E.* = 0.26, 95% BC *CI* = 0.20, 1.29 (indirect effect), *B* = 0.67, *S.E.* = 0.70, $p = .34$ (direct effect). For fathers, we found no mediation effects for the other risk factors besides parenting stress. Again the mediation effects for mothers and fathers were not significantly different (all $ps > .29$).

Observed supportive parenting. We examined the same mediation models for the relation between the different risk factors negative attributions and observed supportive presence as outcome variable. For mothers, we found full mediation for three risk factors: (1) parenting stress; *B* = -.15, *S.E.* = 0.08, 95% BC *CI* = -.37, -.03 (indirect effect), *B* = 0.22, *S.E.* = 0.27, $p = .42$ (direct effect); (2) partner-related stress; *B* = -.07, *S.E.* = 0.05, 95% BC

CI = **-**.19, **-**.01 (indirect effect), *B* = 0.03, *S.E.* = 0.17, *p* = .87 (direct effect); and (3) child abuse risk; *B* = **-**.17, *S.E.* = 0.11, 95% BC *CI* = -.47, **-**.02 (indirect effect), *B* = 0.05, *S.E.* = 0.39, *p* = .89 (direct effect). For fathers, no mediation was found with supportive presence as outcome variable. Similar to the previous mediation effects, no significant differences were found between the models for mothers and fathers (all *p*s > .39).

Multiple mediation model. Finally, we conducted a multiple mediation analysis with all significant risk factors in one model. For mothers, two models were tested with partner-related stress, parenting stress, and child abuse risk as predictors: one with harsh and abusive parenting and one with supportive presence as outcome variable. For the first model (see Figure 1) we found that the mediation for partner-related stress (*B* = 0.11, *S.E.* = 0.11, 95% BC *CI* = -.07, 0.39) and child abuse risk (*B* = 0.16, *S.E.* = 0.24, 95% BC *CI* = -.25, 0.72) disappeared; the relation between parenting stress and harsh and abusive parenting remained to be partially mediated by negative parental attributions, *B* = 0.29, *S.E.* = 0.19, 95% BC *CI* = 0.02, 0.77 (indirect effect), *B* = 1.68, *S.E.* = 0.47, *p* < .01 (direct effect).

For the second model (see Figure 2) we found the same pattern: mediation for partner-related stress (*B* = **-**.04, *S.E.* = 0.05, 95% BC *CI* = -.19, 0.02) and child abuse risk (*B* = **-**.06, *S.E.* = 0.10, 95% BC *CI* = -.34, 0.08) disappeared; the relation between parenting stress and supportive presence remained to be fully mediated by negative parental attributions, *B* = **-**.11, *S.E.* = 0.10, 95% BC *CI* = -.36, **-**.01 (indirect effect), *B* = 0.23, *S.E.* = 0.29, *p* > .05 (direct effect). For fathers, we did not perform additional mediation analyses with the separate risk factors together in one model, since only parenting stress was significantly mediated by negative parental attributions in relation to harsh discipline when individually studied (see Figure 3).

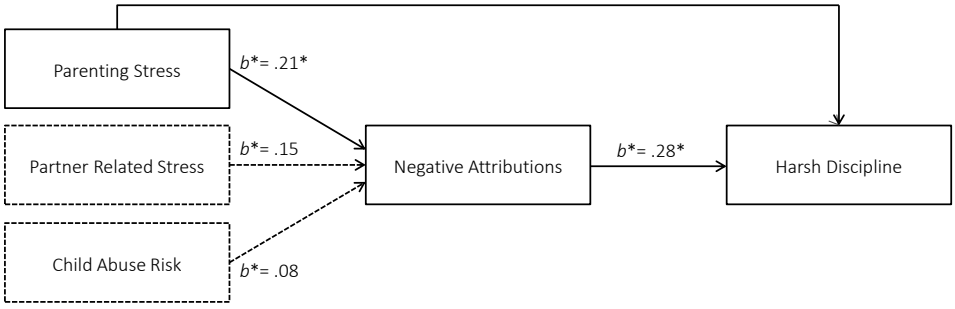

Figure 1. Multiple mediation model of parenting stress, partner related stress and child abuse risk on harsh discipline by negative attributions for mothers. **p* < 0.05, ***p* < 0.01.

Note: Dashed lines are non significant associations.

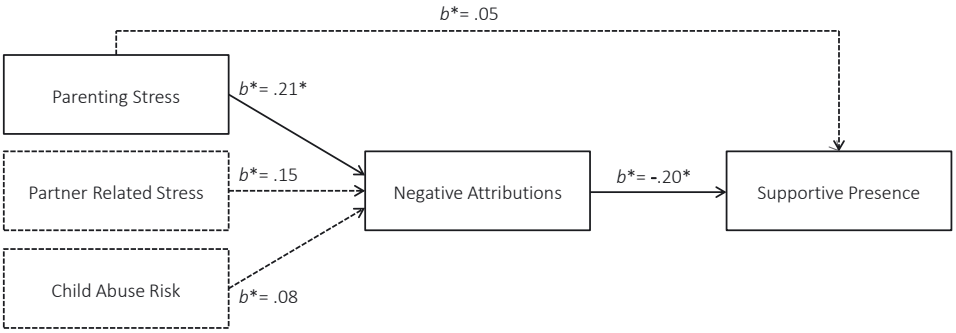

Figure 2. Multiple mediation model of parenting stress, partner related stress and child abuse risk on supportive presence by negative attributions for mothers. **p* < 0.05, ***p* < 0.01.
Note: Dashed lines are non significant associations.

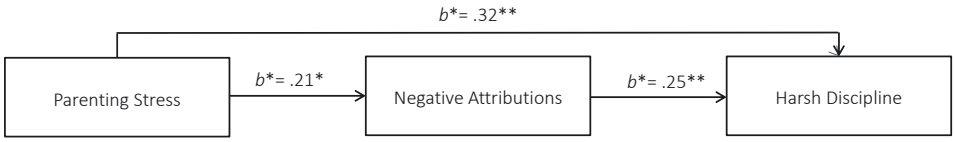

Figure 3. Mediation model of parenting stress on harsh discipline by negative attributions for fathers. **p* < 0.05, ***p* < 0.01.

Discussion

We replicated the finding of our previous study, showing that the association between parenting stress and self-reported maternal harsh and abusive discipline was partially mediated by maternal negative attributions. The same partial mediation was found for fathers' harsh and abusive parenting. In addition, partner-related stress and abuse risk showed a similar effect on harsh and abusive parenting through negative attributions for mothers. Furthermore, the indirect effects on maternal self-reported harsh and abusive parenting were extended to observed maternal supportive presence. For fathers, however, no indirect effects were found for other stressors or with observed supportive presence. The stressors SES and childhood maltreatment history did not show an indirect effect for mothers or fathers. Finally, for mothers only the indirect effect of parenting stress remained significant when the other significant stressors (i.e. partner-related stress, abuse risk) were added to the model.

By replicating our previous results using a relatively large sample, including data of mothers and fathers, and using observational measures, this study adds support to the assumptions of the SIP-model (Milner, 1993, 2003), that hypothesizes that high stress

levels are related to negative parental attributions, which are in turn associated with more harsh and abusive parenting and less supportive parenting. Since observed supportive presence and self-reported harsh and abusive discipline were not correlated, they each seem to represent a different construct of negative parenting instead of being two extremities on one scale. This could imply that the SIP-model is applicable to different types of dysfunctional parenting. The SIP-model is a cognitive behavioral explanation for child physical abuse, but prior comparable models also used cognitions, such as parental attributions, as mediators to explain child neglect and child sexual abuse (e.g., Azar, Miller, Stevenson, & Johnson, 2017; Crittenden, 1993; Guibert & De Paul, 2002; Howells, 1981). Therefore, it is reasonable to argue that the SIP-model could be used for explaining different types of child abuse and neglect or dysfunctional parenting (e.g., harsh parenting and lack of supportive parenting). More studies are needed to further test the applicability of the SIP-model for different types of child abuse and neglect.

Parenting stress, partner-related stress, and abuse risk were individually related to dysfunctional parenting through negative attributions for mothers. Not all indirect effects were full mediational effects as found in our previous study. Concerning harsh and abusive parenting, partial mediation was found for the risk factors parenting stress and partner-related stress. This indicates that the relation between the risk factors and harsh and abusive parenting was not fully explained by negative attributions. Other variables could further mediate the relation. For example, the SIP-model explains that next to parental attributions, processing cognitions like perception, information integration and response selection, also might function as mediators (Milner, 1993; 2003). Considering our inconsistent findings regarding full and partial mediation between risk factors and dysfunctional parenting, we encourage future research to further disentangle this relation by specifying direct and indirect effects, and by incorporating alternative mediators to the model.

Furthermore, contrary to our expectations, SES and childhood maltreatment were not related to parental attributions. Although we tried to include families with a broad range of socioeconomic backgrounds, all families were above the Dutch poverty line. On average the families in the sample had a monthly net family income that was around the average family income of the Dutch population (Central Bureau for Statistics, 2017). The absence of a relation between SES and parental attributions might be explained by the fact that there was hardly any socioeconomic strain to begin with. All families' financial situations could provide them with all basic needs like housing, food, clothing, and health insurance. The same argumentation might be true for maternal history of childhood maltreatment. To have an effect on parenting cognitions there might be a threshold - a certain amount of experienced maltreatment - that needs to be reached before it negatively influences attitudes regarding children and childrearing practices which in turn affect parental attributions.

Moreover, the results of our replication point again in the direction of parenting stress being the most influential type of stress that affects parental attributions. In our first study we only found the relation between parenting stress and abusive discipline to be mediated by negative parental attributions, no such relations were found for the other stressors or for past childhood maltreatment (Beckerman et al., 2017). In the current study, such relations were found for other stressors (i.e., partner-related stress and child abuse risk), but when studied in one model only parenting stress remained significant. For fathers, only the association between parenting stress and harsh and abusive discipline was mediated by negative parental attributions. As reasoned in our previous study, it might be that the stressor that is most directly related to parenting situations (i.e., parenting stress) is most influential. The SIP model theorizes that when parents experience stress that is related to the child, other negative emotions and cognitions (e.g., anger and hostility) will also be more at the surface when observing challenging (i.e., ambiguous) child behavior, because this reminds them of negative parenting experiences in the past (Milner, 1993, 2003). Thus, the combination of experiencing parenting stress and the trigger of negative child-related emotions and cognitions might play a role in increased parental susceptibility to automatic processing and as a result, increased bias in parental attributions (Beckerman et al., 2017; Milner, 1993, 2003).

Additionally, to understand different types of stressors that influence parental attributions, our study sheds some light on similarities and differences in parental attributions between mothers and fathers. Considering harsh and abusive parenting, for both mothers and fathers there was an indirect effect of parenting stress via negative parental attributions. For supportive presence, this indirect effect was only found for mothers. Considering partner-related stress and child abuse risk, an indirect effect on dysfunctional parenting via parental attributions was again only found for mothers.

