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A THESIS FOR THE DEGREE OF MASTER OF ARTS

**The Interactive Effects
of Mothers' Reactions
and Children's Temperament
on 3- to 6-Year-Olds' Aggression**

어머니의 반응성과 유아의 기질이 유아의
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**The Interactive Effects of
Mothers' Reactions
and Children's Temperament
on 3- to 6-Year-Olds' Aggression**

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ABSTRACT

This study investigated the additive and interactive effects of children's temperament and mothers' reactions to hypothetical vignettes of children's aggression (referred as mothers' reactions in the study) on 3-to 6-years-old children's overt aggression (OA) and relational aggression (RA). To measure mothers' reactions, Mothers' Reactions to Hypothetical Vignettes of Children's Aggression (MRCA) Scale was developed. Followings were the research questions for this study.

1. Are there significant differences in children's aggression (overt and relational) depending on their gender?
2. To what extent do mothers' reactions (restrictive and responsive reactions), children's temperament (surgency, negative affectivity, and effortful control), and their interactive effects predict children's overt aggression?
 - 2.1. Do mothers' reactions (restrictive and responsive reactions) significantly predict children's overt aggression?
 - 2.2. Do children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's overt aggression?
 - 2.3. Do the interactive effects of mothers' reactions (restrictive and responsive reactions) and children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's overt aggression?
3. To what extent do mothers' reactions (restrictive and responsive reactions), children's temperament (surgency, negative affectivity, and effortful control), and their interactive effects predict children's relational aggression?
 - 3.1. Do mothers' reactions (restrictive and responsive reactions) significantly predict children's relational aggression?

- 3.2. Do children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's relational aggression?
- 3.3. Do interactive effects of mothers' reactions (restrictive and responsive reactions) and children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's relational aggression?

Three hundred seventeen mothers of 3- to 6-year-old children and 28 teachers were recruited from eight day-care centers and kindergartens in Busan, Seoul, Kyungi province. Each mother assessed her child's temperament and responded to MRCA Scale. Teachers reported on children's OA and RA. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted using AMOS to develop MRCA scale. The collected data were analyzed using SPSS for t-test, correlations, and hierarchical multiple analysis. The main results of the present study were as follows:

1. There was statistically significant gender differences in children's OA. Boys, compared to girls, were more overtly aggressive. There were no significant gender differences in RA.
2. Children's OA was significantly predicted by children's surgency and three interaction terms (Restrictive x Surgency, Responsive x Surgency and Restrictive x Effortful Control). Children's negative affectivity, effortful control and mothers' reactions did not have significant main effect on children's OA. First, Children with high scores on surgency exhibited higher levels of OA. Second, the significant interactions indicate that children with high scores on surgency who were exposed to restrictive reactions exhibited higher levels of OA. For children with low scores on surgency, mothers' restrictive reaction was negatively associated with children's OA. The association between mothers' restrictive reaction and children's OA was stronger for children with high scores on surgency. Children characterized by low scores on surgency who were exposed to responsive reactions

showed lower levels of OA. For children with high scores on surgency, mothers' restrictive reaction was positively related to children's OA. The association between mothers' responsive reaction and children's OA was stronger for children with low scores on surgency. Children with low scores on effortful control who were exposed to restrictive reaction elevated levels of OA. For children with high scores on effortful control, mothers' restrictive reaction was negatively related to children's OA. The relative contributions were in order of surgency, interactive effects of mothers' restrictive reaction and surgency, mothers' responsive reaction and surgency and mothers' restrictive reaction and effortful control.

3. Children's RA was significantly predicted only by children's surgency. Children with high scores on surgency exhibited higher levels of RA. Neither the main effects of children's negative affectivity, effortful control and mothers' reactions nor the interactive effects significantly predicted children's RA.

In summary, children's surgency was the only predictor with main effects on both forms of aggression. Three interactive effects of mothers' reactions and children's temperament significantly predicted children's OA. Findings of the present study demonstrated that relative contributions of predictors differ according to the form of children's aggression. In addition, it also demonstrated that integrating children's personality characteristics with mothers' reaction toward children's OA can improve the understanding of childhood OA. The findings of this study can be applied to building early prevention and future intervention programs for young children.

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I. INTRODUCTION

As children grow older and spend their daily lives outside of their homes, they gain many opportunities to enhance their social skill through peer interactions. Children learn about self, others and society and improve their emotional and cognitive skills while they interact with their peers. Despite its importance, peer interaction is not always pleasurable for children. For some, the experience can be very positive, but for others, the opposite may be true.

Childhood aggression is known to be significantly associated with peer rejection that causes maladaptive outcomes (Crick, Casas & Mosher, 1997; Crick, Ostrov, & Werner, 2006). It not only predicts later chronic antisocial behavior (Coie, Lochman, Terry, & Hyman; 1992; Kupersmidt & Coie, 1990; Lochman & Wayland, 1994), but also causes childhood aggression that is also strongly associated with other forms of concurrent and future problematic behaviors. Such behaviors include externalizing and internalizing adjustment problems, poor academic achievement, delinquency, risky sexual behaviors, depression and peer victimizations (Coie & Dodge, 1998; Crick & Grotpeter, 1995). Therefore, it is important to identify potential risks for children's aggression and to determine predictive variables of childhood aggression.

Aggression is a behavior considered as an outside of societal norms that is intended to harm another person and is seen as harmful by the victim (Coie & Dodge, 1998; Parke & Slaby, 1983). Depending on the targeted age and purpose of the study, sub-categorizations of aggression differ. Crick et al. (1997) introduced overt aggression (OA) and relational aggression (RA). OA is a type of aggression that harms or threatens to damage another physically or psychologically through behaviors such as pushing, hitting or intimidating (Crick et al., 1997). Researchers who initiated the studies on childhood aggression focused heavily on OA, a form of aggression that is more characteristic of boys than girls (Berkowitz, 1993; Block, 1983; Parker & Slaby, 1983). RA, another form of aggression known to be more apparent among girls than boys, was introduced in more recent studies (Crick et al., 1997). Children who perpetrate RA harm others through damage or control of friendships or other relationships through behaviors such as excluding

peers from social groups, spreading rumors, and gossiping (Crick & Grotpeter, 1995).

Previously identified predictors of children's aggression include environmental and contextual factors such as parenting behavior and discipline style (e.g., Gershoff, 2002; Ladd & Pettit, 2002; Mize & Pettit, 1997). According to Ladd and Pettit (2002), associations between parental influences and children's aggression can be examined based on two different forms of parental influences: indirect and direct influence. Mothers indirectly influence children when children transfer the behaviors and relationship patterns learned in the family to the peer context. Children can be directly influenced by mothers when mothers are actively engaged in specific situations (as designer, mediator, supervisor or consultant) in order to meet specific socialization goals (Ladd & Pettit, 2002).

Evidence regarding the relationship between parental indirect influences (e.g., parenting behaviors and discipline styles) and children's aggression are well documented. For instance, presence of negative parenting (e.g., hostile, harsh, and inconsistent) and absence of positive parenting (i.e., warmth) were associated with children's adjustment problems (e.g., aggression and anxiety) (Patterson, Reid, & Dishion, 1992; Rothbaum & Weisz, 1994). Moreover, physical punishment increased children's OA, and psychological control increased children's RA (Kuppens, Grietens, Onghena, & Michiels, 2009). In addition, children who display high levels of aggression were associated with low levels of mothers' active involvement in parenting behavior and high levels of mothers' permissiveness (Youn, Kang, & Lee, 2005). Overall, negative parenting styles were positively associated with children's aggression, while positive parenting styles were negatively associated with children's aggression.

Relatively few studies have been conducted regarding mothers' direct influences on children's aggression. Up to date, studies examined the ways in which mothers react¹ to children's aggression (Harnish, 2011; Hasting & Rubin, 1999; Jung, 20003; Werner et al., 2006). In their studies, mothers were asked to read hypothetical vignettes that

¹ Mothers' Reaction: Terms such as intervention strategies (Harnish, 2011), responses (Kim et al., 2009), socialization strategies (Hasting & Rubin, 1999; Jung, 2003) and reactive socialization behavior (Mills & Rubin, 1990) were used in previous studies to indicate mothers' reaction to hypothetical vignettes of children's aggression.

depict children's aggression and to write down what will they do if they witnessed children's problem behavior (presented in hypothetical vignettes). The findings showed that mothers' reaction differed according to the forms of misbehavior. More specifically, certain types of mothers' reactions were significantly correlated to certain form of aggression (Kim, Chung, Kwon, & Min, 2009; Werner, Senich, & Przepyszny, 2006). For instance, mothers were more likely to use high power assertion (e.g., punishment) than low power assertion (e.g., discussion) for children's OA depicting vignettes (Werner et al., 2006). Moreover, the associations between mothers' reactions and forms of aggression also differed according to children's gender (Kim et al., 2009; Werner et al., 2006). For instance, for children's OA, girls' mothers were more likely to use power assertion than boys' mothers (Werner et al., 2006).

However, studies have not yet empirically determined the relations between mothers' reactions and children's aggression. No studies examined whether or not mothers' reactions are significant predictors of children's aggression. Series of studies have proved that mothers' reactions differ according to the aggression form and children's gender. Therefore, investigating the extent to which mothers' reactions predict children's aggression can bring deeper understanding of children's aggression.

Moreover, an extensive number of studies have appointed children's temperament as another significant predictor of children's concurrent and prospective aggression (Sanson, Smart, Prior, & Oberklaid, 1993). Prior studies addressed the importance of viewing children as playing a crucial role in their socialization. Children are not passive recipients of those environmental and contextual factors (Sanson, Hemphill, & Smart, 2004). Temperament is defined as a biologically based individual's differences in reactivity and self-regulation, as seen in the emotional, motor and attentional domains that is influenced over time by genes, environment and experience (Rothbart & Bates, 1998; Rothbart, Ellis, & Posner, 2004). Due to a diverse spectrum of temperament forms, its association with development of aggression was examined by focusing on a few of specific temperamental characteristics or constructed version (difficult temperament) (Kim & Kim, 2007; Russell, Hart, Robinson, & Olson, 2003; Woo, 2007). For instance, children who are engaged in

aggressive behaviors were more likely to be active, less fearful and less self-regulated than those who were less likely to be engaged in aggressive behaviors (Eisenberg, Cumberland, Spinrad, Fabes, Sheppard, Reiser, Murphy, Losoya, & Uban, 2001; Hill, Degnan, Calkins, & Keane, 2006; Russell et al., 2003).

Despite evidence of significant relationships between children's temperament and children's aggression, many studies have not examined the effects of children's temperament on children's RA. However, it is expected that temperament can be another predictor of children's RA. In fact, several temperament types have been identified to be associated with children's internalizing problems (Putnam, Sanson, & Rothbart, 2002), which is associated with children's RA. Therefore, by investigating the main effects of children's temperament on RA, this study will identify children's characteristics that predict children's concurrent RA.

In addition, continuing from early research on temperament that focused on direct links of child temperament and outcomes, recent studies examined the interactions between children's individual characteristics and environmental characteristics (Sanson et al., 2004). Prior studies examined whether or not specific forms of temperament strengthen, weaken or alter the effects of parenting behaviors on children's aggression. For example, Colder, Lochman and Wells (1997) examined the moderating role of children's temperament. They found that active boys who were exposed to harsh discipline exhibited higher levels of aggression than those who were less active and fearful (Colder et al., 1997). Other studies examined moderating role of parenting behaviors. For instance, parents' use of negative commands, scolding and toy restriction moderated the relationship between children's resistance to control and externalizing behaviors (Gilliom and Shaw).

Evidence of interactive effects of children's temperament and parenting behaviors predicting children's aggression illustrates the possibilities of interactive effects of children's temperament and mothers' reactions predicting children's aggression. Certain types of mothers' reactions toward children's aggression may interact with certain types of children's temperament in predicting children's OA and RA. With such assumption, present study will examine the interactive effects of mothers' reactions and children's temperament on children OA and RA.

Overall, findings of the study will determine the relationship between mothers' reactions, children's temperament, and children's OA and RA. Firstly, differences in children's aggression by their gender will be examined. Then, additive and interactive effects of mothers' reactions and children's temperament on children's OA and RA will be investigated.

The findings of this research should bring practical implications for understanding and developing intervention programs for children with aggressive behaviors. The evidence of the present study can be applied as a reference for professionals and parents who are unsure of how to react when they actually encounter children's aggressions. Moreover, investigating the relative contributions of mothers' reactions, children's temperament and their interaction effects on children's OA and RA will assist professionals and parents' understanding of childhood aggression.