This finding might indicate that mothers and fathers are different in their parental attributions and/or that they are differently affected by stress. As suggested, applying models found for mothers to fathers might be problematic, because of potentially different parenting styles, differences in the amount of time they spend with their children, and in their physiological reaction to stress (Lamb, 2010; Kudielka & Kirschbaum, 2005). For example, when fathers discipline the children more often than mothers do, it might be plausible that fathers attribute challenging child behavior as more wrong and blameworthy and are more likely to choose a disciplinary response in an ambiguous situation, whereas mothers might attribute the behavior as more accidental and/or piteous, and comfort the child. Or, when mothers spend more time with their children, their attributions might be based more on past child-related/parenting experiences (for better or for worse), and as such have different antecedents and therefore different patterns of associated variables compared to fathers' attributions. Although these explanations for mother and father attributional differences are plausible, for now we can only conclude that the indirect effect of stress on dysfunctional parenting via parental attributions seems to be more robust

for mothers than for fathers, even though the indirect effects did not differ significantly between mothers and fathers. More studies are needed to further explore differences in mother and father attributions in relation to stress and how they predict parenting outcomes. In addition it would be interesting to study parental attributions in relation to child outcomes. Father attributions might not be different from mother attributions in relation to parenting outcomes, but they might predict child outcomes differently. Since it has been suggested that mothers and fathers each serve a different role in the family system, they might complement each other and/ or influence each other in parenting and subsequently child outcomes. Future research should therefore not solely focus on attributional differences between mothers and fathers, but also incorporate interaction effects between mother and father attributions; how do they relate and interact with each other within the family system and how do they (simultaneously) influence their children?

We could not overcome all of the limitations of our previous study (Beckerman et al., 2017). For example, for replication purposes we used a comparable sample (i.e., relatively high SES parents with a Dutch cultural background) and study design (i.e., cross-sectional). So, generalization claims are limited to comparable medium-to-high SES families, and causality claims can only be made on theoretical grounds. We used mediation according to the SIP-model to explain the link between stress, attributions and dysfunctional parenting, however other models are also plausible. For example, negative parental attributions could moderate the association between stress and dysfunctional parenting (i.e., the combination of negative attributions and stress results in dysfunctional parenting), or stress may mediate the relation between attributions and harsh and abusive parenting (i.e., negative attributions lead to the stress, which in turn leads to dysfunctional parenting).

Furthermore, we added observational measures for examining parenting, but could only use supportive parenting for analyses because harsh parenting rarely occurred in our low-risk sample. It has been recommended to use observational measures that elicit challenging parenting situations to reduce the limitation of social desirability to a minimum and to discriminate dysfunctional parenting styles from non-dysfunctional styles (Bennet et al., 2006). In line with these recommendations, we chose to observe harsh parenting and low supportive presence as dysfunctional parenting styles within a stressful 'don't touch' task in addition to self-reported parenting. Harsh parenting did not show enough variability in our sample and in retrospect this might not have been the most suitable rating scale to observe dysfunctional parenting in a low-risk sample; demonstrating harsh parenting might be a more severe form of dysfunctional parenting that is more likely to occur in high-risk samples. Other rating scales that have been used in observational measures of parenting, such as intrusiveness (i.e., low respect for a child's autonomy), hostility, and limit-setting (e.g., Egeland & Hiester, 1995) might provide more variance in a low-risk sample. Additionally, where low supportive presence might be a

precursor for neglectful types of maltreatment, measurements of intrusiveness and limit-setting might be more suitable to use as precursors for child physical abuse. We encourage future research to study more heterogeneous samples concerning cultural background, SES, and risk status, and to use an experimental or longitudinal design to further explore the interplay between parental attributions and stress in relation to negative parenting.

To conclude, together with our previous study this replication and extension provide additional evidence that the effects of stress (specifically parenting stress) on different aspects of negative parenting (i.e., harsh and abusive parenting, non-supportiveness) can be (partially) explained by negative parental attributions. Therefore, we recommend that interventions aimed at preventing or decreasing the occurrence of child abuse should also target negative parental attributions. In addition, attributions as measured by our newly developed attribution task (i.e., the PACT) are related to constructs as expected based on theoretical grounds and prior research. Hence, the PACT may be used as a diagnostic tool in the assessment of strengths and limitations in parenting. Results can be used to decide to what extent a focus on parental attributions in an intervention is necessary. Further exploration of this multi-purpose use of the PACT, as well as studying the PACT with more heterogeneous and high-risk samples is recommended.

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Chapter 4

Are negative parental attributions predicted by situational stress? From a theoretical assumption towards an experimental answer.

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Abstract

In an experimental within-subjects research design we studied the theoretical assumption that stress predicts negative parental attributions, which until now was mainly studied using cross-sectional study designs. During home-visits to 105 families, mothers and fathers were subjected to two experimental conditions and two control conditions. In the experimental conditions parents completed the Parental Attributions of Child behavior Task (PACT; a computerized attribution task) under two different stressful conditions (i.e., cognitive load and white noise), in the control conditions the PACT was completed without additional components. Furthermore, parents completed questionnaires about existing risk factors (i.e., partner-related stress, parenting stress, and abuse risk). There were no main effects of induced stress on attributions for fathers and mothers, but we found that a combination of induced situational stress (cognitive load) and high-risk resulted in the most negative parental attributions in mothers. The discussion focuses on intensity and origin of stressors, comparison between mother and father attributions, implications for interventions, and possible future research directions.

Keywords: Parental attributions, stress, high-risk, experimental design, child abuse, information processing, fathers

Introduction

According to the Social Information Processing (SIP) model, negative parental attributions (i.e., negative interpretations and evaluations of child behavior) are important predictors of subsequent disciplinary actions and potentially, harsh and abusive parenting (Milner, 1993, 2003). The model hypothesizes that physically abusive parents, relative to non-abusing parents, make more negative interpretations of child behavior (e.g., motivated by hostile intent) and more negative evaluations of this behavior (e.g., qualified as wrong and blameworthy). A large number of studies have confirmed these hypothesized differences in attributions of parents at risk for abuse or parents who are abusing versus low-risk and non-abusing parents (e.g., Burchinal, Skinner, & Reznick, 2010; De Paúl, Asla, Perez-Albeniz, & De Cadiz, 2006; Irwin, Skowronski, Crouch, Milner, & Zengel, 2014). However, far less is known about the origins of differences in parental attributions. The SIP-model reasons that the experience of stress is an important risk factor for parental attributions to become biased (Milner, 1993, 2003). Some empirical evidence was found for this theoretical assumption (Berlin, Dodge, & Reznick, 2013; Beckerman, Van Berkel, Mesman, & Alink, 2017; Haskett, Scott, Willoughby, Ahern, & Nears, 2006), although primarily based on cross-sectional data, precluding conclusions about causality. The current study aims to shed more light on the possible *causal* relation between stress and attributions using an experimental research design.

The Social Information Processing model (Milner, 1993, 2003) is a frequently used theoretical framework to describe and study cognitions of parents at risk for child abuse or parents who are abusing their children (e.g., Berlin et al., 2013; Haskett et al., 2006; Rodriguez & Tucker, 2015; Slep & O'Leary, 1998). Parental attributions are a key element of the model and is described as the cognitive process of interpretation and evaluation of the behavior of the child, thereby giving meaning to the child's behavior. The model hypothesizes that high-risk and abusive parents make different attributions about child behavior than other parents. High-risk and abusive parents are proposed to have a high predisposition to attribute responsibility and hostile intent to the child (e.g., "she spilled her food to get back at me"), and evaluate negative child behavior as being more serious, wrong, and blameworthy (e.g. "spilling food is serious wrongdoing of my child, she should know better"). Additionally, these parents are also less likely to think about alternative explanations for their child's behavior (e.g., "she spilled her food by accident, because she is too young to eat properly with a spoon") than other parents. According to the model, these attributional differences between physically abusive parents and non-abusing parents will be greatest when the child's behavior in question is ambiguous in nature, when it concerns challenging but age-appropriate child behavior, and /or minor transgressions.

It has been theorized that stress is an important risk factor for attributions to become biased. Once stress increases, parents are more likely to process information automatically,

instead of in a controlled and flexible manner (i.e., controlled processing) (Milner, 1993, 2003). During automatic processing parents rely more on fixed and rigid beliefs (e.g., "children should not spill food") and are less likely to take situational information into account (e.g., age-related constraints in child skills). When parents attribute their child's behavior automatically, they are less able to understand the child's behavior within the actual context, therefore attribute more responsibility to the child, and evaluate the child's behavior as more wrong. Empirical evidence shows that people who are (chronically) stressed are indeed more likely to process information automatically and habitually instead of in a controlled and flexible manner (Hermans, Henckens, Joëls, & Fernández, 2014; Vogel et al., 2015). There is evidence that stress impairs cognitive functions such as self-control, and executive attention and memory (Diamond, 2013; Kuhlmann, Piel, & Wolf, 2005; Lupien, Maheu, Tu, Fiocco, & Schramek, 2007). Stress-related impairment in each of these cognitive functions increases the likelihood of automatic processing versus controlled processing. Parents experiencing high stress levels and having problems regulating their attention are likely to find it difficult to be attentive to situational factors and to appraise the situation in its actual context. Parents with low self-control (particularly inhibitory control), may take less time to think before they evaluate the situation or reevaluate their initial responses, and as a consequence they will rely more on fixed and rigid beliefs while attributing child behavior. Parents with an impaired working memory have difficulties seeing connections, incorporating new information into thinking, and considering alternatives (Diamond, 2013).

There is some empirical evidence that heightened stress levels are indeed related to more negative parental attributions. For example, stress experienced as a consequence of socio-economic strain (Berlin et al., 2013; Clément & Chamberland, 2009), parenting stress (Clement & Chamberland, 2008; Haskett et al., 2006; Beckerman et al., 2017), and partner-related stress (Beckerman, Van Berkel, Alink, Mesman, 2018) were found to be related to more negative parental attributions. However, the study designs were cross-sectional which precludes causality claims.

Theoretically, negative parental attributions are predicted by stress, but an alternative explanation could be that negative attributions cause stress. Parents with more negative parental attributions could also experience more stress because of their negative attributions. When parents' attributions are negatively biased it could be that in general they perceive things more negatively than other parents, and as a consequence will experience more stress. To our knowledge only two studies have manipulated stress in order to experimentally examine the effect on parental attributions. One study examined stress as a within-subject factor (i.e., the same group of parents attributed child behavior with and without a stressor; Cassles & Milner, 2000), the other examined stress as a between-subject factor (one group of parents attributed child behavior with a stressor, another without; De Paúl et al., 2006). In both studies, the same infant cry sound was used to elevate stress levels while parents evaluated vignettes of child behavior. Neither

study found an effect of the infant cry stressor on negative attributions. The authors offer multiple explanations for their findings. For example, perhaps the stimulus was not stressful enough for parents because the (intermitted) cry sound for a total duration of 3 minutes was too short, or because the crying infant was not their own (De Paúl et al., 2006). The stressor could also have been more stressful to some parents than others, based on experience (e.g., more stressful when the parent's child cried frequently during infancy). Furthermore, the authors propose that future research should study situational stressors in combination with existing stressors (i.e., risk) to expect a more robust effect on parental attributions (Cassles & Milner, 2000), and that the situational stressor should be presented simultaneously with the parental attributions, rather than in advance (De Paúl et al., 2006).

Taking into account these previous findings and directions, the aim of the current study is to extend knowledge about the relation between stress and negative attributions, overcoming previous study limitations and taking into account suggestions based on prior research. To be more specific, the first objective is to study situational stress and negative attributions in an experimental within-subjects design. Two conditions were designed to elevate stress levels: white noise and cognitive load. White noise is a random sound that has an equal intensity at different frequencies, and covers the entire range of human hearing (Carter & Mancini, 2009; Forquer & Johnsons, 2005). Cognitive load refers to the total amount of mental effort being used in the working memory (Sweller, 1988; Ayres & Paas, 2012). Both of these conditions are used and manipulated in cognitive psychology to induce stress (e.g., Hillier, Alexander, Beversdorf, 2006; Hiraoka & Nomura, 2017; Liu, Iwanaga, Shimomura, & Katsuura, 2007; Meiring, Subramoney, Thomas, Decety, & Fourie, 2014). We selected these situational stressors because they mirror real life situational stress that parents may encounter when interacting with their child (i.e., loud noises, having to think about many things at the same time) and do not give meaning to the child's behavior per se (as is the case with crying as a stressor). Moreover, we presented the stressors while parents were attributing child behavior. We expect that parents will attribute child behavior more negatively in the experimental conditions compared to the control conditions (hypothesis 1).