II. REVIEW OF LITERATURE

This chapter provides a review of the theoretical framework relevant to this study. The review is divided into four sections: childhood aggression, mothers' influence and aggression, children's temperament and aggression, and interactive effects of mothers' influence and children's temperament on children's overt aggression (OA) and relational aggression (RA). In Section 1, construct and subtypes of aggression will be discussed. Section 2 will discuss mothers' influence on aggression based on social learning theory. Section 3 addresses the relationship between children's temperament and children's aggression. In Section 4, previous studies on the interactive effects of children's temperament and mothers' influence on children's aggression will be reviewed.

1. Childhood Aggression

Childhood aggression is a well-known predictor of children's social-psychological maladjustment (Crick and Grotpeter, 1995). Concurrent and future developmental problems such as peer rejection, externalizing adjustment (delinquency & risky sexual behavior) and internalizing adjustment problems (depression) (Coie & Dodge, 1998; Crick, 1996; Crick, & Grotpeter 1995) have been associated with aggression in early stages.

The definitions of aggression used in previous studies vary. While Buss (1963) characterized aggression as the delivery of painful or noxious stimuli to another organism, Feshbach (1970) viewed it as a social response behavior that has defining characteristics of inflicting injury upon persons or objects. According to Loeber and Hay (1997), aggression is a category of behavior that causes or threatens physical harm to others that is objectively verifiable. The definitions suggested by researchers before the 1990s heavily focused on observable aggression. A Few years later, Hart, Nelson, Robinson, Olsen and McNeilly-Choque (1998) modified the definition by including the concept of intension. They defined it as a behavior enacted with the

intent to hurt or harm others. Currently, the definition proposed by Hart et al. (1998) is preferred by many researchers.

In addition, aggression is not a unitary term, and thus, consists of different manifestations. Rule and Nesdale (1974) divided aggression into two forms based on the perpetrator's objective of aggressive action: social-instrumental aggression and person-instrumental aggression. Frodi, Macaulay, and Thome (1977) saw aggression consisting of four different characteristics: physical, verbal, direct and indirect aggression. Dodge and Coie (1987) examined aggression in the form of reactive and proactive. Reactive aggression is a retaliatory or defensive type of aggression, while proactive aggression is an aggression that occurs without provocation or anger. Crick et al. (1997) introduced another form of aggression called relational aggression (RA). It is a form of aggression that harms others through damage or control of friendships or other relationships (Crick & Grotpeter, 1995). It includes manipulative behaviors such as excluding peers from social groups, spreading rumors, and gossiping. Introduction of RA was an eye opener, because the majority of subsets examined in previous studies were related to OA, a form of aggression that are known to be more associated with boys than girls.

Sub-categorization of aggression is significantly related to children's age. Most studies on childhood aggression did not divide the aggression into subsets or focused their studies on OA, which is a more visually appearing form of aggression (Dodge & Coie, 1987; Nagin & Tremblay, 2003). Young children have been underestimated in terms of portraying aggressive acts such as RA because many saw RA as a form of aggression that require more sophisticated cognitive abilities. In other words, children young as three years old were seen as developmentally not ready to be engaged in RA.

However, recent studies have approved this notion to be misleading. Even though used in a less sophisticated manner, children were also engaged in RA. Children as young as two and a half-year-olds have been found to display RA while those 3- to 5-year-olds recognized RA in one another (Casas, Weigel, Crick, Ostrov, Woods, Yeh, & Huddleston-Casas, 2006; Crick & Grotpeter, 1995; Goldstein, Tisak, & Boxer, 2002). Another study showed that children's reason for using aggression significantly differed by age. During early stages, children used aggression to receive attention or relief their discomfort

(Fabes & Eisenberg, 1992). However, when they were between four and five years old, their use of aggression were highly associated with peer conflict or desire of possession (Fabes & Eisenberg, 1992). Therefore, it is important to examine and to identify the predictors of 3- to 6 year-olds' aggression in the context of peer interactions. As discussed earlier, there are many forms of aggression. However, the present study will focus on children's OA and RA.

Gender has been noted as a critical variable that is highly associated with children's aggression. At first, boys were seen as more strongly associated with aggression than girls (Nagin & Tremblay, 2003). Prior studies explained that such association is due to the differences in hormones and experiences of dissimilar socialization styles. However, studies that are more current demonstrated that boys are not always more associated with aggression. A series of studies have demonstrated that OA is more related to boys than girls and RA is more related to girls than boys (Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003; Crick et al., 1997; McEvoy, Estrem, Rodriguez, & Olson, 2003; Ostrov & Keating, 2004; Rys & Bear, 1997). According to Crick et al. (1997), such findings are due the fact that boys often pursue competitive and instrumental goals while girls' aim to establish close relationship with others (Crick & Grotpeter, 1995).

Other studies have demonstrated contrary findings. According to the literature review of Tremblay (2000), boys were much more aggressive than girls right after preschool years. However, indirect aggression was more apparent in 11- to 12-year-old girls than boys, suggesting that association between gender and aggression may differ by children's age. Hart et al., (1998) did not find any gender differences in preschool children's OA and RA. In addition, Kim and Park (2006) found boys to be more engaged in both types of aggression than girls. Lastly, Sim (2003) found boys to be more overtly aggressive while no significant difference was apparent for children's RA.

Contradictory findings have been reported regarding the differences in children's aggression according to gender. It is still not very clear whether gender significantly predicts children's aggression. Therefore, present study will examine if children's concurrent OA and RA differ according to gender.

2. Mothers' Influence on Children's Aggression

Role of parenting on childhood outcomes have been emphasized. Mothers' direct and indirect influence on children's aggression can be explained by two concepts of social learning theory: Observational learning and parental direct and indirect influence.

Observational learning

Observational learning emphasizes the powerful role of parents on the development of children's aggression. It helps us to understand the ways in which parents may influence their children even without their intention to do so.

Social learning theory asserts that parents serve as active socialization agents for children, and function as models of acceptable or unacceptable social norms and behavior (Maccoby, 1992). Children have the abilities to listen, remember, and abstract general rules from a complex set of observed behaviors that affect imitation and learning. Through observational learning, children construct mental reconstructions of the actions of their model and develop similar social skills by mimicking their model's behavior. According to Seong (2005), children who observed violence in marital conflict situations were more likely to attribute using violent behavior as acceptable way to solve conflict situations. Moreover, boys' externalizing problems were highly associated with fathers' aggression and anti-social behavior (Arnold, O'Leary, Wolff, & Acker, 1993; Gelfand & Tetis, 1990). Children learned aggression by observing and interacting with others.

Mothers' direct and indirect influence

Ladd and Pettit (2002) conceptualized two different types of family processes, *direct and indirect*, that may have important implications for children's development. Mothers *directly influence* children by taking various roles such as designer, mediator, supervisor, and consultant to enhance and encourage positive peer interaction (Ladd & Pettit, 2002). Direct form of parenting influence is undertaken specifically to achieve particular socialization goals, such as promotion

of academic athletic or social competence (Mize and Pettit, 1997). Therefore, it involves domain-specific activities that are presumed to have primarily domain-specific effects (Darling & Steinberg, 1993). In contrast, mothers *indirectly influence* children by patterns of behaviors such as parenting style, attachment security, and parental discipline that describe parent-child interactions over a wide range of situations (Darling & Steinberg, 1993). When mothers indirectly influence their children, children transfer the behavioral and relationship patterns they have learned in the family context to peer domains (Ladd & Pettit, 2002).

Previous studies related to mothers' influences on childhood outcomes have tried to clarify the contributing roles of mothers' intentional socialization efforts, also referred as parenting practices (direct influence), and their parenting style (indirect influence) (Mize & Pettit, 1997). Although not mutually exclusive, empirical efforts to disentangle the effects of direct and indirect influence of mothers' parenting on children's development have led to four different types of models that articulate sets of pathways of mothers' direct and indirect influence to developmental outcomes.

The first model argues the moderating roles of parenting style (indirect) on the relationship between mothers' practice (direct) and children's outcome (Darling & Steinberg, 1993). According to this model, direct effects of mothers' practice on children's competence can alternate according to parenting style. A second model introduces the mediating role of parenting practice (direct) between parenting style (indirect) and the outcome. For instance, the effect of positive parenting style on adolescents' school achievement would be mediated by concrete behaviors such as mothers' involvement and encouragement (Steinberg, Lamborn, Dornbusch, & Darling, 1992). Moreover, for some, both direct and indirect form of parenting influences were redundant indicators of parenting effectiveness. That is, both specific socialization efforts and parenting styles were regarded as markers of competent parenting and that the presence of either of the parental influence would result in same outcome (Parke, Cassidy, Burks, Carson, & Boyum, 1992; Pettit & Mize, 1993). Those who support the fourth model believed that both direct and indirect form of parenting influences make unique, additive contributions to children's competence (Pettit & Mize, 1993). That is, both parenting style and

practices should significantly predict children's competence. All four models demonstrated that mothers could influence children's development in different ways. Thus, it is also important to consider both types of mothers' influence when explaining about children's aggression.

Literature linking variations in mother-child interaction styles (parenting style) to children's aggression have been documented. Effects of negative parenting behaviors such as harsh/punitive discipline, parental rejection and low parental warmth on childhood disruptive behavior have been examined. For example, the use of corporal punishments increased childhood aggressive behavior (Gershoff, 2002). Moreover, ineffective discipline (inconsistency and parental negative affect) during childhood also predicted an increase in aggressive behaviors over time (Snyder, Cramer, Af Frank, & Patterson, 2005).

Moreover, other dimensions of parenting behaviors such as parents' general interaction styles and their psychological and behavioral control on children predicted negative childhood outcomes. Specifically, children's internalizing and externalizing behaviors were associated with high levels of behavioral control² and psychological control³ (Caron, Weiss, Harris, & Catron, 2006). Moreover, children's use of OA and RA was related to mothers' negative interaction styles and general discipline strategies (Campbell & Frabutt, 1999). Mothers' coercion and control were associated with children's RA (Hart et al., 1998).

On the other hand, a limited number of studies were conducted regarding mothers' direct influence on children's aggression (Colwell, Mize, Pettit, & Laird, 2002; Kim et al., 2009; Werner et al., 2006). These studies have investigated mothers' reactions that differed according to aggression forms and gender. For instance, mothers were more likely to use power assertion (Colwell et al., 2002; Werner et al., 2006), rule violation strategies (Werner et al., 2006) and discussion (Colwell et al., 2002) for hypothetical vignettes of children's OA than for hypothetical vignettes of children's RA. However, mothers used encouragement strategies more frequently for children's RA than OA

² Behavioral control: limiting setting, providing alternative, and monitoring

³ Psychological control: use of guilt induction and manipulation

(Colwell et al., 2002). In other words, when children were engaged in OA, mothers were more likely to inhibit children's aggression by using their power. They were more likely to tell their children that they disobeyed the rules and that their behavior was unacceptable. When children were engaged in RA, mothers were more likely to encourage their children to get along with their peers more than when children were engaged in OA.

Other studies have indicated differences in mothers' reactions according to children's gender. In case of hypothetical vignettes that depict children's OA, mothers of boys used more power assertion than mothers of girls. Mothers of girls used more rule violation than mothers of boys (Werner et al., 2006). For hypothetical vignettes of children's RA, mothers of girls used more encouragement and power assertion than mothers of boys (Kim et al., 2009). Thus, mothers reacted and used different socialization strategies for children's aggression depending on the forms of aggression and children's gender. Such observable differences suggest that there is great need for more studies conducted in this area.

However, findings of previous research studies do not determine whether mothers' reactions significantly predict children's aggression or not. No adequate scales to quantitatively measure and compare mothers' reactions toward children's aggressive behavior have been developed. Thus, for this study, a new scale was developed to measure mothers' reactions. The present study will examine whether or not mothers' reactions significantly predict both OA and RA. Investigating the effects of mothers' reactions on children's aggression would provide valuable information for teachers and parents. Findings of the present study may propose other effective ways of responding to children's aggression. Moreover, the present study will also provide answer to the question of whether or not mothers' reactions significantly predict children's concurrent OA and RA.

3. Children's Temperament and Aggression

Temperament is defined by Rothbart and colleagues as constitutionally based individual differences in reactivity and self-regulation, observed in the domains of emotionality, motor activity, and attention (Rothbart & Derryberry, 1981). According to this definition, temperament covers the enduring biological make up of individuals that are influenced over time by heredity, maturation, and experience (Rothbart & Derryberry, 1981). It accounts individual's arousability of motor, affective, and sensory response system, which can be explained by children's reactivity, latency of responding, reaction intensity, and time for rise and recovery (Zentner & Bates, 2008). Moreover, it includes processes, such as attentional focusing and inhibitory control that serve to modulate individual's reactivity (Rothbart & Derryberry, 1981).

The concurrent and prospective link between children's aggression and specific temperamental qualities has been documented (Sanson et al., 1993). The present study followed the definition proposed by Rothbart and colleagues because it incorporates both reactive and self-regulative models of temperament, both of which are hypothesized to play a significant role in the development of child behavior problems (Rothbart & Derryberry, 1981). The reactive (affective) nature of temperament includes individual's characteristics that are responsive to changes in stimulation. It is linked to primary emotions such as joy, anger and sadness (Rothbart, Ahadi, Hershey & Fisher, 2001), while the self-regulative (nonaffective) model emphasizes the process such as avoidance, inhibition, and attentional self-regulation, that modulate the function of this reactivity (Rothbart et al., 2001). Rothbart et al. (2001) examined temperament in three broad dimensions: Surgency-Extraversion, Negative affectivity and Effortful Control .

Surgency-extraversion⁴ is characterized by high positive loadings on the impulsivity, high intensity pleasure, and activity level scales and strong negative loadings of the shyness scale. The role of surgency in childhood outcome varies, depending on which midlevel

⁴ Referred as surgency in the present study

trait is examined. That is, while low levels of surgency predicted children's depression, high levels of surgency predicted children's externalizing and some of internalizing problems (Karp, Serbin, Stack, & Schwartzman, 2004; Ormel, Oldehinkel, Ferdinand, Hartman, de Winter & Veenstra, 2005; Rothbart & Putnam, 2002). Other studies have reported similar findings in the association between high levels of surgency and aggression. Aggressive children were associated with high activity levels, low responses (Kim & Kim, 2007; Russell et al., 2003; Woo, 2007), low adaptability, high intensity, high persistence, and high distractibility (Thomas, Chess, & Birch, 1963). When surgency was examined as a whole, children with high levels of surgency were associated with aggressive behaviors (Rothbart, Ahadi, & Hershey, 1994; Rothbart & Putnam, 2002).

A negative affectivity is conceptually similar to neuroticism and is defined by high positive loadings for sadness, fear, anger/frustration, and discomfort and negative loadings for falling reactivity/soothability. Up to date, negative affectivity has been most commonly research factors as it consists of the diverse midlevel traits of children's general propensity to experience negative emotions (Rothbart et al., 2001). Previous studies have linked negative affectivity with both forms of behavioral problems identifying it as a causal link between comorbidity of externalizing and internalizing disorders (Krueger, Caspi, Moffitt, & Silva, 1998). The longitudinal study conducted by Gilliom and Shaw (2004) on children between the ages of two- and six-years found that negative emotionality predicted the early onset of externalizing behaviors of boys. Moreover, Karreman, Haas, Tuij, Aken, and Dekvic (2010) also found that children's anger, fear, sadness and impulsivity predicted children's externalizing problem. Other studies have examined the contribution of negative affectivity's second-order factors, irritability/fear and anger/frustration, to childhood psychopathology (Lengua, 2006; Rothbart & Bates, 1998). While irritability/fear predicted internalizing disorders, anger/frustration, anger/frustration predicted externalizing disorders (Eisenberg et al., 2001; Lengua, 2006). In addition, high levels of fear predicted internalizing disorders and low levels of aggression (Rothbart, 2004; Rothbart & Bates, 2006; Oldehinkel, Hartman, DeWinter, Beenstra, & Ormel, 2004).

Lastly, effortful control is children's ability to self-regulate behavior and attention. It contains high positive loadings for Inhibitory control, attentional control, low intensity pleasure, and perceptual Sensitivity scales (Putnam & Rothbart, 2006). Effortful control is commonly identified as children's ability to engage in subdominant response by inhibiting the dominant response to the situation. Low levels of effortful control have been linked to the externalizing disorders (Eisenberg et al., 2001; Hill et al., 2006; Oldehinkel et al., 2004). While children's low effortful control predicted higher risk for developing attention problems, aggressive behaviors, and destructive behaviors (e.g., Kochanska & Knaack, 2004; Olson, Sameroff, Kerr, Lopez, & Wellman, 2005), high levels of effortful control acted as a protective factor against aggressive behaviors (Eisenberg, Fabes, Nyman, Bernzweig, Pinuelas, & 1994; Lengua, 2006).

Studies that examined the relations between children's temperament and aggression have shown that some temperamental characteristics are more related to children's maladjustment behavior than other types of temperament. However, a majority of these studies were on children's OA. As temperament is identified as one of the important predictors of problem behavior in young children, it may also predict children's RA (Putnam et al., 2002). In efforts to prevent both OA and RA among children, present study will also investigate the effects of temperament on children's RA.

4. Interactive Effect of Maternal Influence and Temperament on Children's Aggression

Contemporary theories of socialization generally consider children's temperament and their experiences with parents as major factors that influence children's social and behavioral adjustment (Bates & Pettit, 2007). Rather than interpreting the independent effects of temperament or contextual factors (mothers' influence), current studies examine joint effects of these factors on early childhood behavior problems (Colder et al., 1997). For example, previous studies have found that the combination of "certain types" of parenting and biologically determined temperamental dispositions predicted

childhood internalizing and/or externalizing disorders (Bates, Pettit, Dodge, & Ridge, 1998).

Previous studies that examined the relationship between children's temperament, parenting style and children's aggression cover both moderating roles of temperament *or* parenting behaviors. One side of research asserts that specific forms of temperament strengthened or weakened parental influence on children's aggression (i.e., moderating role of temperament). While another side insists that depending on the types of parenting behavior, the relationship between children's temperament and children's aggression can be altered, strengthened or weakened (i.e., moderating role of parenting style). Two sides seem to assert different ideas about the relationship between three major variables, but analytically, they mean the similar thing as both interaction effects were computed by including interaction terms (multiplicative term) in the simple regression equation.

Moderating Role of Temperament

According to previous studies, children's impulsivity, activity level, positive emotionality (i.e., Surgency in Rothbart's scale), fearfulness, negative emotionality (i.e., negative affectivity in Rothbart's scale), irritability, self-regulation level, and effortful control (i.e., effortful control under Rothbart's scale) moderated the relationship between parenting styles and children's aggression. For children high in impulsivity, inconsistent parenting and the use of corporal punishment predicted externalizing problems and conduct problems, respectively (Aucoin, Frick, & Boldin, 2006; Lengua, Wolchick, Sandler, & West, 2000). Colder et al. (1997) demonstrated that active boys who were exposed to harsh discipline exhibited high levels of aggression than those who are less active and fearful. Moreover, for children low in positive emotionality, parental rejection predicted externalizing problems (Lengua, Wolchik, Sandler, & West, 2000). For fearful boys, harsh discipline predicted high levels of aggression (Colder et al., 1997). Lastly, maternal hostility and externalizing problems were associated with children with poor effortful control and high irritable distress (Morris, Steinberg, Sessa, Avenevoli, & Essex, 2004). Moreover, high levels of maternal negativity such as hostility, rejection and intrusion and dysregulated

temperament at age two significantly predicted externalizing behavior during preschool years (Rubin, Burgess, Dwyer, & Hastings, 2003).

Moderating Role of Parenting Style

Mothers' dysfunctional and lacking control parenting behaviors, negative maternal behavior control strategies, and use of restrictive control moderated the relationship between children's temperament and their aggression. For instance, dysfunctional and lacking control parenting behaviors moderated the association between children with "difficult" temperament (i.e., highly reactive children) at age 7 and risk of psychiatric disorders (e.g., oppositional defiant disorder, attention deficit hyperactivity disorders) at ages 12 and 16 (Maziade, Caron, Cote, Merette, Bernier, Laplante, Boutin, & Thiverge, 1990). In addition, the relationship between children's resistance to control (i.e., combination of surgency and negative affectivity) and externalizing disorders was moderated by parent's restrictive control (i.e., use of negative commands, scolding, and toy restriction) (Gilliom & Shaw, 2004). Similar to findings, children highly resistant to demands and negative emotionality were associated with externalizing behavior when mothers used harsher punishment (Patterson & Sanson, 1999).

Several studies that examined interactive effects of temperament and parenting behaviors on the children's aggression suggest different outcomes for children with different characteristics experiencing identical situations (Bates & Pettit, 2007). In general, the effects of negative parenting styles increased among children with temperament vulnerabilities while the effects of the difficult temperament heightened under negative parenting style. With such evidence, it is possible to assume that interaction effects of children's temperament and mothers' reactions predict children's OA and RA. By identifying interactive effects of children's temperament and mothers' reactions on children's aggression, effective interventions and prevention programs that consider both the individual and environmental factors of children may be developed. Most importantly, findings of the present study will determine necessities for further examinations of associations between children's temperament, mothers' reactions and children's aggression.

Overall, present study will first examine the differences in aggression according to children's gender. Then, two similar analyses will be conducted for OA and RA. For both types of children's aggression, the additive effect of mothers' reactions and children's temperament will be examined first. It is hypothesized that mothers' reaction and children's temperament will have main effects on children's aggression. Then, interactive effects of children's temperament and mothers' reactions on children's aggression will be investigated. Since there were no previous studies that examined the effects of mothers' reactions on children's aggression, it is still early to test for moderating effects of either of these variables. Therefore, the major purpose of the current study would be to first identify the interactive effects of predictors on children's aggression. Then, further examinations of interactive effects will take place based on the previous literatures that focused on the moderating role of children's temperament. It is assumed that certain types of mothers' reactions will interact with dimensions of children's temperament to predict children's OA and RA.

III. RESEARCH QUESTIONS AND DEFINITION OF KEY TERMS

1. Research Questions

The present study focused on the relationship between young children's temperament, mothers' reaction to hypothetical vignettes of children's aggression, and children's OA and RA. This paper examines the following questions.

1. Are there significant differences in children's aggression (overt and relational) depending on their gender?
2. To what extent do mothers' reactions (restrictive and responsive reactions), children's temperament (surgency, negative affectivity, and effortful control), and their interactive effects predict children's overt aggression?
 - 2.1. Do mothers' reactions (restrictive and responsive reactions) significantly predict children's overt aggression?
 - 2.2. Do children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's overt aggression?
 - 2.3. Do the interactive effects of mothers' reactions (restrictive and responsive reactions) and children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's overt aggression?
3. To what extent do mothers' reactions (restrictive and responsive reactions), children's temperament (surgency, negative affectivity, and effortful control), and their interactive effects predict children's relational aggression?

- 3.1. Do mothers' reactions (restrictive and responsive reactions) significantly predict children's relational aggression?
- 3.2. Do children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's relational aggression?
- 3.3. Do interactive effects of mothers' reactions (restrictive and responsive reactions) and children's temperament (surgency, negative affectivity, and effortful control) significantly predict children's relational aggression?

The first research question aims to clarify the controversial results of previous findings regarding the relationship between children's aggression and gender. The second and third questions aim to examine additive and interactive effects of mothers' reactions and children's temperament on children's OA and RA. In addition, by examining both OA and RA of young children, the study is able to determine whether relevant contributions of children's temperament, mothers' reactions and their interactive effects differ according to the forms of aggression.

2. Definition of Key Terms

The following operational definitions clarify the meaning of key terms used in this study.

1) Aggression

Aggression is a behavior enacted with the intent to hurt or harm others (Hart et al., 1998). Using Preschool Social Behavior Scale (PSBS-T; Crick et al., 1997), the present study examined two different forms of aggression, overt aggression and relational aggression, proposed by Crick et al. (1997).

Overt Aggression (OA) is a form of behavior that harms others through physical damage or the threat of such damage. It includes behaviors such as pushing, hitting, kicking or threatening to beat up a peer (Crick et al., 1997).

Relational Aggression (RA) is a form of behavior that harms others through damage to their peer relationships. It includes behaviors such as social exclusion, ignorance, teasing, or spreading rumors (Crick & Grotpeter, 1995; Crick et al., 1997)

2) Mothers' Reactions

Mothers' Reactions refers to mothers' verbal and behavioral reaction to hypothetical vignettes of children's aggression. It includes mothers' verbal and behavioral responses with use of psychological and physical punishments, penalty, and corporal punishment, deprivation of privileges, explaining, teaching, understanding and helping to solve problems. To measure mothers' reactions, the study developed Mothers' Reaction to Hypothetical Vignettes of Children's Aggression (MRCA) Scale. This scale measures two forms of mothers' reactions: restrictive and responsive reactions (for more detail information, refer to p.35). Restrictive reaction and responsive reaction are operationally defined as:

Restrictive reaction is an active form of mothers' verbal and behavioral responses to children's aggression with intentions to stop such behavior. It involves mothers' strong force, coercion and restrictions by criticizing, yelling, physically and psychologically punishing a child, demanding things of a child, and discouraging differing opinions.