The second objective is to study situational stressors in combination with existing risk factors. In two of our previous studies (Beckerman et al., 2017; 2018) we examined different types of risk factors (i.e., socio-economic strain, partner-related stress, parenting stress, past childhood maltreatment, and abuse risk) in combination with negative parental attributions, and found that partner-related stress, parenting stress, and abuse risk were positively related to negative parental attributions. Therefore, in the current study we examine the interaction effects of experimentally induced stress (i.e., situational stressors) and an accumulative risk factor of partner-related stress, parenting stress, and abuse risk (i.e., existing risk factors). We expect that the effect of induced situational stress on negative parental attributions is more pronounced for high-risk parents, compared to

low-risk parents (hypothesis 2). In addition, we expect high-risk parents to attribute more negatively compared to low-risk parents, in both the experimental and control condition (hypothesis 3).

Finally, all hypotheses are tested for mothers and fathers separately. It has been suggested that fathers and mothers are not only different in their attributional styles (Chen, Seipp, & Johnston, 2008; Lansford et al., 2011), but that they also differ in their biological make-up and sociale role, and therefore respond differently to stress (Krantz, Forsman, Lundberg, 2004; Kudielka & Kirschbaum, 2005; Matud, 2004). In sum, we experimentally test whether stress affects parental attributions. We expect that both situational stress and existing risk factors (i.e., accumulative risk) are individually related to more negative parental attributions (hypothesis 1 and 3, respectively). In addition, a more prominent effect of the induced situational stress is expected on parental attributions for high-risk parents, compared to low-risk parents (hypothesis 2).

Method

Sample

Participants were recruited in several ways in order to include families with various socio-economic backgrounds. Families were recruited through health care services, door-to-door flyer distribution, and Facebook advertisements. Information about the study was provided by brochures, an internet page, and verbally by recruiters. Families could self-enroll by filling out a short questionnaire on the internet about family characteristics and were contacted by telephone within a few days. We only included families who self-identified as having a Dutch cultural background. In addition, families were eligible for participation if they had a child in the age range of 1.5-6 years old, were living in the Netherlands, and had the Dutch nationality. Exclusion criteria were mother's or father's psychopathology, severe intellectual or physical disabilities of the mother, father or the child, and not speaking the Dutch language. Participants reported on these items on the enrollment questionnaire (see also Beckerman et al., 2018).

The recruitment resulted in a total number of 105 participating families. In all families both mothers and fathers participated and provided all data needed for analyses. Educational level was distributed as follows for mothers: 1% low (highest education: primary school or partly secondary school), 43% average (highest education: secondary school or vocational school), 57% high (highest education: Bachelor or Master degree); and for fathers: 5% low, 38% average, 57% high. Parents reported their monthly net family income in categories ranging from 1 (< € 1000) to 8 (> € 4000); with intermediate steps each increasing € 500. Monthly net family income was on average between € 2500 and € 3000 (category 5; *SD* = 1.63 range 2-8), which is around the average family income of the

Dutch population (Central Bureau for Statistics, 2017). The mothers were between 23.7 and 44.2 years old (*M* = 32.7, *SD* = 4.4). The fathers were between 23.6 and 51.9 years old (*M* = 35.1, *SD* = 5.0). The participating children were between 1.7 and 6.0 years old (*M* = 3.4, *SD* = 1.1), 51% were boys.

Procedure

Data were collected during six home visits; three visits were planned with the mother, and three visits with the father. The order of mother and father visits was counterbalanced (i.e., MFMFMF or FMFMFM) and parents were explicitly requested not to talk about the tasks and questionnaires to each other. During the first home visit parent-child dyads were filmed and parents were asked to fill out questionnaires. During the second and third home visit parents completed the Parental Attributions of Child behavior Task (PACT), twice in the control condition and twice in the experimental condition (Table 1). In addition they were asked to fill out more questionnaires. The order of the conditions across the second and third home visits was counterbalanced between families. The order of conditions was the same for fathers and mothers within families. There was at least one month between administering the control and experimental condition to prevent carry-over effects. Parents and children received a small gift after each home visit and at the end of the study the family received a gift coupon of €100 and a DVD with the recordings of the home visits with the child. Informed consent was obtained from all parents. Procedures and measures were approved by the Ethics Committee of the Institute of Education and Child studies of Leiden University.

Table 1
PACT: Experimental versus matched control condition

Parent X	
Home visit A	Home visit B
Experimental condition	**Control condition**
PACT- Cognitive load (picture series 1)	PACT- Standard (picture series 1)
PACT- White noise (picture series 2)	PACT- Standard (picture series 2)

Note: Home visit A and B were counterbalanced, as well as the order in which parents received the cognitive load and the white noise component and the two matching control tasks within home visits

Measures

Parental Attributions of Child behavior Task. To assess negative parental attributions of ambiguous child behavior the Parental Attributions of Child behavior Task (PACT; Beckerman et al., 2017) was used. This computerized task consists of presentations of ten ambiguous illustrations of child behavior that can be interpreted as being either naughty or clumsy, and five drawings of neutral child behavior. The children in the drawings were gender neutral and were drawn without any facial expressions, to prevent interference of these features with the interpretation of the behavior in the picture. After presenting the illustration for 4000 ms, parents were asked to answer a series of eight attribution questions as quickly as possible with a maximum of 3500 ms each; four negative questions (e.g., 'Do you think this is naughty?') and four positive questions (e.g., 'Do you think this is cute?'). By forcing parents to choose between a simple YES or NO, instead of using a scale measure, we could elicit fast responses, thereby simulating a realistic representation of the parent's thinking process. The frequency of affirmative responses to the four negative attribution questions for each of the ten ambiguous drawings were used as a measure of the parent's level of negative attributions (ranging from 0-40). All questions were answered within 3500 ms. Cronbach's alphas for negative parental attributions were .95 for mothers and .94 for fathers. More detailed information about the PACT can be found in Beckerman et al. (2017). The PACT was administered to each parent four times: twice in the control condition during one home visit, and twice in the experimental condition with additional components (i.e., cognitive load and white noise) in the other home visit.

***Control condition: PACT – Standard*.** In the control condition, parents completed two versions of the PACT in its original form as described above. These two versions differed only in the pictures that were used (e.g., a child spilling chocolate cake versus a child spilling ice cream), but both contained ten ambiguous and five neutral pictures. The first administered task in the control condition was matched with the first administered task in the experimental condition (i.e., the pictures were the same), and the second task in de control condition with the second task in het experimental condition (see Table 1 for an example). From this point onwards, any comparison between an experimental and control condition always refers to the matched condition.

Experimental condition: PACT – Cognitive load. In this experimental condition parents completed the PACT that included induction of cognitive load by asking parents to remember 10 daily groceries (e.g., bread, lemonade, bananas) during the task. At the start of the task four pictures of groceries were separately displayed for 500ms each, the other six groceries appeared during the task; one after every two series of attribution questions. At the end of the task parents were asked to write down as many groceries as they could remember. Cronbach's alphas for negative parental attributions were .89 for mothers, and .91 for fathers.

Experimental condition: PACT – White noise. In this experimental condition***,*** parents completed the PACT while wearing headphones which distributed a constant white noise (85 dB; stressful without causing damage to hearing; Hillier et al., 2006; Liu et al., 2006; Dutch National Hearing Foundation, 2017). The experimenter monitored if the parents did not lower the volume or take off the headphone, which none of the participants did. Cronbach's alphas for negative parental attributions were .92 for mothers, and .93 for fathers.

Within the conditions, the two tasks were separated by a 5-minute break in which parents watched a movie with relaxing nature images (e.g., sunny beach, soft waterfall, quiet lake). The order in which the two sets of attribution drawings were used, was counterbalanced between families. For each parent, the same order of sets was used across conditions. No significant differences were found in negative attribution scores between the two different sets within the two control conditions and the two experimental conditions; for mothers (*p*s > .11) or fathers (*p*s > .08). The order in which parents received the cognitive load component and the white noise component and the two matching control tasks (i.e., task order) was also counterbalanced between families. Task order was added as a covariate to control for possible order effects.

Risk. A risk score was computed by the standardized sum of partner-related stress, parenting stress, and child abuse potential, because in our previous studies, these factors were related to negative parental attributions (Beckerman et al., 2017, 2018).

Partner-related stress. Parents individually completed the marital scale of the Maudsley Marital Questionnaire (MMQ; Crowe, 1978). The scale asked parents to rate 10 items about their satisfaction of the relationship with their partner on an 8**-**point Likert scale (0 *very positive* to 8 *very negative*). The Cronbach's alphas of the marital scale in this sample were .88 for mothers, and .89 for fathers.

Parenting stress. Parenting stress was measured with the Parenting Daily Hassles Scale (PDH; Crnic & Greenberg, 1990). Parents rated 20 statements about potential hassles related to challenging child behavior and parenting tasks that occurred in their family in the previous week on a 5**-**point Likert scale ranging from 0 *no burden* to 4 *great burden*. The Cronbach's alphas of the PDH scale in this sample were .88 for mothers, and .83 for fathers.

Child abuse risk. The short version of the Child Abuse Potential Inventory (CAPI; Milner, 1986, 1990; Bouwmeester-Landweer, 2006) was used to measure child abuse risk. This scale contains a main abuse scale with 70 statements divided over 5 subscales (distress, rigidity, unhappiness, problems with family, problems with others) of which parents can agree or disagree with. A troublesome answer is given a risk score ranging from 1 to 23, resulting in a maximum score of 450. Cronbach's alphas in this sample were .86 for mothers, and .85 for fathers.

Risk composite. Based on the above mentioned risk factors, a composite risk factor was calculated for both mothers and fathers. For mothers, correlations between the risk factors were: r (104) = .21, p = .03 for partner-related stress and parenting stress; r (104) = .54, p < .00, for partner- related stress and child abuse risk; r (104) = .39, p < .00, for parenting stress and child abuse risk. For fathers, correlations between the risk factors were: r (104) = .24, p = .01, for partner-related stress and parenting stress; r (104) = .53, p < .00, for partner- related stress and child abuse risk; r (104) = .12, p = .22, for parenting stress and child abuse risk. The risk composite was computed as the standardized sum of partner-related stress, parenting stress, and child abuse risk.

Data Analyses

Data-inspection revealed one outlier (i.e. a standardized individual score lower than -3.29 or higher than 3.29; Tabachnick & Fidell, 2012) in the mother's risk composite. This value was winsorized, making it the subsequent highest score within the particular variable. All study variables were normally distributed. Repeated Measures ANCOVAs were used to test differences between attribution tasks (experimental versus matched control) and to investigate interaction effects with the risk composite.