Responsive reaction is an active form of mothers' verbal and behavioral responses to children's aggression with intentions to stop such behavior. It involves mothers involving in reasoning, modeling and offering gentle directions by responding to child's emotions, actively helping and teaching them in solving problems and making parental expectations explicit.

3) Temperament

Temperament is a biologically-based individual characteristic that is relatively stable over time, but also can be modified by environmental factors. Rothbart and Derryberry (1981) defined temperament as constitutionally based individual differences in reactivity and self-regulation as seen in the emotional, motor, and attentional domains, that is influenced over time by genes, environment, and experience (Rothbart, Derryberry, & Posner, 1994). This study will follow Rothbart's definition by defining temperament as relatively stable biologically based individual differences in reactivity and self-regulation with possibilities of being modified by environmental factors.

Present study measured children's temperament using the Children's Behavior Questionnaire (CBQ) very short form scale (Rothbart et al., 1994). CBQ very short form scale was designed to assess three broad dimensions of temperament, which have consistently emerged from scale-level factor analysis of the standard form of the CBQ. Three broad dimensions, surgency, negative affectivity and effortful control, were characterized by high loadings of 13 constructs (see Table 1).

Table 1*Construct and Definitions of Three Dimensions of Children's Temperament*

Dimension	Construct	Definition
Surgency/ Extraversion	Impulsivity	Speed of response initiation
	High Intensity Pleasure	Amount of pleasure or enjoyment related to situations involving high stimulus intensity, rate, complexity, novelty and incongruity
	Activity Level	Level of gross motor activity including rate and extent of locomotion
	Shyness	Slow or inhibited approach in situations involving novelty or uncertainty
Negative Affectivity	Sadness	Amount of negative affect and lowered mood and energy related to exposure to suffering, disappointment and object loss
	Fear	Amount of negative affect, including unease, worry or nervousness related to anticipated pain or distress and/or potentially threatening situations
	Anger/ Frustration	Amount of negative affect related to interruption of ongoing tasks or goal blocking
	Discomfort	Amount of negative affect related to sensory qualities of stimulation, including intensity, rate or complexity of light, movement, sound, texture
	Falling Reactivity/ Soothability	Rate of recovery from peak distress, excitement, or general arousal
Effortful Control	Inhibitory Control	The capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations
	Attentional Control	Tendency to maintain attentional focus upon task-related channels
	Low Intensity Pleasure	Amount of pleasure or enjoyment related to situations involving low stimulus intensity, rate, complexity, novelty and incongruity.
	Perceptual Sensitivity	Detection of slight, low-intensity stimuli from the external environment

IV. METHODS

1. Participants

Participants in this study were 317 mothers and 26 teachers of 3- to 6-year-old children from eight day-care centers and kindergartens located in Busan, Seoul, and Kyungi province of the Republic of Korea. Each mother assessed her child's temperament and responded to the MRCA Scale. Children's aggression was assessed by teachers. Thus, individual child received ratings from both the mother and teacher. 76.9% of teachers graduated three-year colleges and 80.7% had more than three years of teaching experiences.

The current study targeted 3- to 6-year-old children for the following reasons. First, researcher judged that predictors of aggression should be determined at earliest age when aggression starts to appear. Based on previous evidence of overt aggression (OA) and relational aggression (RA) among three-year-old children, investigating aggression from this age was judged critical. In addition, the study was conducted at the end of the school year to make sure that teachers are aware of their children in the class and peer relationships have already been formed within class. Moreover, this study focused on examining only mothers based on previous findings that mothers are the primary agents for socializing young children.

Table 2
Children's Gender and Age (n=317)

Categories		Age (Years)				Total
		3	4	5	6	
Gender	Boys	10 (6.4)	45 (28.8)	56 (35.9)	45 (28.8)	156 (49.2)
	Girls	13 (8.1)	52 (32.3)	57 (35.4)	39 (24.2)	161 (50.8)
Total		23 (7.3)	97 (30.6)	113 (35.6)	84 (26.5)	317 (100)

From 478 surveys initially distributed, those that were incomplete or not returned were excluded in the analysis. Thus, a total of 317 surveys were analyzed. Among the 317 mothers who participated in the study, 156 (49.2%) were mothers of boys and 161 (40.8%) were mothers of girls. At the time the survey was distributed,

81 children were in the 3-year-old class, 130 children were in the 4-year-old class and 106 were in the 5-year-old class. However, because the survey was distributed during the second semester of the school year, participants of the study also included six-year old children. Children's age was calculated based on the first day of survey distribution, which was September 18th, 2012 (see Table 2). For birth order, 37.2% and 39.7% of children were the first and second child respectively. Only 13% were the third child, and 60% were the only child (Table 3).

Table 3
Descriptive Statistics for Participants (n=317)

Variables	M(SD)	Range
Mother's Age	35.97 (3.41)	26~50 years old
Father's Age	38.35 (3.87)	29~53years old
Variables	Frequency (%)	
Birth Order	Only Child	60 (18.9%)
	First	118 (37.2%)
	Second	126 (39.7%)
	Third	13 (4.1%)
Mother's Education	High school Graduates	55 (17.4%)
	University Graduates	227 (71.6%)
	Graduate School Graduates	26 (8.2%)
	No Response	9 (2.8%)
Father's Education	High school Graduates	32 (10.1%)
	University Graduates	226 (71.3%)
	Graduate School Graduates	37 (11.7%)
	No Response	22 (6.9%)
Mother's Job	Unemployed	143 (45.1%)
	Employed	163 (51.5%)
	No Response	11 (3.4%)
Father's Job	Unemployed	1 (.3%)
	Employed	298 (94.0%)
	No Response	19 (5.7%)
Total family income/month (Korean Won)	Below 2 million	5(1.6%)
	2 million ~ 4 million	117(36.9%)
	4.1 million ~ 6 million	121(38.2%)
	6.1 million ~ 8 million	48(15.1%)
	8.1 million ~ 10million	13(4.1%)
	Above 10.1million	8(2.5%)
	No Response	5 (1.6%)

Descriptive statistics for demographic variables are presented in Table 3. The average age of mothers and fathers was 35.97 and 38.35, respectively. Looking at the parents' education level, 227 mothers were

university graduates, 55 were high school graduates, and 26 were graduate school graduates, indicating high levels of education. Like mothers, majority of fathers were university graduates (71.3%) but there were more graduate school graduates (11.7%) than high school graduates (10.1%). Overall, current study's participants had a fairly high level of education. Moreover, almost half of the mothers (51.5%) and most of fathers (94%) were currently employed. Almost 61% of total participants earned more than 4 million won per month, indicating that the majority of subjects in this study are from low to middle class families.

2. Measures

1) Overt and Relational Aggression

Parts of Preschool Social Behavior Scale (PSBS-T; Crick et al., 1997) translated in Korean were used to measure children's overt aggression (OA) and relational aggression (RA). Teachers assessed this scale. This scale was adapted from a similar measure developed for use with children in middle childhood (Crick, 1996). The original version consists of 25 items that assess preschool children's relational aggression (8), overt aggression (8), prosocial behavior (4), depressed affect (3), preschoolers' acceptance with same sex peers (1) and preschoolers' acceptance with opposite sex peer (1). For the present study, only the items that measures children's OA and RA were selected. Two items from both OA and RA were excluded because these items cross-loaded on the factor analysis in prior research (Crick et al., 1997). Thus, six items for each aggression types that make up a total of twelve items were used. The response scale for each item ranged from 1 (*never or almost never true of this child*) to 5 (*always or almost always true of this child*). Mean scores of each subscale was used to measure children's aggressiveness. Thus, higher scores (total of 5) indicate that the child is more like to be aggressive. Cronbach's alpha scores for each subscale were computed and were shown to be internally consistent. Alphas for OA and RA were .89 and .90, respectively (Table 4). Full list of items are presented in Appendix 2.

Table 4*Constructs, Item Number, and Cronbach's α of PSBS-T Scale*

Dimensions	Constructs (Item Number)	Number of Items	Cronbach's α
Overt Aggression	Tendency to push, hit, kick, or threaten to beat up a peer [1, 3, 4, 7, 8, 12]	6	.89
Relational Aggression	Tendency to socially exclude, ignore, tease or spread rumors about a peer [2, 5, 6, 9, 10, 11]	6	.90

2) Mothers' Reactions

No pre-existing scale for measuring mothers' reactions to children's aggression was identified in existing literature. Therefore, guided by previous works, a new scale, the Mothers' Reaction to Hypothetical Vignettes of Children's Aggression (MRCA) Scale, was developed for the study (Hasting & Rubin, 1999; Harnish, 2011; Jung, 2003; Kim, 2006; Kim & Kim, 2007; Kim et al., 2009; Lee, 1992; Mills & Rubin, 1990, 1992; Werner et al., 2006).

(1) Development of Hypothetical Vignettes (HV) for MRCA Scale

Four hypothetical vignettes that depict Children's OA (2 vignettes) and RA (2 vignettes) were developed based on the previous literature. Most episodes used in the Korean studies were translated and redesigned versions of those used by Mills and Rubin (1990) and Werner et al. (2006). A total of fifteen versions of hypothetical vignettes that depict preschool children's OA and RA were derived from prior studies (Hasting & Rubin, 1999; Harnish, 2011; Jung, 2003; Kim, 2006; Kim & Kim, 2007; Kim et al., 2009; Lee, 1992; Mills & Rubin, 1990, 1992; Werner et al., 2006). However, these episodes were too culture-bound and simple.

To develop hypothetical vignettes that depict frequently occurring aggression situations among Korean children, a researcher met with two educators with more than six years of teaching experiences. Educators were asked to share common situations of children's aggression that frequently occur in 3- to 6-year-old children's classrooms. Educators were encouraged to share their memories freely,

but were frequently reminded to consider that the situation they describe should be relevant to 3- to 6- year-old children.

The researcher presented a brief description about the goal of the study and her previous attempts at examining mothers' reactions to children's aggression. The definitions of OA and RA and a scales used to measure children's aggression were presented to teachers to clarify the terms and to assist them when they share their ideas. The hypothetical vignettes used in the previous studies were not presented to teachers during the discussion. The researcher took notes during the meeting. After the discussion, educators, and the researcher worked together to create five hypothetical vignettes of children's aggression.

Twenty hypothetical vignettes derived from both previous literatures and the interview. Three other professionals in the field of child studies reviewed these Hypothetical vignettes. Twenty stories were trimmed down to six vignettes that depict the most common aggressive acts of children. Second meeting was held with two educators to review six hypothetical vignettes. Educators commented that the way target child communicated to victim child did not perfectly depict the real situation. For instance, they mentioned that preschool children rarely use direct phrases such as "I am not playing with you", "Don't let him/her play" or "I will break it if you don't give me that block" which will cause them trouble if heard by teachers. According to the teachers, OA is more commonly portrayed in the form of physical aggression such as breaking or destroying something made by friends or slightly pushing the victim child as if they did it by mistake. RA is most commonly portrayed in the form of ignoring victims' suggestions or questions. Some children threat their peers by saying that they will not give or make things that they want or not allow them to be the character they want during the playtime. The detail information regarding the revisions made by the educators are presented in Table 5.

Table 5
Summary of Revising Process for Developing HV

Before revision	After revision
<p>1. Overt Aggression:</p> <p>1.1. 근래에 친구들과 놀고 있는 자녀를 데리러 간 일이 세 번 있었습니다. 그때마다 자녀가 다른 아이의 장난감을 뺏어 쥐고, 그 아이를 밀치는 것을 보았습니다. [For the past three days, you went to pick up your child from school. Each time, you saw your child grabbing his/her friend's toy and pushing his/her friends.]</p> <p>1.2. 근래에 친구들과 놀고 있는 자녀를 데리러 간 일이 세 번 있었습니다. 줄을 서서 이동하는 동안 아이가 자기보다 먼저 가려고 하는 친구들을 손으로 밀치고 어깨로 치는 것을 보았습니다. [For the past three days, you went to pick up your child from school. Each time, children were lined up to play outside. Then, you saw your child pushing and shoving friends who tried to walk past him.]</p> <p>1.3. 아동 두 명이 블록 쌓기 놀이를 하고 있었습니다. 그런데 당신의 자녀가 그 친구들한테 가서 “나도 블록 놀이 할 거야. 빨리 안주면 이거 부셔버린다” 라고 말합니다. [Two children were playing with blocks. Your child went up to them and said, “I want to play with the blocks. If you don't give them to me right now, I will break this”.]</p>	<p>1. Overt Aggression:</p> <p>1.1. 근래에 친구들과 놀고 있는 자녀를 데리러 간 일이 세 번 있었습니다. 그때마다 자녀가 다른 아이의 장난감을 뺏아 쥐고, 그 아이를 밀치는 것을 보았습니다. [For the past three days, you went to pick up your child from school. Each time, you saw your child grabbing his/her friend's toy and pushing his/her friends.]</p> <p>1.2. 근래에 친구들과 놀고 있는 자녀를 데리러 간 일이 세 번 있었습니다. 줄을 서서 이동하는 동안 아이가 앞서가는 친구들을 손으로 밀치고 어깨로 치는 것을 보았습니다. [For the past three days, you went to pick up your child from school. Each time, children were lined up to play outside. Then, you saw your child pushing and shoving a friend ahead of him.]</p> <p>1.3. 아동 두 명이 블록 쌓기 놀이를 하고 있었습니다. 그런데 당신의 자녀가 그 친구들한테 가서 “나도 블록 놀이 할 거야” 라고 제안했는데 친구들에게 받아들여지지 않는 상황이었습니다. 그랬더니 친구들이 쌓은 블록놀이를 부숴줍니다. [Two children were playing with blocks. Your child went up to them and said, “I want to play with the blocks,” but your child was ignored. Then, your child ruined his friends' work.]</p>

<p>2. Relational Aggression:</p> <p>2.1. 당신의 자녀가 놀이터에서 친구와 놀고 있었습니다. 그때 또 다른 친구가 와서 같이 놀자고 했습니다. 친구가 여러 번 말 하는데도 당신의 자녀가 대답하지 않고 계속 놀이를 하는 것을 보았습니다. [Your child was playing with his/her friend at the playground. A few minutes later, another child approached your child and asked several times if he/she could play with them. Your child did not answer and continued with his/her play.]</p> <p>2.2. 당신의 자녀가 놀이터에서 친구와 놀고 있었습니다. 또 다른 친구가 다가와서 같이 놀고 싶다고 했습니다. 그런데 당신의 자녀가 “야, 우리 애 끼워주지 말자” 라고 말하고 친구를 데리고 다른 데로 가버렸습니다. [Your child was playing with his/her friend. A few minutes later, another child walked up to your child and asked if he/she could play with them. Your child said, “Don’t let him/her play with us!”, and walked away with <i>his/her</i> friend.]</p> <p>2.3. 아이들이 같이 그림을 그리고 있었습니다. 당신의 자녀가 옆에 앉은 아동에게 “빨간색 나 줘. 안주면 친구 안 해” 라고 했습니다. [Your child and his/her friends were drawing. Your child said, “Give me your red crayon, or I won’t be your friend,” to a child sitting next to him/her.]</p>	<p>2. Relational Aggression:</p> <p>2.1. 당신의 자녀가 놀이터에서 친구와 놀고 있었습니다. 그때 또 다른 친구가 와서 같이 놀자고 말했습니다. 친구가 여러 번 말 하는데도 당신의 자녀가 대답하지 않고 계속 딴청 하는 것을 보았습니다. [Your child was playing with his/her friend at the playground. A few minutes later, another child approached your child and asked several times if he/she could play with them. Your child did not answer and pretended to be busy.]</p> <p>2.2. 당신의 자녀가 놀이터에서 친구와 놀고 있었습니다. 또 다른 친구가 다가와서 같이 놀고 싶다고 했습니다. 그런데 당신의 자녀는 대답하지 않고 “우리 다른 놀이 하자!” 라고 말하며 같이 놀던 친구를 데리고 다른 장소로 이동했습니다. [Your child was playing with his/her friend. A Few minutes later, another child walked up to your child and asked if he/she could play with them. Your child ignored him/her and said, “Let’s do something else!”, and walked away with <i>his/her</i> friend.]</p> <p>2.3. 아이들이 같이 그림을 그리고 있었습니다. 당신의 자녀가 옆에 앉은 아동에게 “빨간색 나 줘. 안주면 자동차 안 만들어준다” 라고 했습니다. [Your child and his/her friends were drawing. Your child said, “Give me your red crayon, or I won’t make you a car,” to a child sitting next to him/her.]</p>
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Among six revised versions of hypothetical vignettes, the researcher selected four hypothetical vignettes. In order to make it possible to compare mothers’ reactions to OA and RA and to minimize mothers’ confusion, hypothetical vignettes that depicted proactive

forms of aggression were selected⁵ (1.1, 1.2, 2.2 and 2.3). These vignettes were once more reviewed by two other professionals in the field of child studies for face validity. Both professionals agreed that the selected hypothetical vignettes depicted the common aggressive acts of children ages 3 to 6. Final versions of the four HVs are presented in Appendix 1.

(2) Development of Mothers' Reactions to Hypothetical Vignettes of Children's Aggression (MRCA) Scale

A new scale for measuring mothers' reactions to hypothetical vignettes of children's aggression (MRCA) was designed for the current study. Following steps were taken:

Literature review. Previous literature have revealed that mothers' reactions to the hypothetical vignettes were examined (1) using different terms (2) open-ended question methods and (3) coding systems derived from two major studies of Werner et al. (2006) and Rubin and Mills (1990, 1992).

Previous studies used terms such as mothers' intervention strategies (Harnish, 2011), behavioral intervention strategies (Werner et al., 2006), responses (Kim et al., 2009), socialization strategies (Hasting & Rubin, 1999; Jung, 2003), and reactive socialization behaviors (Mills & Rubin, 1990) to examine mothers' verbal and behavior reactions to the hypothetical vignettes. For the current study, the term, "mothers' reactions" was used. MRCA Scale measures mother's tendency for engaging in various acts, verbally and behaviorally, in response to the hypothetical vignettes.

Prior studies that used hypothetical vignettes to measure mothers' reactions to children's problematic behaviors used open-ended question method (Werner et al., 2006; Rubin & Mills, 1990, 1992; Hasting & Rubin, 1999; Harnish, 2011; Kim et al., 2009; Werner et al.,

⁵ The previous study (Werner et al., 2006) examined mothers' responses to children's proactive and reactive forms of aggression by presenting eight hypothetical vignettes. Kim and her colleagues (2009) suggested that Korean mothers either did not understand the situations that depicted children's reactive aggression or provided very ambiguous responses to these situations. Since the main focus of the study was to examine mothers' reactions to children's aggressive acts, hypothetical vignettes that depict proactive forms of aggressive behavior was used for the current study.

2006). For instance, Harnish (2011), Kim et al. (2009) and Werner et al. (2006) asked mothers to respond to the question, “*What would you do, if anything, if you witnessed the event takes place*” after presenting hypothetical vignettes that depict children’s RA and OA. Then, mothers’ responses were transcribed by trained students and coded following the coding procedures of Mize, Pettit, and Brown (1995) and Colwell et al. (2002). They used four dimensions⁶, discussion, encouragement, power assertion and rule violation, to describe the different ways mothers react to the hypothetical vignettes. Four dimensions were developed based on the ten types of strategies⁷.

Other studies that examined mothers’ reactions to children’s aggression and withdrawn behaviors followed the methods proposed by Rubin and Mills (1990, 1992) and Hasting and Rubin (1999). Similar to those studies that examined mothers’ reactions to children’s OA and RA, the open-ended question method was also favored by these researchers. However, Jung (2003) examined mothers’ reactions on children’s problematic behaviors using the scale developed based on the six subcategories mentioned by Hasting and Rubin (1999). The six subcategories were *high power assertion*, *moderate power assertion*, *low power assertion information seeking*, *playful strategies* and *no response*. In addition, Cho and Kim (2007) provided a full list of mothers’ reactions to the hypothetical vignettes. In their study, they

⁶ Four dimensions: *Discussion* (the extent to which the strategy involves direct communication between mother and child about the specific social problem and possible solutions to the problem) *encouragement* (the extent to which the strategy involves communication about the importance of engaging in positive play with peers), *power assertion* (the extent to which the strategy involves attempts to change the target child's behavior) and *rule violation* (the extent to which involves attempt to communicate clearly to target children that their behavior violated a social or moral rule) (Mize et al., 1995, Colwell et al., 200 & Werner et al., 2006).

⁷ Ten strategies: *Removal/distraction* (“I would help my child find another activity”), *punishment* (“I would give her a time out”), *reprimand* (“I would tell my son his actions were wrong”), *reparations* (“My child would clean up the game and set it back up for the other children to play”), *direct involvement* (“I would offer to help my child rebuild his tower”), *reassurance* (“I’ll comfort my child”), *appeal to feelings* (“I’d talk to my child and try to help her understand how the other child might feel”), *explanation* (“You’re right that she should wait her turn, but remember, we don’t push people”), *information seeking* (“I’d ask my child why she did that”), and *problem solving* (“I would help the children solve the problem”) and *general* (“I would tell my child that that was not a very nice thing to say”) (Mize et al., 1995, Colwell et al., 200 & Werner et al., 2006).

extracted the list of mothers' common responses to the question, "*What, if anything, would you do about your child's behavior?*" and organized their responses into six subcategories⁸. Definitions, examples of four dimensions, strategies and subcategories and responses of mothers presented in the previous studies were reviewed and collected to create items for the MRCA Scale.

Interview. Two educators were interviewed to explore for other possible reactions (responses/strategies) of mothers to children's aggression. Educators were asked to recall what they heard from mothers during the parent-teacher meeting session. They described how mothers responded to children's aggression at home. According to the teachers, mothers of aggressive children reported that they tend to place blame on children for their acts (e.g., "Didn't I tell you to stop behaving in such way?"). They also threatened their children saying that they will be deprived of their privileges (e.g., "I won't let you play with your friends next time" or "I won't buy you toy/ice-cream"). In addition, others used more subtle ways of dealing with the situation by gently but explicitly telling a child to understand that their behavior was unacceptable.

Parenting Behavior Questionnaire (PBQ) and Dimensions of Discipline Inventory (DDI) were used as references in developing scale items for measuring mothers' reactions to the hypothetical vignettes of children's aggressive behavior (Coolahan, McWaume, & Famtuzzo, 2002; Straus & Fauchier, 2007). A total of 56 statements were initially extracted from previous literature and interviews. These statements were categorized under the subsets of DDI: corporal punishments, psychological aggression, diversion, explain/teach, reward, deprivation of privileges, penalty task, monitoring, ignoring behavior, information seeking and understanding. The researcher met with two other professionals separately to discuss the appropriateness of the subsets and the validity of items listed under each category. In the meeting, it was decided that the category items related to "reward" do not

⁸ Six subcategories: *High power assertion* (Strategies involving strong force or coercion (Punishment, strong commands, and threats), *moderate power assertion* (Reasoning, modeling and gentle directions) and *low power assertion* (non-directive strategies such as asking the child for information or redirecting the child). Information-seeking (consulting the teacher), *planful strategies* (arranging opportunities for peer play) and *no response* (Hasting & Rubin, 1999).

demonstrate mothers' typical reactions to children's OA and RA. Therefore, items under the "reward" was excluded. In addition, items under "information seeking" (e.g., ask help from professionals or read story books about peer conflict) and "no reaction" (e.g., ignore, monitor and no intervention) were because they did not demonstrate mothers' active reaction to children's aggression. A total of 16 items were created. Final subsets of MRCA Scale included mothers' extent to explain, teach, use physical and psychological aggression, penalty, and deprivation of privileges, corporal punishment, and understand.

Pilot study was conducted to check for descriptive statistics and frequency of mothers' responses to each item of the MRCA Scale. From this analysis, questions with highly skewed responses were extracted and reviewed again. Mean values and frequency for participants' responses for each question were examined carefully to see if any of the questionnaires lead mothers to choose a specific answer. The researcher met with three other professionals to ask for their opinions either to eliminate or re-word these questionnaires (see Table 6). The overall validity of the questionnaires was re-checked with these professionals.

Table 6

Corrected Items of the MRCA Scale

Excluded Items
<ul style="list-style-type: none"> - 무조건 "괜찮아" 라고 말한다. [Without question, I would always tell my child it is ok] - 엄마가 보고 있을 거라고 아이에게 말한다 [I would tell my child that I will be watching her/him] - 내 아이가 의기소침해지지 않기 위해서 내 아이 편을 들어준다 [I would be on my child's side so that he/she doesn't feel bad]
Additionally Included Items
<ul style="list-style-type: none"> - 그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다. [I would tell my child that he/she is not my son/daughter if he/she behaves in such ways] - 행동을 목격한 즉시 아이에게 가서 "안돼" 혹은 "하지마" 라고 일방적으로 주의만 준다. [At the moment I observe the behavior, I would walk up to my son/daughter and say to him/her "No!" or "Don't do that!"]