Results

Preliminary Analysis

As previously mentioned, comparison between an experimental and control condition always refers to the matched condition, tasks are labeled as follows in the result section: Cognitive Load (CL), Control CL, White Noise (WN), Control WN. Correlations and descriptive statistics of the study variables and relevant background variables are displayed in Table 2. For mothers and fathers all four attribution tasks were positively correlated (rs ≥ .55, ps < . 00), meaning that a higher score for negative attributions on one of the attribution tasks related to a higher score for negative attributions on one of the other attribution tasks. This indicates relative stability among the different versions of the PACT. For each task, negative attributions were also positively correlated between parents (rs ≥ .40, ps < .00). In addition, mothers and fathers did not significantly differ in their negative attribution scores on the four different tasks; t(104)**= -**0.34, p =.74 (Cognitive Load), t(104)**= -**0.69, p =.49 (Control CL), t(104)**= -**0.98, p =.33 (White Noise), t(104)**= -**0.96, p =.34 (Control WN), which indicates within-family congruence in parental negative attributions. None of the background variables (i.e., age child, gender child, number of children, SES, age parent) were related to negative attributions and the risk composite, so they were not added as covariates in subsequent analyses.

Table 2

Correlations, Means, Standard Deviations and Range for Background and Study Variables (N=105)

					Father						
	1	2	3	4	5	6	7	8	9	10	*M* (*SD*)
1. Age child					.14	.13	.17	.26**	.23*	.05	3.44 (1.11)
2. Gender child	-.01				-.07	.01	.08	-.04	.00	.05	1.50 (0.50)
3. Number of children	.29**	-.05			.04	.22*	.24*	.25**	.31**	-.02	1.90 (0.74)
4. SES	.02	.04	-.03		.26**	-.03	-.02	-.03	-.08	-.31**	0.03 (1.73)
Mother											
5. Age Parent	.26**	.04	.17	.50**	.58**	-.01	-.03	.12	.03	-.10	35.14 (4.98)
6. Attributions Cognitive Load (CL)	.19	-.09	.17	.00	.19	.40**	.80**	.81**	.62**	.12	14.31 (7.50)
7. Attributions Control CL	.07	.02	.11	-.10	.14	.80**	.42**	.68**	.74**	.09	14.63 (8.16)
8. Attributions White Noise (WN)	.28**	-.03	.16	.01	.11	.65**	.55**	.59**	.77**	.15	15.74 (8.53)
9. Attributions Control WN	.23*	-.02	.11	-.08	.00	.63**	.70**	.82**	.45**	.22*	15.31 (8.91)
10. Risk Composite	.11	.03	.13	-.15	.01	.38**	.23*	.33**	.33**	.50**	0.00 (2.29)
M (*SD*)					32.70 (4.4)	14.75 (8.29)	15.08 (7.81)	16.05 (9.44)	15.54 (8.51)	0.00 (2.19)	

Note: Correlations below the diagonal (light grey) refer to associations between variables of the mother, correlations above the diagonal (darker grey) refer to associations between variables of the father, and correlations on the diagonal (darkest grey) reflect associations between mothers and fathers.

Effects of Cognitive Load and White Noise Manipulations

To investigate the effect of the two experimental conditions on negative attributions, two Repeated Measures ANOVAs were conducted; one for cognitive load and one for white noise. The RM-ANOVAs were conducted with the repeated measures of negative parental attributions in the two conditions (i.e., experimental and control condition) of mothers and fathers (parent gender) and task order as control variable (between subjects). To investigate the interaction effect of, and the personal risk composite two RM-ANCOVAs were conducted for mothers and fathers separately, with the risk composite as additional between-subjects measure.

Cognitive Load. For cognitive load, no main effect was found for condition , $F(1, 101) = 0.25$, $p = .625$, $\eta p2 = .00$, or for parent gender, $F(1, 101) = 0.04$, $p = .84$, $\eta p2 = .00$, on negative attributions. In addition no interaction effect of condition by gender parent on negative attributions was found, $F(1, 101) = 0.36$, $p = .55$, $\eta p2 = .00$. The separate RM-ANCOVAs for mothers and fathers showed only for mothers a main effect of the risk composite, $F(1, 100) = 11.70$, $p = .00$, $\eta p2 = .11$.This indicates that mothers with higher risk composite scores, had more negative attributions in both the experimental and the control condition task. Furthermore, a significant interaction effect between condition (experimental versus control) and the risk composite was found for mothers, $F(1, 100) = 4.04$, $p = .04$, $\eta p2 = .04$ (Figure 1), meaning that a combination of experimentally induced stress and high risk yielded the highest scores on negative attributions. For fathers, no main effect, $F(1, 100) = 1.26$, $p = .27$, $\eta p2 = .00$, nor an interaction effect was found for the risk composite, $F(1, 100) = 0.12$, $p = .73$, $\eta p2 = .00$. Comparison of the $\eta 2$ for the interaction effect of the risk composite for mothers ($\eta 2 = 0.039$) and fathers ($\eta 2 = 0.001$) revealed no significant differences (p's >.23). Task order showed in none of the analyses significant main or interaction effects ($Fs \leq 1.31$, $ps > .26$)., indicating that there were no effects of the order in which experimental and control condition were administered.

White Noise. Concerning white noise, no main effect was found for condition, $F(1, 101) = 0.01$, $p = .95$, $\eta p2 = .00$, or for parent gender, $F(1, 101) = 0.42$, $p = .52$, $\eta p2 = .00$, nor was there an interaction effect between condition and parent gender, $F(1, 101) = 0.17$, $p = .68$, $\eta p2 = .00$. The separate RM-ANCOVAs for mothers and fathers showed only a significant main effect of risk for mothers, $F(1, 100) = 14.27$, $p = .00$, $\eta p2 = .12$; the higher the risk score, the more negative attributions on both the experimental and the control conditions of the white noise task. In contrast with cognitive load no interaction effect was found for condition and risk composite on negative attributions for mothers, $F(1, 100) = 0.09$, $p = .76$, $\eta p2 = .00$. The results for fathers were the same as for cognitive load, with no significant results for the main effect of risk composite, $F(1, 100) = 2.63$, $p = .11$, $\eta p2 = .03$, or the interaction effect between condition and risk composite, $F(1, 100) = 0.63$, $p = .43$, $\eta p2 = .00$. Again, a comparison of the $\eta 2$ for the interaction effect of the risk composite for mothers ($\eta 2 = 0.001$) and fathers ($\eta 2 = .006$) revealed no significant

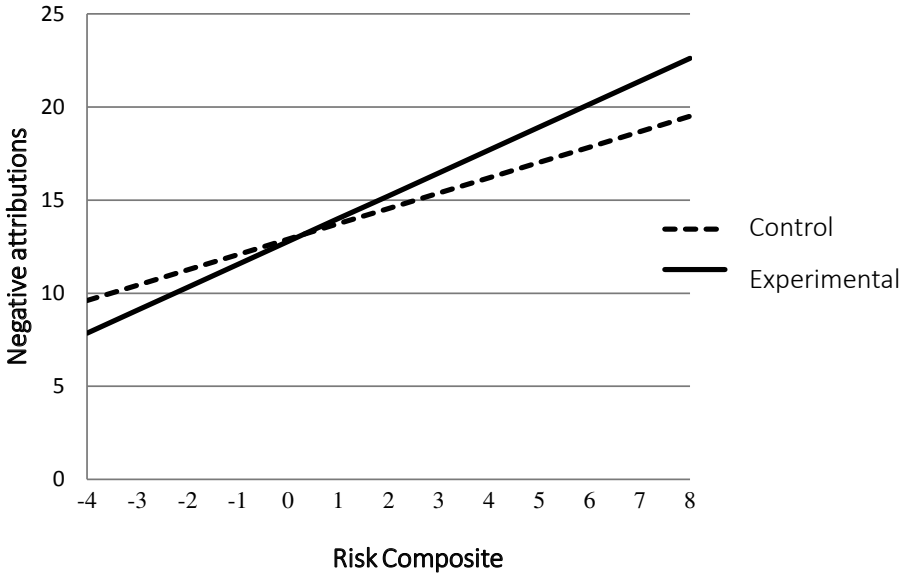

Figure 1. Interaction effect between cognitive load condition (control vs. experimental) and risk composite score on maternal negative attributions. Note: Risk composite scores are total sum scores of standardized values

differences (p's >.75). Similar to the RM-AN(C)OVAs for cognitive load no order effects were detected (Fs ≤ 3.09, ps > .08).

Discussion

The general effects of induced stress, as expected in hypothesis 1, were not found; parents did not attribute child behavior more negatively in the experimental conditions compared to the control conditions. Considering mothers, we found some proof for our other two hypotheses: the effect of induced situational stress (only for cognitive load) on negative parental attributions was more pronounced for high-risk mothers, compared to low-risk mothers (hypothesis 2), and high-risk mothers attributed more negatively compared to low-risk mothers, across both the experimental (white noise and cognitive load) and control condition (hypothesis 3). For fathers, results did not confirm hypothesis 2 or 3; risk was not related to more negative parental attributions nor did it influence fathers responses to the experimental conditions.

With this experimental study we shed more light on the theoretically assumed causal relation between stress and negative parental attributions (Milner, 1993, 2003), which until now has been primarily studied in cross-sectional research designs. Previous studies found that high-risk parents attributed child behavior more negatively compared to low-

risk parents (e.g., Beckerman et al., 2017; Berlin et al., 2013; Haskett et al., 2006), but an effect of induced situational stress on parental attributions was not found (Cassles & Milner, 2000; De Paúl et al., 2006). In this study we replicated these findings in mothers and did not find evidence for a general causal effect of stress on attributions. This might suggest that there is no causal relation between stress and negative attributions, and that the association between high risk and negative attributions indicates that parents who attribute child behavior more negatively, are also parents who experience more stress. However, we did find an interaction effect between risk (e.g., existing stress) and induced situational stress. Although induced situational stress did not seem to affect parents overall, we did find that the combination of high risk and experiencing situational stress led to more negative parental attributions. Nevertheless, this relation was only found for mothers and only for one of the two types of induced stress (i.e. cognitive load), therefore these results should be interpreted with caution and replication studies should provide more inside into these processes.

Even though no firm conclusions can be drawn from these results, we can speculate what might explain the possible combined effect of induced and existing stress on negative attributions. First, it could be that there is a threshold in the amount of stress a parent needs to experience before it taxes parental information processing; the situational stressor alone might not have been stressful enough, but the combination of existing risk and situational stress might have added up affecting parental attributions.

A second explanation could be that high-risk parents compared to low-risk parents experienced more stress when exposed to the stressor, which might have caused differences in automatic processing and subsequently differences in negative parental attributions. The SIP-model indeed reasons that high-risk parents compared to low-risk parents might be more physiological reactive to stressful stimuli and therefore may use more automatic processing, making them less attentive to situational factors and thereby negatively affecting their parental attributions (Milner, 1993, 2003). Yet another possible explanation is that automatic processing in high-risk parents may lead to different outcomes than in low-risk parents, because of differences in pre-existing schemata (i.e., general beliefs about children and parenting behavior). As a consequence of automatic processing, parents are less likely to take situational information into account and rely more on fixed beliefs, ingrained thought patterns which also have been referred to as pre-existing schemata (i.e., general beliefs about children and parenting behavior) in the SIP-model (Milner, 1993, 2003), and these schemata are thought to be negatively biased in high-risk parents. Of course, a combination of these explanations might also be at work here.