The validity and reliability of the scale is supported by the use of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Grounded on the results of previous studies, the

researcher assumed that the subcategories used for the study would be grouped to form subscales. EFA was conducted to explore which items group together to extract a fewer number of factors. CFA was conducted to check the scales' validity. Discussion will be provided in preliminary analysis section (p.39).

MRCA Scale consist total of 15 items⁹ that measure mothers' restrictive reaction (9) and responsive reaction (6) to preschool children's aggressive behavior. The reaction scale for each item ranged from 1 (*never or almost never true*) to 5 (*always or almost always true*). Mean scores of each subscale was used to measure the extent of mothers' restrictive and responsive reactions toward children's aggression. Thus, mothers received scores for both subsets. Higher score (5) of each subset indicates the higher tendency of reacting in respective style. Cronbach's alpha for restrictive reaction and responsive reaction was .87 and .83, respectively. Both presented high internal consistency (Table 7).

Table 7
Constructs, Item Number, and Cronbach's α of MRCA Scale

Dimensions	Constructs (Item Number)	Number of Items	Cronbach's α	
			OA Episode	RA Episode
Restrictive Reaction	Strategies involving strong force, coercion and restrictions: Corporal punishment, penalty, deprivation of privileges, strong commands, threats, blaming, and being psychologically and physically aggressive toward children [4, 5, 6, 10, 11, 12, 13, 15, 16]	9	.87	.89
Responsive Reaction	Strategies involving reasoning, modeling and offering gentle directions: Understanding, explaining, teaching, helping to solve problems, and explicitly telling children what is expected [1, 2, 3, 7, 8, 9, 14]	6	.83	.86

⁹ One item was dropped after conducting Exploratory Factor Analysis (refer to page 39 for detail information)

3) Temperament

Children's Behavior Questionnaire very short form was used to assess children's temperament. This scale was developed based on the longer version of the CBQ (Rothbart, Ahadi, & Hershey, 1994; Rothbart, Ahadi, Hershey, & Fisher, 2001). The scale was translated and some wordings were corrected to make it more applicable for children in Korea. The scale consists of 36 items that were divided into three broad dimensions: Surgency (e.g., "Seems always in a big hurry to get from one place to another"), negative affect (e.g., "Is very difficult to soothe when he/she has become upset") and effortful control (e.g., "When drawing or coloring in a book, shows strong concentration"). The response scale of each item ranged from 1 (*extremely untrue of your child*) to 7 (*extremely true of your child*). When the child has not been observed in the situation described, parents could choose option 8 (*Not Applicable*). Cronbach's alpha for surgency, negative affectivity and effortful control were .61, .70, and .74, respectively (Table 8). Full list of questionnaires are presented in Appendix 1.

Table 8
Constructs, Item Number and Cronbach's α of CBQ very short version Scale

Dimension	Constructs [Item numbers]	Number of Items	Cronbach's α
Surgency/ Extraversion	Characterized by high positive loadings of impulsivity, high intensity pleasure, activity level and negative loading of shyness [1, 4, 7, 10, 13*, 16, 19*, 22*, 25, 28, 31*, 34*]	12	.61
Negative Affectivity	Characterized by high positive loadings of sadness, fear, anger/frustration, and discomfort and negative loading of low level of falling reactivity or soothability [2, 5, 8, 11, 14, 17, 20*, 23, 26*, 29*, 32, 35]	12	.70
Effortful Control	Characterized by high positive loadings of inhibitory control, attentional control, low intensity pleasure and perceptual sensitivity [3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36]	12	.74

* Items reverse-coded

3. Procedures

1) Pilot Study

Pilot study was conducted prior to the main study in order to check the reliability of questionnaires and appropriateness of the total length of the survey. The pilot study was conducted in one day-care center located in Seoul. A total of 50 surveys were distributed to mothers of 50 children (boys= 25; girls=25) and three teachers of 3-, 4- & 5-year-old classes. Fifteen children were from the 3-year-old class, 17 were from the 4-year-old and 18 were from the 5-year-old class. Each mother was asked to assess her children's temperament and to record their responses on the MRCA Scale. Teachers were asked to fill-out the PSBS-T for each child.

Before the pilot study, the researcher was concerned about the length of the survey in obtaining accurate answers from participants. In the pilot study, 36 (70%) surveys were returned and none of these surveys had missing or repetitively filled out answers. As the returning rate was not as low as expected, the researcher confirmed that the length of the survey was manageable for the mothers. Scales used to measure children's temperament (surgency, negative affectivity and effortful control), mothers' reactions and children's aggression (overt aggression and relational aggression) were shown to be reliable. All Cronbach alpha scores ranged between .6 and .9.

2) Main Study

The present study contacted total of eight day-care centers and kindergartens located in Busan, Seoul, and Kyungi province to distribute survey questionnaires to mothers and teachers. The study was conducted from September 18th to October 10th. Two separate packets, a packet containing description of the survey, questionnaires for mothers (CBQ very short form and MRCA), a present for compensation, and a packet containing teachers' questionnaires (PSBS-T) were delivered to each child-care center. Then, teachers were asked to distribute the packets to mothers. Each child was given a serial number prior to the study. Mothers were reminded that this survey will

only be used for this study and their personal information will be confidential. Teachers were reminded to collect as much information as possible, but to avoid forcing mothers to return the packets. Teachers were reminded that mothers are welcome to not return the survey if they do not wish to participate. Once the mothers returned the survey, teachers completed the PSBS-T for the specific child. Teachers kept the completed PSBS-T and mothers' survey together. Thus, each child received two different ratings from his/her mother and a teacher.

From the 478 surveys initially distributed, those that were incomplete or not returned were excluded in the analysis. A total of 317 mothers and 28 teachers responded to the survey. Among these mothers who participated in the study, 156 (49.2%) were mothers of boys and 161 (40.8%) were mothers of girls. At the time of the survey distribution, 81 children were in the 3-year-old-class (37 boys; 44 girls), 130 children in the 4-year-old (64 boys; 66 girls) and 106 were in the 5-year-old class (55 boys; 51 girls). However, the study was conducted during the second semester of the school year. Therefore, although the target subjects were from 3- to 5-year-old class, children's ages ranged from 3 to 6 years. For the present study, each child's age was recalculated based on the first day of survey distribution.

4. Data Analysis

SPSS and Analysis of Moment Structures (AMOS) were used for this study: Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), t-test, correlation and Hierarchical Multiple Regression Analysis were conducted.

EFA was conducted to bring intercorrelated variables together under more general underlying variables. Confirmatory Factor Analysis CFA was conducted to test the validity of the model using goodness-of-fit test.

T-test was conducted to investigate whether young children's overt and relational aggression significantly differed by children's gender. Correlation matrix was used to examine the relationship between mothers' reactions, children's temperament and children's aggression. Hierarchical multiple regression analysis was conducted to

investigate the additive and interactive effects of mother's restrictive and responsive reaction, children's temperament (surgency, negative affectivity and effortful control) on children's OA and RA.

V. RESULTS

This chapter begins with preliminary analyses to test the psychometric qualities of scales used to collect the data. Then, result of the data analyses regarding the relation between children's gender, temperament, mothers' reactions and children's overt aggression (OA) and relational aggression (RA) will be presented. The specific research issues addressed in these analyses are as follows: (a) the differences in young children's OA and RA according to their gender (b) the extent to which mothers' reactions and children's temperament predict children's OA and RA (c) the extent to which interactive effects of dimensions of children's temperament and mothers' reactions predict children's OA and RA.

1. Preliminary Analysis

1) Preliminary Analysis for MRCA Scale

Mothers' Reactions to Hypothetical Vignettes of Children's Aggression (MRCA) Scale was developed for the study. It is composed of a diverse group of items that were expected to group together to form subscales. To determine best measurement model for this scale, participants was first randomly divided into two groups: exploratory and confirmatory samples. Exploratory Factor Analysis was used to bring intercorrelated variables together under more general, underlying variables. Confirmatory Factor Analysis was used to test for validity.

Exploratory Factor Analysis. Half of the total number of samples (n=148; 78 boys; 70 girls) were randomly selected using SPSS random selection procedure. The 16-item MRCA Scale was then subjected to an exploratory factor analysis (EFA) using maximum likelihood extraction method with direct oblimin rotation with number of factors set to two. Based on the theoretical background, the researcher assumed that all items would fit into two different factors. The results of the scree plot suggested that between two and three

factors would be optimal.

Two sets of EFAs, one each for two and three factors, were computed using the scale for measuring mothers' reactions to hypothetical vignettes of children's OA. The three-factor model was first examined. The third factor contained two items with the eigenvalue of less than 1. In addition, the Cronbach's alphas for the second and third factor were .58 and .61, respectively. This solution was rejected. The two-factor model was examined. Forty-three percent of the variance was explained by the two-factor solution. However, questionnaire number two "친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다 (I would firmly tell my child that his/her behavior was unacceptable)" yielded the lowest communality (.11) with a factor loading of .29. Thus, this questionnaire was eliminated. Items with loadings greater than .40 were retained in each factor. A separate analysis with 15 remaining items revealed two distinct factors that accounted for 45.9% of the total variance. The first factor contained nine items related to the mothers' restrictive reaction to children's OA, which accounted for 32.57% of the variance. The second factor contained six items related to mothers' responsive reaction, which accounted for 13.28% of the variance.

Same procedures were taken for the scale measuring mothers' reactions to hypothetical vignettes of children's RA. The first factor (restrictive reaction) accounted for 45.85% of the variance, while the second factor (responsive reaction) accounted for 16.56% of variance (Table 9).

Items loaded in two factors were labeled *Restrictive Reaction* and *Responsive Reaction* following the titles of subsets introduced in the PBQ-HS's scale, a modified version of Parenting Behavior Questionnaire (PBQ: Hart et al., 1998; Robinson, Mandelco, Olsen, & Hart 1995) (Coolahan et al., 2002). Coolahan et al. (2002) examined African American population using the PBQ scale and re-categorized the four types (authoritative, permissive and authoritarian parenting) to three types (active-responsive, active-restrictive and passive-permissive parenting dimensions) of parenting behaviors. Referring to the definitions of active-responsive and active-restrictive and items under these two types of parenting behavior, the researcher judged that "restrictive reaction" and "responsive reaction" to be appropriate terms that represent items of the present study.

Table 9

Korean Version. Factor Loadings for Exploratory Factor Analysis with Direct Oblimin Rotation of MRCA Scale (n=148)

Items	Factor Loadings				Common	
	Restrictive		Responsive		-alities	
	OA	RA	OA	RA	OA	RA
5. "이렇게 행동하면 엄마한테 맞는다"라고 말한다.	.90	.90	-.27	-.09	.80	.81
4. 벌을 준다. (예, 손을 들고 서있게 한다).	.78	.85	-.12	-.07	.63	.73
10. 손으로 아이를 때린다.	.73	.73	-.16	-.14	.54	.53
16. 아이가 좋아하는 것을 안 준다고(못하게 한다고) 한다.	.69	.78	-.41	-.18	.51	.61
15. "또 왜 그러니?" 또는 "엄마가 그렇게 하지 말라고 했어, 안 했어?" 하며 아이의 행동에 대해 다그친다.	.66	.76	-.33	-.22	.45	.59
13. 행동을 목격한 즉시 아이에게 가서 "안돼" 혹은 "하지마"라고 일방적으로 주의만 준다.	.62	.71	-.38	-.24	.41	.52
11. 그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다.	.59	.65	-.25	-.13	.35	.42
12. 사건에 대해서 알기도 전에 친구에게 일단 사과하라고 말하도록 한다. 친구에게 먼저 사과하라고 말하도록 한다.	.43	.56	-.04	.03	.20	.33
6. 아이가 친구와 더 이상 놀지 못하도록 다른 곳으로 분리시킨다.	.42	.59	-.19	-.14	.18	.35
7. 아이와 함께 친구 입장에서 생각해보고 친구의 기분과 마음을 이해할 수 있도록 도와준다.	-.26	-.23	.85	.83	.72	.70
8. 아이와 같이 놀면서 친구와 사이 좋게 지내는 방법을 알려준다.	-.24	-.18	.80	.80	.64	.65
9. 아이의 감정을 읽어준다.	-.38	-.23	.69	.65	.50	.44
14. 문제를 해결할 수 있도록 도와준다.	-.17	-.19	.66	.77	.44	.60
1. 아이의 잘못된 행동에 대해 구체적으로 설명해준다.	-.40	-.29	.52	.62	.33	.42
3. 우선 먼저 내 아이의 기분을 가라앉혀준다.	-.10	.00	.41	.41	.17	.17
2. 친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다.			Deleted			
Eigenvalues	4.89	5.39	1.99	2.65		
% of Total variance	32.57	33.66	45.85	50.22		
Cronbach's α	.87	.89	.83	.86		

Factor loadings >.40 are in bold face (OA= Overt Aggression; RA= Relational Aggression)

English Version. Factor Loadings for Exploratory Factor Analysis with Direct Oblimin Rotation of MRCA Scale (n=148)

Items	Factor Loadings				Common	
	Restrictive		Responsive		-alities	
	OA	RA	OA	RA	OA	RA
5. I would tell my child that I would punish him/her if he/she behaves in such ways	.90	.90	-.27	-.09	.80	.81
4. I would punish my child (e.g. Stare at the wall)	.78	.85	-.12	-.07	.63	.73
10. I would spank my child with my hands	.73	.73	-.16	-.14	.54	.53
16. I would tell my child that I would not give (buy) what he/she likes. (e.g. I won't give you ice-cream if you behave this way")	.69	.78	-.41	-.18	.51	.61
15. I would ask my child questions such as "Why would you do that?" and "Didn't I tell you to stop?" and make him/her feel bad about him/herself	.66	.76	-.33	-.22	.45	.59
13. As soon as I observe such behavior, I would walk up to my son/daughter and tell him/her "No!" or "Don't do that!"	.62	.71	-.38	-.24	.41	.52
11. I would tell my child that he/she is not my son/daughter if he/she behaves in such ways	.59	.65	-.25	-.13	.35	.42
12. I would tell my child to first say sorry to him/her friend even before I know more about the situation	.43	.56	-.04	.03	.20	.33
6. I would remove my child from the situation so he/she does not get to be with his/her friends	.42	.59	-.19	-.14	.18	.35
7. I would help my child to consider and understand how his/her friends would feel	-.26	-.23	.85	.83	.72	.70
8. By participating in the children's play, I would teach my child how to get along his/her friends	-.24	-.18	.80	.80	.64	.65
9. I would try to understand how my child feels	-.38	-.23	.69	.65	.50	.44
14. I would help my child to solve the problem	-.17	-.19	.66	.77	.44	.60
1. I would explicitly explain to my child what was unacceptable with his/her behavior in detail	-.40	-.29	.52	.62	.33	.42
3. I would first calm my child down	-.10	.00	.41	.41	.17	.17
2. I would firmly tell my child that his/her behavior was unacceptable			deleted			
Eigenvalues	4.89	5.39	1.99	2.65		
% of Total variance	32.6	33.7	45.9	50.2		
Cronbach's α	.87	.89	.83	.86		

Factor loadings >.40 are in bold face (OA= Overt Aggression; RA= Relational Aggression)

Confirmatory Factor Analysis. To investigate and test the validity of the model, CFA, a structural equation modeling technique, was conducted using Analysis of Moment Structures (AMOS). Data of half the participants that were not included in the EFA was used for this analysis. CFA can be used to determine the goodness of fit between a hypothesized model and the sample data (Pai, Mullins, Drotar, Burant, Wagner, & Chaney, 2007). CFA was chosen for this analysis for its ability to specify the causal relationships between observed variables and latent constructs while, at the same time, accounting for item-level measurement error (Bryant & Yarnold, 1995). The following goodness-of-fit indices were used to assess the degree of fit between the model and the sample: χ^2 , Incremental Fit Index (IFI: >.95 excellent; Schreiber, Stage, King, Nora, & Barlow, 2006), the Comparative Fit Index (CFI: >.90 acceptable, >.95 excellent; Bentler & Bonnet, 1980) and the Root Mean Square Error of Approximation (RMSEA: <.08 acceptable, <.05 excellent; Brown & Cudeck, 1993). For this study, sixteen items were used to measure mothers' reactions to hypothetical vignettes of children's OA and RA. CFA was conducted for both types of aggression (Table 10 & Figure 1 and 2). The model was shown as an adequate fit or the current study's data (OA: χ^2 ($df= 87$) = 166.1; IFI = .93; CFI = .92; RMSEA = .07; RA: χ^2 ($df= 87$) = 139.6; IFI = .95; CFI = .95; RMSEA = .06)

Table 10

Confirmatory Factor Analysis for MRCA Scale (n=169)

Scale		Number of Items	χ^2/df (p-value)	IFI	CFI	RMSEA
Vignettes Depicting Children's OA	Restrictive Reaction	9	166.1/87(.00)	.93	.92	.07
	Responsive Reaction	6				
Vignettes Depicting Children's RA	Restrictive Reaction	9	139.6/87(.00)	.95	.95	.06
	Responsive Reaction	6				

Note. CFA was conducted for both OA and RA Vignettes.

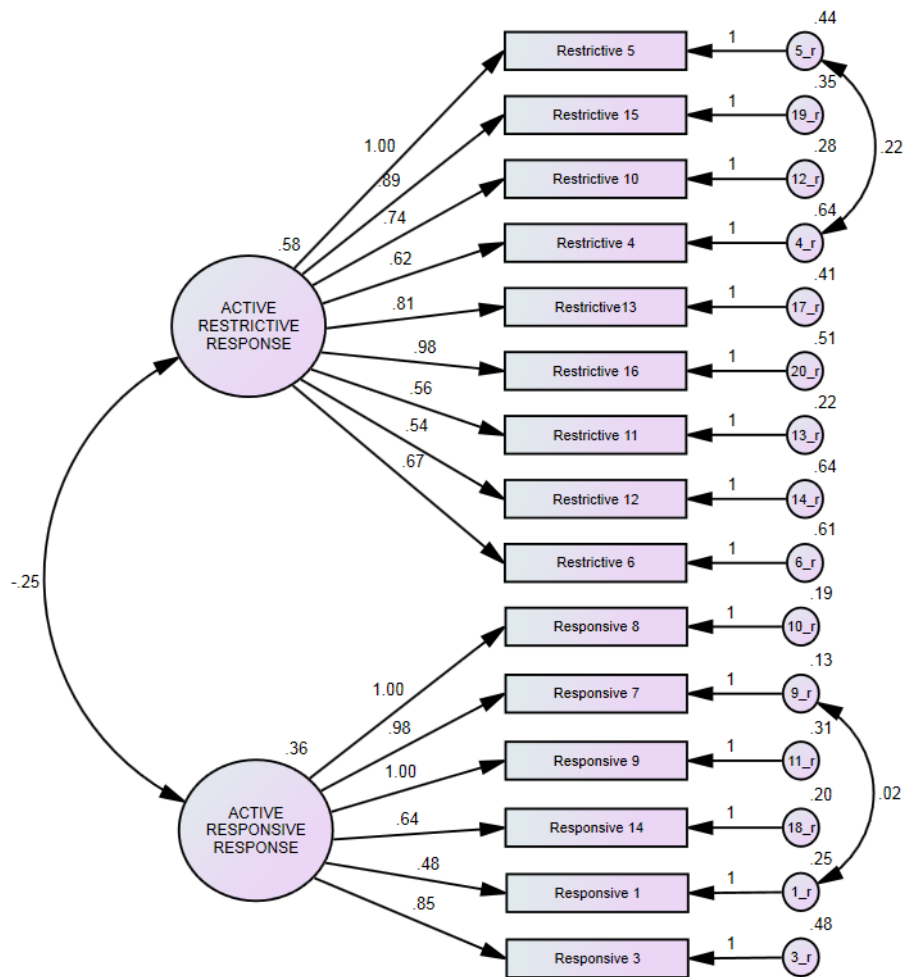


Figure 1
Final confirmatory Factor Analysis (CFA) model of the Mothers' Reactions to Hypothetical Vignettes of Children's Aggression (MRCA) Scale for children's overt aggression.

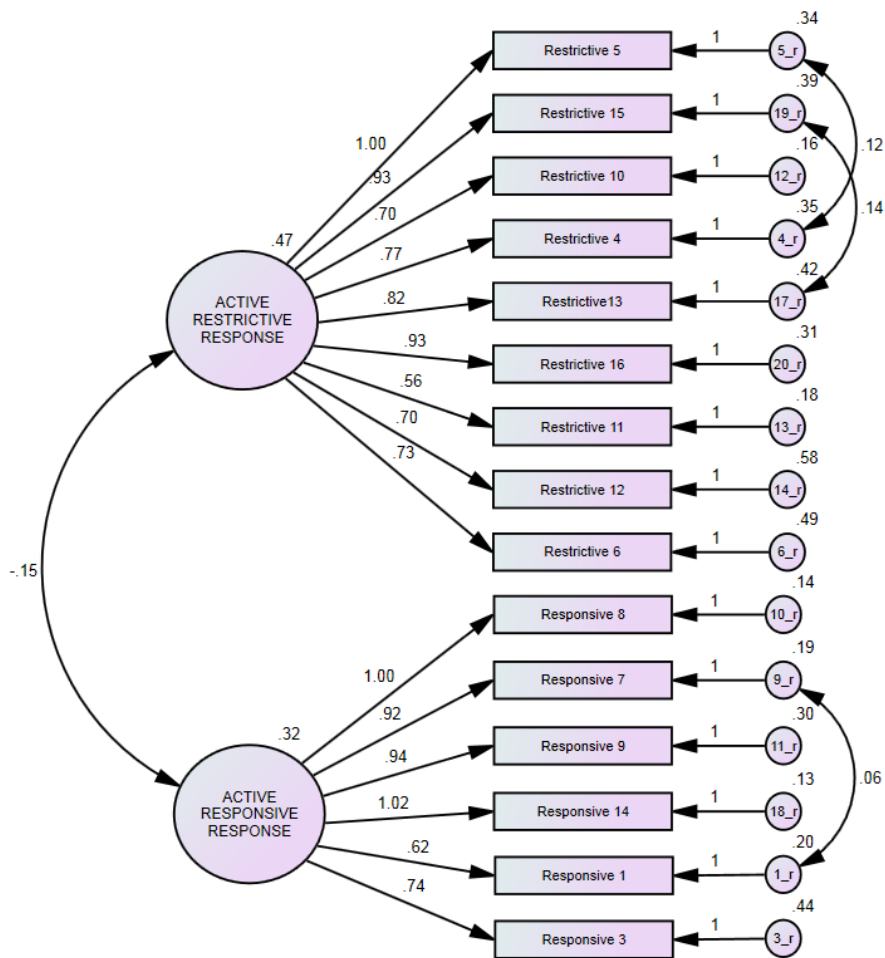


Figure 2

Final confirmatory Factor Analysis (CFA) model of the Mothers' Reactions to Hypothetical Vignettes of Children's Aggression (MRCA) Scale for children's relational aggression.

2) Preliminary Analysis for Main Study

Normality of dependent variables (children's OA and RA) was examined prior to the study using histogram, skewness and kurtosis. Skewness measures where the data lies and whether or not it is heavily weighted towards the right or left ends of the scale. Generally, skewness and kurtosis of more than -1 and less than 1 represent normal distribution. Test of skewness and kurtosis of children's aggression revealed that both OA and RA was slightly skewed (OA=1.01 (.59); RA=.60 (.14)). Thus, logarithmic transformation was used to stabilize

the variance of sample. Skewness and kurtosis of OA after the logarithmic transformation were .33 and -.87, respectively. Skewness and kurtosis of RA after the logarithmic transformation were -.05 and -.97, respectively. Durbin-Watson for overt aggression (1.51) and relational aggression (1.676) were close enough to 2, which indicates normal distribution.

2. Main Analysis

1) Gender and Aggression Types

To investigate the gender differences in children's OA and RA, t-test was conducted. Means and standard deviations for boys and girls on each factor of the PSBS-T are displayed in Table 11. T-test indicates that boys' score for OA was significantly higher than girls' score, ($t(317)= 5.8, p<.000$), while boys' and girls' score for RA was not significantly different. Moreover, total aggression score was significantly higher for boys than girls ($t(317)= 3.51, p<.001$). These findings correspond to previous finding that showed OA to be more prevalent among boys (Crick et al., 1997; McNeilly-Choque, Hart, Robinson, Nelson, & Olsen, 1996; Ostrov & Keating, 2004). The findings also go along with finding of Hart et al. (1998) who found no gender difference for RA. However, the findings are contrary to those studies that showed girls to be more relationally aggressive than boys (Bonica et al., 2003; Crick & Grotpeter, 1995; Crick et al., 1997).