The interaction effect between risk and induced stress was found for the cognitive load condition only. In line with the previous threshold argumentation, this might indicate that only the cognitive load condition was sufficiently stressful to negatively influence parental attributions in high-risk mothers. While white noise has been found to elevate stress levels

and to lower cognitive performance (e.g., Hillier, Alexander, & Beversdorf, 2006; Ising et al., 2000; Liu, Iwanaga, Shimomura, & Katsuura, 2007), there is also evidence that white noise only negatively affects information processing from an intensity of 90dB upwards (Hillier et al., 2006; Oishi et al., 1999), and that white noise at the level of background noise might even improve cognitive performances, a process called stochastic resonance (e.g., McDonnell and Ward, 2011; Ohbayashi et al., 2017). This might indicate that our white noise stressor (85 dB; stressful without causing damage to hearing; Hillier et al., 2006; Liu et al., 2006; Dutch National Hearing Foundation, 2017) could have been too trivial to negatively influence the parental attribution.

Additionally, in comparison to white noise, cognitive load might have been a stressor that is more realistically related to daily-life situations in which parents attribute child behavior (i.e., remembering groceries, having many things on your mind). Manipulated stress that resembles real-life stress may have a greater impact than other forms of induced stress. This could be seen in line with previous findings that showed that stress was related to the child or parenting is particularly related to negative parental attributions (Beckerman et al., 2017; 2018; Dopke & Milner, 2000; Schellenbach, Monroe, & Meluzzi, 1991). Moreover, it is likely that the cognitive load condition taxed parent's working memory, and the white noise condition parent's attention. Perhaps automatic processing is more likely to occur when a particular executive function is challenged. Also, the white noise stressor was constantly present, where the cognitive load was increased (i.e., more groceries to remember) during the attribution task. A constant stressor like white noise might be more easy to ignore, whereas cognitive load constantly taxes the parent's working memory and cannot be ignored. As a consequence less resources might have been available for the task during the cognitive load condition, in comparison to the white noise condition, and therefore the cognitive load condition might have been more stressful for parents.

For fathers, no main effects were found for induced stress and risk, nor an interaction effect between induced stress and risk. A comparison between mother and father attributions within both conditions revealed that they did not differ in overall negative attributions and that they did not react differently regarding the different stressors (i.e., no difference in amount of negative attributions). In addition, a comparison between effect sizes for the stress x risk interaction also revealed no significant differences. One of our previous studies pointed in the same direction considering differences between mothers' and fathers' attributional style in relation to stress; the effects did not significantly differ, but for mothers a higher number of significant associations between stressors and negative parental attributions were found (Beckerman et al., 2018). Nevertheless, some studies suggest that mothers and fathers are different in their attributional style (e.g., Chen et al., 2008; Lansford et al., 2011; Miller, 1995), and that they respond differently to stress (Kudielka & Kirschbaum, 2005). More research is needed to further explore possible differences in mother and father attributions in relation to stress.

Some limitatons should be mentioned. First, we used convenience sampling to recruit families to partcipate in our study (see Beckerman et al., 2018). Although we tried to include families with different socioeconomic backgrounds, for example by recuiting in different neighborhoods and using social media, most of the families that enrolled had a relatively high SES. Additionally, we chose to select only families who self-identified as having a Dutch cultural background, because culture might influence parental attributions. Taken the above into consideration, generalization claims should be made cautiously and only focus on Dutch high SES families, or families with a comparable background. Similarly, the fact that our study included a low-risk sample is also a limitation. As previously suggested, to explain the absence of a main effect for induced situational stress and the interaction effect between risk and induced situational stress, it is imaginable that there is some kind of threshold of stress needed to bias parental attributions. This might also explain the small effects and the trivial differences between mothers and fathers that were found. The majority of the population experienced mild stress daily, which might even be beneficial for cognitive functioning (Kirby et al., 2013; Parihar, Hattiangady, Kuruba, Shuai, & Shetty, 2013), but when this stress becomes more severe it can have detrimental effects on cognitive performance (Kirby et al., 2013; Lupien & McEwen, 1997). Thus, for parental attributions to become biased the parent needs to experience a serious amount of stress when we apply this reasoning.

Moreover, the absence of a main effect for induced situational stress might also tell us that the task manipulations were not stressful enough or that existing stress is more important for negative attribution. As previously discussed, the intensity of the white noise stressor might have been too limited to be stressful. In addition, the cognitive load manipulation might not have been equally stressful during the whole task, because the load increased with each additional grocery to remember. The white noise condition might have been more stressful when not only the intensity was amplified, but also when the noise was infrequently presented during the task, making it more difficult to ignore. The cognitive load condition might be presented with the same amount of load during the whole task, to make the condition more stressful. We advise future research to add (physiological) measures of perceived stress to get insight in the stressfulness of a manipulation.

In conclusion, this study contributes to the knowledge about the relation between stress and negative parental attributions. In an experimental design we found some evidence that high-risk mothers may be more negatively affected in their parental attributions by situational stress, compared to low risk mothers. This may imply that stress at least partially, predicts negative attributions as proposed by the SIP-model (Milner, 1993, 2003). Moreover, we discussed the absence of a main effect for induced situational stress (i.e., there might not be a causal effect, task manipulation may not be stressful enough), and several explanations for the risk by situational stress interaction were proposed (i.e., stress threshold, physiological responsiveness to stress, and pre-existing schemata). It is

important to unravel the cause of this interaction effect and gain fundamental knowledge on how parental attributions are affected, to become able to subsequently effectively intervene. For instance, if negative parental attributions are caused by high amounts of stress, it is important to reduce stress. But if physiological responsiveness to stress and pre-existing schemata also play a role in affecting parental attributions under (minor) stressful conditions, stress reduction alone might be insufficient and interventions should also focus on becoming more resilient to stress and changing pre-existing schemata. Future research can help to unravel these issues by experimentally studying the effect of stressors with different intensities on parental attributions, measuring physiological stress responses and pre-existing schemata, in both high- and low-risk samples.

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Chapter 5

General Discussion

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In this dissertation precursors and consequences of negative parental attributions were studied as theorized by Milner's (1993, 2003) Social Information Processing (SIP) model of Child Physical Abuse (CPA), that was introduced and illustrated in Chapter 1. Specifically, it was tested if negative parental attributions function as a mediator between stressors and dysfunctional parenting. As presented in Chapter 2, in our first study it was found that mothers' negative parental attributions mediated the association between parenting stress and harsh and abusive discipline. No such relation was found for the other investigated stressors (i.e., low SES, partner-related stress), or for childhood maltreatment. In our second study, we replicated the finding that the relation between parenting stress and harsh and abusive discipline was mediated by negative parental attributions, for mothers as well as for fathers. In addition, for mothers we found that negative parental attributions also functioned as a mediator between the association of partner-related stress and abuse risk on the one hand, and harsh discipline and (low) observed supportive parenting on the other hand. Moreover, only parenting stress remained significant when parenting stress, partner-related stress, and abuse risk were studied in one model. This replication study with extension was outlined in Chapter 3. Last of all, the findings regarding situational stress as precursor of negative parental attributions were demonstrated in Chapter 4. In an experimental study design it was found that the effect of induced situational stress (cognitive load) on negative parental attributions was more pronounced for high-risk mothers, compared to low-risk mothers. Below, the overall findings of the dissertation will be discussed in terms of its fundamental theoretical implications; how do the results fit into the SIP-model, what were important limitations, and what can be advised regarding future research directions? In addition, implications for prevention and intervention purposes are discussed; what do the findings of this dissertation mean for programs that are designed to reduce (the consequences of) child maltreatment?

Theoretical Implications

The findings of the two studies that were presented in this dissertation contributed to more empirical knowledge about the SIP-model (Milner, 1993, 2003). As outlined in Chapter 1, a considerable number of studies confirmed the theorized attributional difference between high-risk/ maltreating parents and low-risk/ non-maltreating parents, since the introduction of the model 25 years ago (e.g., Burchinal, Skinner, & Reznick, 2010; De Paul, Asla, Perez-Albeniz, & De Cadiz, 2006; Slep & O'Leary, 1998). High-risk/ maltreating parents tend to attribute more responsibility and hostile intend to the child and evaluate (ambiguous) child behavior as more serious, wrong, and blameworthy. Nevertheless, some studies showed inconclusive findings regarding the proposed attributional differences (e.g., Dadds, Mullins, McAllister, & Atkinson, 2003; Montes, De Paul, & Milner, 2001). As a consequence, it was reasoned that there is need for

replication studies (Milner, 2003). In addition, it was advised that future research should study interaction effects of parental attributions with different parts of the model and that the interplay with stress would be explored further, all within study designs that use different groups of parents and that link parental attributions to observational measures of parenting. The studies presented in this dissertation were based on the above advised study directions in several ways, thereby contributing in deepening empirical evidence for the SIP-model.

Negative parental attributions and stress. Firstly, the interplay between different parts of the model was studied by testing the proposed mediational role of negative parental attributions between stress and dysfunctional parenting. We found proof for this mediational role in both of our studies. Results pointed in the direction of parenting stress to be the most influential type of stress that affects negative parental attributions, and consequently dysfunctional parenting. Only the relation between parenting stress and dysfunctional parenting was consistently found to be mediated by negative parental attributions (both studies, for self-reported and observed parenting, for mothers and fathers). Mediation was not found for SES and childhood maltreatment as predictors, and mediation for partner-related stress and child abuse risk disappeared when studied simultaneously in one model with parenting stress (Chapters 2 & 3).

These findings might indicate that stressors that are directly related to the child and/or are more related to daily parenting situations in which parents attribute child behavior, might influence parental attributions most. As explained by the SIP-model, the more stress a parent experiences, the more the parent will engage in automatic processing; depend on pre-existing schemata and thinking patterns that are well-learned and are easily accessible (i.e., “children should not spill milk and must be held responsible for it”) instead of taking situational information into account (“his little sister bumped into him, so he should not be held responsible for spilling milk”). In addition, it is explained that when automatic processing is caused by stress that is child/parenting related, it is likely that other negative emotions and cognitions (e.g., anger and hostility) will also be more at the surface when observing challenging child behavior, because this reminds parents of negative parenting experiences in the past (Milner, 1993, 2003). So, the combination of stress and negative affect as a consequence of parenting stress might cause an increased susceptibility to automatic processing, and subsequently bias in parental attributions. Several other empirical findings also supported this line of thought (Dopke & Milner, 2000; Schellenbach, Monroe, & Meluzzi, 1991).

Secondly, studying the interplay between parts of the model was extended by studying the causal relation between stress and negative parental attributions in an experimental design. Our first study and other previous research showed that stress is indeed related to more negative parental attributions (e.g., Berlin, Dodge, & Reznick, 2013; Clément &

Chamberland, 2009; Haskett, Scott, Willoughby, Ahern, & Nears, 2006), however causality claims were precluded because of the cross-sectional study designs. After contributing to the empirical evidence that heightened stress levels are indeed related to more negative parental attributions (Chapters 2 & 3), the relation between stress and negative parental attributions was further studied in an experimental design (Chapter 4). As theorized by the SIP-model, stress predicts negative parental attributions, but alternatively it could be the other way around: negative attributions could cause stress. To be more specific, when parents attributions are negatively biased, it is possible that they experience more stress because of this bias. It could be that parents with more negative parental attributions, are parents who generally experience things more negatively than other parents, and therefore experience more stress in their lives.

In an experimental design we found that induced situational stress alone was not sufficient to predict negative parental attributions. Moreover, we only found that for mothers the effect of induced situational stress, elicited by cognitive load (i.e., remembering groceries, having many things on your mind), enhanced the relation between existing stressors and negative attributions. No such interaction effect was found for white noise as induced stress. This might indicate that there is no causal relation between stress and negative parental attribution, and that the relation between high risk and negative parental attributions means that parents who attribute child behavior more negatively experience more stress. Nevertheless, we found that a combination of existing stress and situational stress did make a difference; the effect of induced situational stress (when elicited by cognitive load) was more pronounced for high-risk mothers, compared to low-risk mothers. This might imply that stress at least partially predicts negative attributions as theorized by the SIP-model (Milner, 1993, 2003). This implication should be interpreted with caution; the interaction effect was only found for one of the two types of induced stress (i.e. cognitive load) and only for mothers. Even though we should be careful drawing firm conclusions, we may speculate about possible explanations for this combined effect of induced and existing stress on negative attributions. Firstly, high-risk, compared to low-risk parents might be more physiologically responsive to stress and/or they may have more biased pre-existing cognitions, as proposed by the SIP-model. Physiological responsiveness to stress makes parents more susceptible to automatic processing, and as consequence parents will rely less on situational information and more on pre-existing schemata. In addition, when these pre-existing schemata are biased as well, there might be a double risk in negatively affecting the parental attribution. Moreover, it could be reasoned that parental attributions are not easily taxed by stress. A serious amount of stress (existing and situational stress) might be needed to negatively influence the parental attribution, which can indicate that the system is quite robust. The latter argumentation was also proposed by Cassles and Milner (2000), who also did not find an effect for induced stress on negative parental attributions. Yet another explanation could be that automatic processing leads to different outcomes in high-risk compared to low-risk parents, because of differences in their pre-existing schemata. When stressed,

both high- and low-risk parents take situational information less into account and rely more on ingrained thought patterns, i.e. pre-existing schemata (general beliefs about children and parenting behavior), but in the case of high-risk parents these schemata might contain more biased information, leading to more negative attributions. Of course, a combination of the above given explanations might also be at work here. For now we can only cautiously conclude that negative parental attributions are (partially) caused by stress, and speculate about why high-risk parents were more affected by induced stress than low-risk parents. Future research can help to disentangle these speculations by experimentally studying the effect of stressors with different intensities on parental attributions, measuring physiological stress responses and pre-existing schemata, in both high- and low-risk samples.

Negative parental attributions and fathers. To address the encouragement of studying different groups of parents, we examined negative parental attributions for mothers as well as for fathers. As suggested, applying models found for mothers to fathers might be problematic, because they might be different in their parenting (mother: secure base, talk vs. father: play, exploration, discipline), in the amount of time they spend with their children (in general, mothers still spend more time with children), and in their biological make-up (different physiological reaction to stress) (Lamb, 2010; Kudielka & Kirschbaum, 2005). For example, when fathers are more the discipliners of the family, it might be plausible that fathers attribute challenging child behavior as more wrong and blameworthy and choose more often a disciplinary response, where mothers might attribute the behavior as more accidental and/or piteous, and comfort the child as a result of her family role of being the secure base. Or, when mothers spend more time with their children, their attributions might be based on more past child-related/ parenting information (for better or for worse), compared to fathers' attributions. Yet another explanation for expected attributional differences between mothers and fathers, is that they differ in physiological stress reaction, and hence they have different susceptibility to automatic processing. In a review on sex differences in stress responses by Kudielka & Kirschbaum (2005), it was reported that women subjectively experience more stress and show higher stress vulnerability than men. But, experienced stress seems not representative of physiological stress responses (i.e., increases in cortisol), and it has even been suggested that men are more physiologically reactive (i.e., increases in cortisol) to stress compared to women. Moreover, it has been speculated that the type of stress might influence differences in stress responses, with men more reactive to psychological stress (achievement challenges), and women more to psychosocial/ interpersonal stress (e.g., conflict, social rejection).

In Chapters 3 & 4, the results of mediation analyses and stress as precursor of negative parental attributions were outlined for both mothers and fathers and we tested

if the effects were different for mothers than for fathers. For both groups of parents we found that negative parental attributions mediated the relation between parenting stress and harsh and abusive parenting. For fathers we did not find indirect effects for other stressors (i.e., partner-related stress, abuse risk) or with observed supportive presence. Neither did we find an interaction effect of risk and induced stress on negative parental attributions, as found for mothers. Although at first glance our results indicate differences in negative parental attributions between mothers and fathers, after comparing effects no overall differences were found between fathers and mothers (Chapters 3 & 4). Several explanations can be given for these findings. First of all, it might imply that mothers and fathers are not different in their parental attributions and that they are not differently affected by stress regarding their negative parental attributions. Although theories suggest differences in parenting, biological makeup, and hours spent with their children, they simply might not cause differences in negative parental attributions. Or, they might only cause differences in samples with more serious amounts of risk and/or when parents experiences a more intense situational stressor. Moreover, the sample in both of our studies consisted of parents with medium to high SES. In these families it might nowadays be more common to equally divide parenting tasks between mothers and fathers, and as a consequence parenting roles and time spent with the child might not differ that much. Future studies can elaborate on studying possible differences between mother and father attributions by taking into account the amount of time parents spend with their children, studying the division of parenting roles, and using more intense situational stressors in both high- and low-risk samples. In addition, it can be interesting to study negative parental attributions in relation to child outcomes. Mother and father attributions might be similar in relation to parenting outcomes, but they might predict child outcomes differently. For example, in a study of Williamson and Johnston (2015) it was found that only father attributions, after controlling for mother attributions, was uniquely predictive of child behavior problems. We recommend future research to study mother and father attributions not only individually, but also in interaction with each other; how do they relate and interact within the family system and how do they (simultaneously, complementary?) influence their children?

Negative parental attributions and observational parenting measures. The advice to link parental attributions to observational measures of parenting was incorporated in Study 2. In Chapter 3 it was described that we used a don't touch task (e.g., Joosen, Mesman, Bakermans-Kranenburg, & Van IJzendoorn, 2012; Van Berkel et al., 2015) to observe parenting behavior, following suggestions to use a stressful parenting task in order to minimize self-reporting bias and to discriminate maltreating parents from non-maltreating parents (Bennett, Sullivan, & Lewis, 2006). The scales harsh physical discipline, verbal overreactive discipline and supportive presence were coded. We could only use supportive presence for data-analyses, because within the other scales there

was hardly any variation in our sample. Consequently, low supportive presence was used as a dysfunctional parenting measure within the SIP-model; parents who score low on supportive presence are parents who fail to use positive strategies in helping the child obey (e.g., induction, empathy, distraction).

It was found that negative parental attributions function as a mediator between stressors and low supportive presence, as was found with self-reported harsh parenting (in both studies; Chapters 2 & 3). This result adds to the proof of stress and negative parental attributions being important predictors of dysfunctional parenting as suggested by the SIP-model (Milner, 1993, 2003). Not only are parents at risk for abuse expected to select more often a power-assertive parenting technique, they are also expected to lack the ability to implement a positive parenting technique, based on their shortcoming in parenting knowledge and their biased expectations concerning compliance (Milner 1993, 2003). In addition, this result might indicate that the SIP-model, originally applicable to power assertive discipline as a risk factor for child physical abuse, might also be valid in explaining other forms of dysfunctional parenting, and subsequently different types of child maltreatment (i.e., emotional abuse, neglect, sexual abuse). Cognitive behavioral models like the SIP-model have been used previously, although rarely, to explain child neglect and child sexual abuse (e.g., Azar, Miller, Stevenson, & Johnson, 2017; De Paul & Guibert, 2008; Howells, 1981). More studies are needed to further test the applicability of the SIP-model for different types of child abuse and neglect.

Negative parental attributions vs. positive parental attributions. Low supportive presence also resembles the inability to implement a positive parenting strategy. In line with these findings, it might be interesting to study (the absence of) positive parental attributions within the SIP-model. In this dissertation we measured solely negative parental attributions, as most of the SIP attributional literature. Do high risk/ abusing parents have less positive attributions, compared to low risk/ non-abusing parents, and how are they related to dysfunctional parenting techniques, and subsequently child maltreatment? According to the attribution theory, it has been hypothesized that parents in general tend to attribute positive outcomes more to internal stable characteristics of the child, and negative outcomes to external situational factors (Miller, 1995). This has been found to work in the opposite way for maltreating parents: mothers rated negative behavior more to internal and stable child characteristics, outside of their control, and positive behavior to external and instable child characteristics (e.g., Larrance & Twentyman, 1983; Bugental, Blue, Cruzcosa, 1989). Other studies found inconclusive evidence regarding this difference in giving credit for positive behavior between high-risk/ maltreating vs. low-risk/ non-maltreating parents (e.g., Bradley & Peters, 1991; Dadds et al., 2003; Miller & Azar, 1996). However, these findings concern internal/external attributions regarding positive child behavior. It addition, it would be interesting to explore if high

risk/ maltreating parents, in comparison to low risk/ non-maltreating parents, have fewer positive attributions regarding neutral and ambiguous child behavior. For example, can the effects of parents' negative attributions (e.g., "spilling milk is serious wrongdoing of my child") be compensated by parents' positive attributions (e.g., "my child looks so cute when he tries to hold his cup straight"), and how are (low) positive attributions related to (dysfunctional) parenting? Future research is encouraged to explore the role of positive attributions within the SIP-model.

Limitations and future research directions. The two studies that were presented in this dissertation have some limitations that need to be mentioned. First of all, in both studies families were recruited by using convenience sampling; families could enroll themselves via a webpage on the internet. Although we tried to include families with different socioeconomic backgrounds, for example by recruiting in different social areas and using Facebook advertisements, most of the families that enrolled had a relatively high SES, resulting in a low-risk sample in both of our studies. A consequence of this selection procedure was low variability in risk scores; most parents were in the lower bound of the different risk scores. This might explain the small effects, the absence of some mediational effects (i.e., SES, childhood maltreatment), and the trivial differences between mothers and fathers that were found. For example, no relation was found between SES and negative parental attributions, and between childhood maltreatment and negative parental attributions (Chapter 2). This might be explained by the fact that there is simply no socioeconomic stress in a high-SES sample, or at least not enough to cause automatic processing, and subsequently bias parental attributions. For experienced childhood maltreatment this might also apply; to have a negative effect on pre-existing schemata and subsequently on parental attributions, there might be a threshold – a certain amount/ severity of experienced maltreatment- that needs to have been reached. Moreover, in our second study (Chapter 3) we could not perform analyses with the observational scales harsh physical discipline and verbal overreactive discipline, because these behaviors were nearly absent in the video observations of our low-risk sample. Nevertheless, by studying parental attributions in two low-risk samples we already found consistent evidence for different parts of the SIP-model. By using high-risk samples in the future, results might even provide more convincing evidence for the SIP-model.

Moreover, we only selected parents who described themselves as having a Dutch cultural background, because it is reasonable to think that culture could influence parental attributions. Indeed, prior research demonstrated that there are differences in cultural values concerning appropriate child behavior and optimal parenting practices (e.g., Gershoff et al., 2010; Korbin, 2003; Ripoll-Nunez & Rohner, 2006). This is especially important given that the effect of (dysfunctional) parenting practices on children may depend on the perceived normativeness of the particular practice (e.g., Deater-Deckard &

Dodge, 1997; Gershoff et al., 2010). Taken the above in consideration, generalization claims should be made cautiously and only focus on Dutch high SES families, or families with a comparable background. We encourage future research in using more heterogeneous samples with regard to SES, risk status and cultural background to further explore the interplay of different stressors on negative parental attributions.

Last, our results regarding the mediational role of negative parental attributions (Chapters 2 & 3) were based on cross-sectional data, so we concluded in the particular chapters that causality claims could only be made on theoretical grounds.. The results of our experimental data (Chapter 4) shed more light on these suggested alternative models; we found some initial proof that stress may, at least partially, predict negative attributions as proposed by the SIP-model. Other experimental and longitudinal study designs can elaborate on this finding and shed more light on the additional suggested pathways of the SIP-model. For example, the pathway of attributions and dysfunctional parenting; negative parental attributions might also be a consequence of dysfunctional parenting, and hence child maltreatment (i.e., post-hoc justification; Milner, 2003).

Although the presented studies in this dissertation have certain limitations and future research is recommended on several areas, the results contributed in deepening empirical evidence regarding interactive elements of the SIP-model. We found proof for the proposed mediational role of negative parental attributions between stress and dysfunctional parenting (including an observational measure) in both studies (for mothers and fathers), and that particularly parenting stress is an influential type of stress that affects parental attributions (Chapter 2 & 3). Furthermore, this dissertation extends the empirical findings regarding the theorized causal relation between stress and parental attributions; it was demonstrated that the effect of experimentally induced stress (elicited by cognitive load, not white noise) on negative parental attributions was more pronounced for high-risk mothers, compared to low-risk mothers.

Implications for prevention and intervention purposes

After lining up theoretical implications, the next important question is how the findings of this dissertation can be used to design effective interventions aimed at reducing (the risk of child) maltreatment. In studying negative parental attributions, we looked into parental cognitions as possible precursors of dysfunctional parenting, and subsequently child maltreatment. We found that parental attributions (partially) mediated the relation between different stressors and dysfunctional parenting, and found initial suggestions that stress is a precursor of negative parental attributions, instead of the other way around. These results advocate that prevention and intervention programs should not solely focus on stressors, but also target negative parental attributions.

Firstly, it can be useful to measure parents' negative attributions as a risk indicator for dysfunctional parenting, and subsequently child maltreatment. When parents are inclined to attribute relatively high amounts of responsibility and hostile intent to challenging but normative child behavior, this may serve as a heightened risk for the use of dysfunctional parenting techniques. So, negative parental attributions may merit a place within methods that analyze risks for parenting problems, and subsequently child maltreatment. For example, in the Netherlands child and family professionals are trained to work with instruments that systematically screen for parenting situations that might compromise the child's wellbeing (e.g., Licht Instrument Risicotaxatie Kindveiligheid – Jeugdzorg;, Ten Berge, & Eijgenraam, 2009). Checklists are used to systematically guide professionals in their signaling for child maltreatment (e.g., Nederlands Jeugdinstituut, 2011; http://www.signalenkaart.nl). Signals/ risk factors for child maltreatment are listed in categories such as physical and emotional wellbeing of the child, behavior of the child, family structure, but also (psychological) behavior of the parent is a part of the list. Although there is awareness of parental cognitions as risk factors - for example high child-related expectations are named as a signal - negative parental attributions are not listed. Based on our results and prior research it is a good consideration to incorporate the parental attributions to the list. Our newly developed attribution task (i.e., the PACT) can be of assistance in screening for negative parental attributions.

Secondly, to prevent or change negative parental attributions it is important to assist parents in developing unbiased interpretations and evaluations of their child's behavior. Creating awareness by educating parents might be an important first step. In the Netherlands, local authorities are responsible for prevention programs regarding child maltreatment. A recent report of De Kinderombudsman proclaimed that policy regarding preventive measures has been intensified in the last few years (De Wilde, Kooijman, Van Boven, & Van der Kooij, 2017). Particularly, the training of professionals to signal and report parenting situations that might compromise the child's wellbeing and (suspicion of) child maltreatment was reinforced. However, the report also concluded that there was a substantive lack in policy on educating parents in positive parenting. Prevention programs that educate parents in positive parenting are advised to incorporate parental attributions; make parents aware of their own attribution biases and help parents to redress them. An example of an existing program that can be used, is Video-Feedback Intervention to Promote Positive parenting and Sensitive Discipline (VIPP-SD; Juffer, Bakermans-Kranenburg, & Van IJzendoorn, 2008; Mesman et al., 2008). In family home visits parents are not only trained in observing their child and positively interacting with their child, they are also educated in child development, knowledge about positive parenting techniques and understanding a child's thoughts and feelings. Moreover, since we found initial proof that stress (partly) predicts negative parental attributions, it would be recommended to additionally focus on stress reduction and/or coping mechanism in such an intervention program to optimally target negative parental attributions. Special attention should then be placed on stress that is directly related to the child and or

parenting. The prior mentioned VIPP-SD program could indirectly be seen as a method that reduces parenting stress, since parents are trained do deal with challenging parenting situations/ child behavior in a positive way and it has been proven to be effective in reducing child problem behaviors (Juffer, Struis, Werner, Bakermans-Kranenbrug, 2017). In addition, mindfulness-based stress reduction programs are nowadays frequently used to help people cope with stress and scientifically they are also found to be promising (Khoury, Sharma, Rush, & Fournier, 2015; Pascoe, Thomson, Ski, 2017;) in their stress reducing effects.

Conclusion

In conclusion, in this dissertation two studies were presented that offer support for the Social Information Processing theory as proposed by Milner (1993, 2003). In both studies it was found that negative parental attributions function as a mediator between stressors and dysfunctional parenting strategies. Especially parenting stress seemed to be an important type of stress that affects negative parental attributions, and consequently dysfunctional parenting. Additionally, in the second study we found some initial proof that stress predicts (partially) negative attributions, instead of the other way around. We did not find proof for attributional differences between mothers and fathers, nor that their attributions were differently affected by stress. Our findings contribute to the knowledge about the etiology of child maltreatment; the way parents interpret and evaluate child behavior (i.e., parental attributions) is of importance in predicting subsequent parenting behavior, and stress is (partially) responsible for attributional differences between parents. This knowledge can be used to design effective interventions aimed at reducing (the risk of) child maltreatment. For example, it has been discussed to incorporate negative parental attributions within screening instruments that trace initial parenting problems and subsequently child maltreatment, and that parenting programs should target negative parental attributions by making them aware of their attributional biases and assist them in neutralizing these biases, accompanied by tools for stress reduction.

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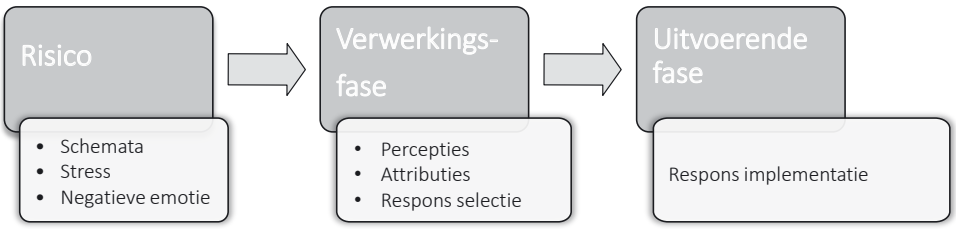
Nederlandse samenvatting (Dutch summary)

Kindermishandeling is een wereldwijd probleem dat jaarlijks miljoenen kinderen treft (Stoltenborgh, Bakermans-Kranenburg, Alink, & Van IJzendoorn, 2015). Mishandelde kinderen krijgen niet alleen te maken met negatieve gevolgen op de korte termijn, ook op de lange termijn lopen deze kinderen een verhoogd risico om fysieke, psychische en gedragsproblemen te ontwikkelen (e.g., Alink, Cicchetti, Kim, & Rogosch, 2012; Jonson-Reid, Kohl, & Drake, 2012). Om deze risico's te voorkomen dan wel tot een minimum te beperken, is het van belang om de oorzaak van kindermishandeling te achterhalen; waarom kan de ene ouder bijvoorbeeld tot tien tellen waar de andere ouder fysiek ingrijpt als het kind uitdagend gedrag vertoont? In de wetenschap worden diverse invalshoeken gebruikt om de etiologie van kindermishandeling te bestuderen (o.a., stress-regulatie, intergenerationele overdracht, gehechtheidsrelatie). Een invloedrijke gedachte is dat de wijze waarop ouders reageren op hun kind, afhangt van de manier waarop ze het gedrag van hun kind interpreteren en evalueren, ook wel ouderlijke attributies genoemd.

Milner (1993, 2000) ontwikkelde een sociale informatieverwerkingstheorie toegespitst op kindermishandeling waarin deze ouderlijke attributies een centrale rol spelen (zie Figuur 1). Milner's model legt uit dat cognities van de ouder (e.g., percepties, attributies) en emotionele gedachtepatronen die gebaseerd zijn op eerdere ervaringen (i.e., schemata), het gedrag van de ouder sturen (i.e., respons implementatie). Het model voorspelt dat ouders die het gedrag van hun kind eerder als vijandig en opzettelijk interpreteren ("hij morst expres melk om mij te pesten"), het kind meer verantwoordelijk houden voor het gedrag ("mijn peuter is zelf verantwoordelijk voor het rechthouden van zijn beker") en het gedrag vaker als fout en afkeurenswaardig zien ("het morsen van melk is stout, mijn kind zou beter moeten weten"), ouders zijn die risico lopen op het gebruik van dysfunctionele opvoedstrategieën en uiteindelijk kindermishandeling. Deze ouderlijke attributies zoals gebruikt in het model van Milner vormen de leidraad van dit proefschrift waarin beoogd wordt een bijdrage te leveren aan het begrijpen van de oorsprong van kindermishandeling, met als uiteindelijk doel het kunnen ontwikkelen van effectieve interventie- en preventieprogramma's om (de gevolgen van) kindermishandeling te voorkomen.



Figuur 1. Sociale informatieverwerkingstheorie kindermishandeling (Milner, 1993, 2003)

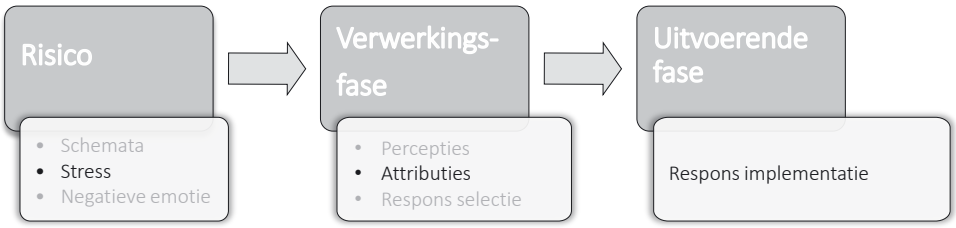
Met de introductie van het theoretisch model van Milner is het empirisch onderzoek naar ouderlijke attributies in relatie tot kindermishandeling aanzienlijk toegenomen. Er is veel bewijs gevonden voor de veronderstelde verschillen in ouderlijke attributies tussen ouders met een hoog risico op het gebruik van kindermishandeling/ mishandelende ouders en laag-risico/ niet mishandelende ouders (e.g., Burchinal, Skinner, & Reznick, 2010; De Paul, Asla, Perez-Albeniz, & De Cadiz, 2006; Farc, Crouch, Skowronski, & Milner, 2008; Irwin, Skowronski, Crouch, Milner, & Zengel, 2014; Milner & Foody, 1994; Slep & O'Leary, 1998). Zo vonden Slep en O'Leary (1998) bijvoorbeeld dat moeders die meer verantwoordelijkheid toekenden aan het gedrag van hun kind, moeders waren die meer overreactieve discipline lieten zien naar hun kinderen. En in een studie van Farc et al. (2008) kwam naar voren dat hoog-risico ouders ambigue afbeeldingen van kinderen (zowel te interpreteren als stout en onhandig) vaker als vijandig interpreteerden dan laag risico ouders. Bovendien lijken hoog- risico ouders minder gevoelig voor verzachtende omstandigheden ("hij morste melk omdat zijn zusje tegen hem aan botste") waaronder het gedrag van het kind plaatsvindt; waar laag- risico ouders het gedrag van het kind bij deze informatie als meer onopzettelijk interpreteren, blijven hoog-risico ouders eerder bij hun oorspronkelijke negatieve attributie (e.g., Milner & Foody, 1994).

Er zijn echter ook onderzoeken die geen (eenduidig) bewijs vonden voor de veronderstelde attributieverschillen tussen hoog-risico/ mishandelende ouders en laag-risico/ niet mishandelende ouders (e.g., Dadds, Mullins, McAllister, & Atkinson, 2003; Montes, De Paul, & Milner, 2001; De Paul et al., 2006). Zo kwam in een studie van Montes et al. (2001) naar voren dat hoog-risico moeders inderdaad meer vijandigheid attribueerden dan laag-risico moeders, maar de mate waarin het gedrag van het kind als fout/afkeurenswaardig werd geïnterpreteerd was onafhankelijk van de risico status van de ouder. En in een studie van Dadds et al. (2002) werd aangetoond dat hoog-risico ouders negatief kindgedrag vaker toeschrijven aan interne eigenschappen van het kind en positief kindgedrag juist vaker aan externe omstandigheden, maar ook in dit onderzoek werden geen verschillen gevonden in hoe ouders het gedrag evalueerden. Het is niet bekend wat de oorzaak is van deze tegenstrijdige bevindingen. Zo kan het zijn dat er slechts marginale verschillen in ouderlijke attributies bestaan tussen hoog risico/ mishandelende ouders en laag risico/ niet mishandelende ouders en dat het daarom lastig is om een statistisch robuust effect aan te tonen. Verschillende methoden bij het meten van attributies (e.g., globaal vs. specifiek, open eind vs. gestructureerd, afbeelding vs. verhaal) en verschillen in risico definitie zijn andere mogelijke verklaringen die geopperd zijn (Milner, 2003).

Onder andere naar aanleiding van deze inconsistente bevindingen deed Milner in 2003 een oproep (die vandaag de dag nog steeds relevant is) voor replicatiestudies, alsmede om de verschillende onderdelen van zijn informatieverwerkingstheorie meer in interactie met elkaar te bestuderen en in relatie tot stress. Niet alleen lag de focus van voorgaand onderzoek vaak slechts op één component van zijn theoretisch model, ook was het zo dat relaties tussen verschillende componenten van het model werden getest zonder

causaliteit aan te tonen. De oproep tot replicatiestudies en experimentele studies werd door Milner aangevuld met de aanbeveling om in toekomstig onderzoek naar ouderlijke attributies meer diversiteit aan te brengen in het bestuderen van groepen ouders (zoals verschillende sociale en culturele achtergronden, naast moeders ook vaders) en dat de verschillende onderdelen van zijn theorie gekoppeld zouden moeten worden aan observationele maten van opvoeding en niet enkel aan zelf rapportage van ouders.

In navolging van deze aanbevelingen zijn twee studies uitgevoerd die in dit proefschrift zijn beschreven. In de eerste studie is bestudeerd of ouderlijke attributies de veronderstelde mediërende rol innemen tussen risicofactoren en opvoedgedrag van ouders (zie alle onderdelen van Figuur 2). De tweede studie is een replicatiestudie van de eerste studie aangevuld met observatiedata en data van vaders. Daarnaast is in deze studie de relatie tussen stress en ouderlijke attributies voor zowel moeders als voor vaders experimenteel bestudeerd (zie de eerste twee onderdelen van Figuur 2).



Figuur 2. Deel van het model dat de focus is van dit proefschrift

In de eerste studie (Hoofdstuk 2) werd gevonden dat negatief attribueren van de moeder de relatie medieert tussen opvoedstress en hardhandige/mishandelende disciplineerstrategieën van de moeder. Dit werd niet gevonden voor de andere onderzochte stressoren (lage sociaal economische status, partner-gerelateerde stress), en ook niet voor meegemaakte kindermishandeling door de ouder zelf. In de tweede studie repliceerden we deze bevinding uit Studie 1, zowel voor moeders als voor vaders. Daarnaast vonden we voor moeders dat de relatie tussen partner-gerelateerde stress en kindermishandelingsrisico aan de ene kant en hardhandige/mishandelende disciplineer strategieën en (lage) ondersteunende aanwezigheid aan de andere kant, ook werd gemedieerd door negatieve attributies. Echter was het wel zo dat enkel opvoedstress significant bleef wanneer opvoedstress, partner gerelateerde stress en meegemaakte kindermishandeling in één model werden bestudeerd. Deze replicatiestudie met aanvullende bevindingen is beschreven in Hoofdstuk 3. Ten slotte zijn de experimentele resultaten van studie 2 weergegeven in Hoofdstuk 4. Er werd gevonden dat gemanipuleerde situationele stress (i.e., toename van cognitieve belasting) een meer uitgesproken effect had op negatieve attributies van hoog-risico moeders.

Beide studies leveren bewijs leveren voor het theoretisch model van Milner (2003); negatieve attributies mediëren de relatie tussen stressoren en dysfunctionele/ mishandelende opvoedstrategieën. Stressoren die direct gerelateerd zijn aan het kind en/of aan dagelijkse opvoedsituaties, zijn vermoedelijk het sterkst gerelateerd aan de negatieve attributies van ouders. Daarnaast vonden we aanwijzingen voor de causale relatie tussen stress en negatieve attributies; stress leidt tot meer negatieve attributies bij ouders in plaats van dat ouders met meer negatieve attributies meer stress ervaren. Echter moeten we zeer voorzichtig zijn met deze interpretatie aangezien we deze bevinding enkel vonden voor hoog-risico moeders en voor één type geïnduceerde stress (cognitieve belasting en niet witte ruis). Hoewel er op het eerste oog verschillen lijken te zijn tussen de werking van negatieve attributies van vaders en moeders binnen het model, toont een effect vergelijking aan dat binnen onze studie er geen verschillen bestaan tussen vaders en moeders. Verder laten de resultaten uit dit proefschrift zien dat negatieve attributies ook als mediator functioneren tussen stressoren en de observatiemaat (lage) ondersteunende aanwezigheid, zoals eerder werd aangetoond voor zelf gerapporteerde hardhandige/mishandelende disciplineer strategieën. Dit vertelt ons dat het model van Milner mogelijk bruikbaar is voor het verklaren van meerdere vormen van dysfunctioneel opvoeden en vervolgens dus ook toepasbaar kan zijn voor de verklaring van meerdere typen kindermishandeling (zoals emotionele mishandeling/verwaarlozing).

Naast het feit dat de bevindingen uit dit proefschrift bijdragen aan de empirische kennis rondom het ontstaan van kindermishandeling, kunnen we ook enkele implicaties afleiden voor preventie- en interventiedoeleinden. De aangetoonde mediërende rol van negatieve attributies tussen stressoren en (dysfunctioneel) opvoeden geeft aan dat preventie en interventieprogramma's die er op gericht zijn (het risico op) kindermishandeling te verlagen, zich niet enkel moeten richten op stressoren, maar ook negatieve attributies van ouders moeten aanpakken. Zo kan het meten van negatieve attributies bij ouders als risico indicator dienen voor dysfunctioneel opvoeden/ kindermishandeling, maar ook zouden (risico) ouders ondersteund kunnen worden in het ontwikkelen van objectieve interpretaties en evaluaties van kind gedrag door middel van voorlichting en scholingsprogramma's (zoals VIPP-SD; Juffer, Struis, Werner, Bakermans-Kranenbrug, 2017). Om negatieve attributies optimaal bij te kunnen sturen is het daarnaast aan te raden om binnen een dergelijk programma ook aandacht te schenken aan stressreductie en/of zelfregulerende vaardigheden (bijvoorbeeld mindfulness; Khoury, Sharma, Rush, & Fournier, 2015; Pascoe, Thomson, Ski, 2017), aangezien we aanwijzingen vonden dat negatieve attributies (deels) door stress worden veroorzaakt.

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Curriculum Vitae

Marieke Beckerman werd geboren op 15 februari 1983 te Dordrecht. In 2001 haalde ze haar VWO-diploma aan het Stedelijk Dalton Lyceum in Dordrecht. In 2002 begon ze aan de studie Pedagogische Wetenschappen aan de Universiteit van Leiden; in 2006 behaalde ze het bachelor diploma van deze opleiding en in 2008 voltooide ze daar de master Child and Family Studies. Zowel tijdens haar Master als een jaar na haar afstuderen was Marieke werkzaam als onderzoeks-en onderwijsassistent bij de afdeling Algemene en Gezinspedagogiek aan de Universiteit Leiden. Ze verzorgde daar onderwijs, observatietrainingen en volgde de training voor het uitvoeren van de Video-Feedback Intervention to Promote Positive Parenting and Sensitive Discipline (VIPP-SD). In 2009 besloot zij een andere kant van zichzelf te ontwikkelen en startte ze haar eigen onderneming in Amsterdam waarna zij tot en met 2013 een woonwinkel en interieuradviesbureau bestierde. In 2011 trad ze daarnaast opnieuw in dienst van de Universiteit van Leiden om twee dagen in de week aan de slag te gaan als docent bij de afdeling Algemene en Gezinspedagogiek. In 2013 startte ze daar, naast haar docentschap, ook als promovenda. Haar promotieonderzoek ging over negatieve attributies van ouders als voorspeller van kindermishandeling. De resultaten hiervan staan beschreven in dit proefschrift. In 2016 besloot zij de overstap te maken naar het HBO en ging bij de iPabo in Amsterdam aan de slag als docent/onderzoeker. Daarnaast schreef zij mee aan een vernieuwde uitgave van het lesboek Ontwikkelingspsychologie (Noordhoff Uitgevers) in de periode 2017-2018. Ze vervolgt haar carrière in het studiejaar 2018-2019 als docent bij de Haagse Hogeschool bij de opleiding Pedagogiek.

Publicaties en presentaties (List of publications and presentations)

Beckerman, M., Van Berkel, S. R., Mesman, J., & Alink, L.R.A. (2018). Negative parental attributions mediate associations between risk factorsand dysfunctional parenting: A replication and extension. Child Abuse & Neglect, 81, 249-258. doi: 10.1016/j.chiabu.2018.05.001

Beckerman, M., Van Berkel, S. R., Mesman, J., & Alink, L.R.A. (2017). The role of negative parental attributions in the associations between daily stressors, maltreatment history, and harsh and abusive discipline. Child Abuse & Neglect, 64, 109-116. doi:10.1016/j.chiabu.2016.12.015

Beckerman, M., Berkel, S.R., Alink, L.R.A., & Mesman, J. (2015, August). Predicting maternal sensitivity in challenging disciplinary Situations of young children. Paper presented at the International Attachment Conference New York City.

Beckerman, M., Alink, L.R.A., & Mesman, J. (2014, November). Naughty orClumsy? Negative Parental Attributions in the Context of Child Abuse Risk. Paper presented at the Institute for the Study of Education and Human Development (ISED) Researchdays.

Beckerman, M., Alink, L.R.A., & Mesman, J. (2014, May). Naughty or clumsy? Negative parental attributions in the context of child abuse risk. Paper presented at the European Conference on Child Abuse and Neglect.

Ingediende manuscripten (manuscripts submitted for publication):

Beckerman, M., Van Berkel, S. R., Mesman, J., Huffmeijer, R., & Alink, L.R.A. (2018). Are negative parental attributions predicted by situational stress? From a theoretical assumption towards an experimental answer. *Manuscript submitted for publication.*