Table 11

Means and Standard Deviations of Boys' and Girls' Aggression Score

Variable	Total (<i>n</i> =112)	Boys (<i>n</i> =156)	Girls (<i>n</i> =161)	<i>t</i>
	M(SD)	M(SD)	M(SD)	
OA	1.74(.70)	1.95 (.72)	1.52(.61)	5.8***
RA	1.99(.77)	2.04 (.60)	1.95(.82)	1.04
Aggression	1.86(.68)	2.00(.68)	1.73(.66)	3.51**

*** $p < .001$

2) Mothers' Reactions, Children's Temperament and Children's Overt Aggression (OA)

To investigate the relationship between mothers' reactions, children's temperament and children's OA, correlation and hierarchical multiple regression were conducted.

Correlation of mothers' reactions to hypothetical vignettes of overt aggression (HVOA), children's temperament, and children's overt aggression (OA)

Pearson product-moment correlation coefficient was computed to assess the relationship between mothers' restrictive and responsive reaction, and dispositions of children's temperament and children's OA (see Table 12). There were few low to modest but significant correlations in the data. Children's surgency ($r=.26$, $p<.000$) and effortful control ($r=-.15$, $p<.000$) was positively and negatively correlated with children's aggression, respectively. As children's level of surgency decreased, children's OA increased. Meanwhile, as children's effortful control, a tendency to maintain attentional focus and capacity to plan and to suppress inappropriate approach responses in novel situations, increased, children's OA decreased. This result is similar to the findings of previous studies (Choi & Kim, 2010; Kim & Kim, 2007; Russell et al., 2003). On the meantime, children's negative affectivity was not significantly correlated with children's OA.

Both forms of mothers' reactions were significantly correlated with OA. As mothers' restrictive reaction increased, children's OA also increased ($r=.17$, $p<.001$). That is, as mothers use of criticizing, yelling, and punishing child physically and psychologically increased, children's concurrent OA also increased. It also can mean that the more children portrayed OA, the more mothers are likely to react restrictively to children's OA. This result corresponds to the evidence of positive association between physical punishment and children's OA (Bandura, 1973; Kuppens et al., 2009). Meanwhile, the finding is contrary to the results of Kim et al. (2009) who reported that mothers' power assertion was negatively correlated with children's OA. However, when comparing findings of the present study to Kim et al. (2209), one should note the different measurement tools used in both studies.

On the meantime, mothers' responsive reaction, a form of mothers' reaction that involve encouraging, understanding and explaining the rule to children, was negatively correlated with children's OA ($r=-.16, p<.001$). Thus, as mothers' tendency to react responsively to children's OA increased, children's OA decreased. Otherwise, as children's OA decreased, mothers were more likely to respond responsively to their children's OA. This was an expected result. The previous studies have noted on the negative relationship between mothers' positive coaching strategies, positive guidance, and feedback for peer relationship and children's OA (Mize & Pettit, 1997).

Children's temperament was also correlated with mothers' reactions to the hypothetical vignettes of children's OA. Children's negative affectivity was positively related to mothers' restrictive reaction ($r=.19, p<.001$) while children's effortful control was negatively related to mothers' restrictive reaction ($r=-.29, p<.000$), and positively related to mothers' responsive reaction ($r=.43, p<.000$). As children's level of sadness, fear, anger/frustration, discomfort, and soothability increased, mothers' restrictive reaction also increased. As children's effortful control increased, mother's tendency to react restrictively decreased while their tendency to react responsively increased. Overall, children's surgency, effortful control, and mothers' restrictive and responsive reactions to the hypothetical vignettes of children's OA were significantly correlated with children's OA.

Table 12

Correlation of Children's Temperament and Mothers' Reactions to HVOA and Children's OA (n=317)

	1	2	3	4	5	6
1. Overt Aggression	1					
2. Surgency	.26***	1				
3. Negative Affectivity	.01	-.08	1			
4. Effortful Control	-.15**	.04	0	1		
5. Restrictive Reaction	.17**	.14*	.19**	-.29***	1	
6. Responsive Reaction	-.16**	0	-.05	.43***	-.45***	1

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

Hierarchical multiple regression for children's overt aggression

Hierarchical multiple regression was conducted to determine the additive and interactive effect of mothers' reactions, and children's temperament on children's OA.

Following the recommendations of Aiken and West (1991) and Cohen and Cohen (1983), hierarchical order of entry of the predictors variables were done. Children's gender and age was entered in step 1 as control variables. In step 2, mothers' restrictive and responsive reactions to hypothetical vignettes of OA were entered. In step 3, children's temperament (surgency, negative affectivity and effortful control) were added. In step 4, the interaction terms were entered (i.e., Restrictive x Surgency, Restrictive x Negative affectivity, Restrictive x Effortful Control, Responsive x Surgency, Responsive x Negative Affectivity and Responsive x Effortful control). Then, as outline by Aiken and West (1991), a step-down hierarchical examination was performed. This approach starts with the full equation containing all linear effects and all possible interactions between mothers' reactions variables and temperament variables. Nonsignificant highest order terms in the equation (interaction effects) were then omitted (Aiken & West, 1991).

The results are presented in Table 13¹⁰ and Figures 1 through 3. The independent contributions (main effects) of children's temperament and mothers' reactions to the outcome variable were assessed before addressing the interactive contributions (multiplicative effects). Gender and age significantly predicted 15% of the variance in children's OA ($F = 27.1$, $df = 2, 314$, $p < .000$, adjusted $R^2 = .15$). Adding mothers' reactions ($F = 16.90$, $df = 4, 312$, $p < .000$, adjusted $R^2 = .17$) and children's temperament significantly improved the prediction ($F = 15.15$, $df = 6, 310$, $p < .000$, adjusted $R^2 = .23$). The entire group of variables significantly predicted children's OA ($F = 12.64$, $df = 9, 307$, $p < .000$). It predicted total of 27% of the variance in children's OA.

The predictors that significantly influenced children's OA were surgency and the three interaction terms: Restrictive x Surgency, Responsive x Surgency, and Restrictive x Effortful Control. Mothers'

¹⁰ Only significant interaction effects were retained in the final regression model (Finney, Mitchell, Cronkite & Moos, 1984; Aiken & West, 1991).

restrictive reaction significantly predicted children's OA in model two ($t=2.1$, $p<.05$). However, the main effect of restrictive reaction disappeared in the third model when children's temperament variables were added. This indicates that the total variance explained by mothers' restrictive reaction was not as big as the total variance explained by children's temperament. In the third model, children's surgency significantly predicted children's OA ($t=4.47$, $p<.000$). The main effect of surgency ($t=5.06$, $p<.000$) still remained significant in model 4 suggesting that children's surgency is critical in explaining children's OA. In the fourth model, three interaction terms, children's surgency and mothers' restrictive reaction ($t=3.23$, $p<.01$), children's surgency and mothers' responsive reaction ($t=2.96$, $p<.05$), and children's effortful control and mothers' restrictive reaction ($t=-2.42$, $p<.05$) significantly predicted children's OA. Overall, children's surgency was the only predictor that had main effect on children's OA.

The relative contribution was the in order of surgency ($\beta = .27$), Restrictive x Surgency ($\beta = .18$), Responsive x Surgency ($\beta = .16$), and Restrictive x Effortful control ($\beta = -.13$). Children's surgency was the strongest predictor for the final model. This may be due to the fact that children with high activity tends to be less stable, less cooperative, more likely to interrupt peer relationship and be involved in peer conflict (Hong, 2001). They are also more likely to portray behavior problems that can lead to more serious socialization problems (Walker, Berthelsen, & Irving, 2001). Moreover, this finding also partially corresponds to the findings of Rothbart and Bates (2007) who appointed children's shyness and activity level as strong and consistent related variables to children's physical aggression. The rest of the variables that predicted children's OA were interaction terms created. None of the mothers' reactions had direct influence on children's OA. This finding supports the evidence that children's temperament is more strongly related to children's OA than other environmental influences (Rothbart & Bates, 1998).

In multiple regression, if β of the interaction term is positive, it indicates the positive relationship between interaction term and the outcome variable. That is, the relationship between the predictor and outcome variable is strengthened by addition of a third variable. If β of the interaction term is negative, then it indicates the negative relationship between interaction term and the outcome variable.

Therefore, the relationship between independent and outcome variable becomes opposite by addition of a third variable.

The Mod Graph software package was used to further visualize and interpret interaction (Jose, 2008). This program is built based on the technique of interpreting interaction of continuous independent variables proposed by Aiken and West (1991). The effect of mothers' reactions variables on outcome variables are estimated at 1SD below the mean (low) at the mean (medium) and 1SD above the mean (high) on the temperament variables (see Figures 1 to 3).

Table 13*Hierarchical Regression Model Predicting Children's Overt Aggression (n=317)*

Predictors	Model 1		Model 2		Model 3		Model 4	
	B	β	B	β	B	β	B	β
Intercept	.06		.06		.06		.04	
Gender	-.11	-.32***	-.10	-.31***	-.09	-.28***	-.10	-.29***
Age	.00	.20***	.00	.19***	.00	.19***	.00	.20***
Restrictive Reaction			.03	.12*	.02	.08	.02	.09
Responsive Reaction			-.03	-.08	-.03	-.09	-.03	-.08
Surgency					.06	.23***	.07	.27***
Effortful Control					-.01	-.05	-.02	-.08
Negative Affectivity					.01	.04	.01	.02
Restrictive Reaction								
x Surgency							.07	.18***
x Effortful Control							-.06	-.13***
Responsive Reaction								
x Surgency							.07	.16**
F	27.10***		16.87***		15.15***		12.64***	
R^2	.15		.17		.23		.27	
ΔR^2	.15		.03		.05		.04	
Adj. R^2	.14		.17		.21		.25	

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

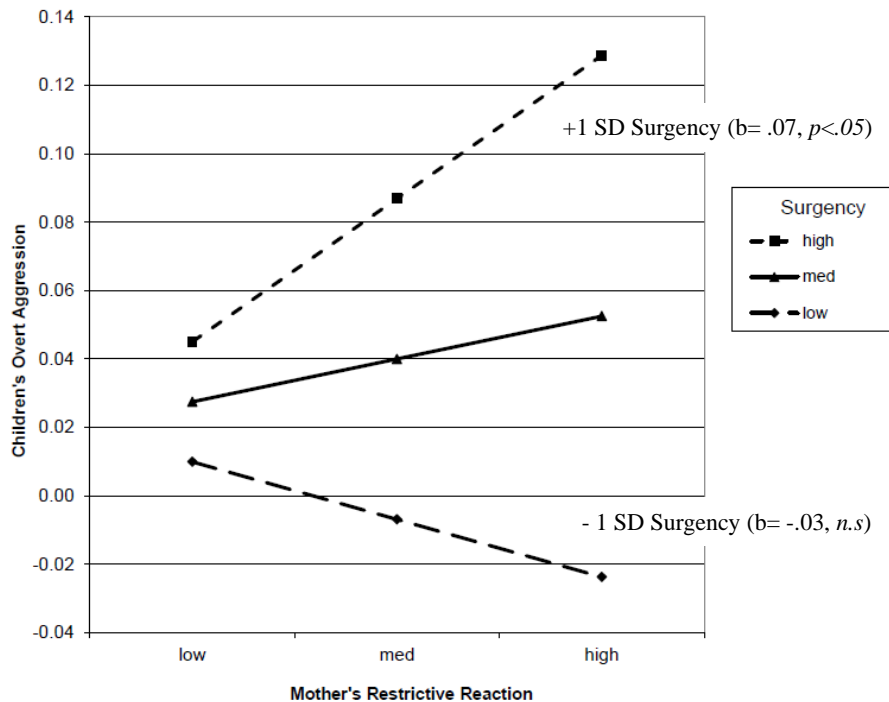


Figure 3

Interaction between mothers' restrictive reaction and children's surgency predicting overt aggression. Simple slopes are unstandardized regression coefficients.

Children's surgency interacted with mothers' restrictive reaction to predict children's OA (Figure 3). The association between mothers' restrictive reaction and children's OA varied according to the level of children's surgency. For children with high scores on surgency, mothers' restrictive reaction increased children's OA. The high levels of surgency amplified the relationship between mothers' restrictive reaction and children's OA. This finding corresponds to the results of previous studies, which found the interaction effect of punitive, negative, and hostile parenting styles and children's difficult temperament on children's aggressive, problematic and externalizing behaviors (Nelson et al., 2006). For children with low scores on surgency, the relationship between mothers' restrictive reaction and children's OA was negative. These children exhibited lower level of OA when exposed to mothers' restrictive reactions.

Moreover, it appeared that mothers' restrictive reaction was more strongly related to children's OA for children who scored high on

surgency than those scored low on surgency (see Figure 1). This result demonstrates that children characterized by high scores on surgency may be more vulnerable to punitive style of mothers' reaction in developing OA.

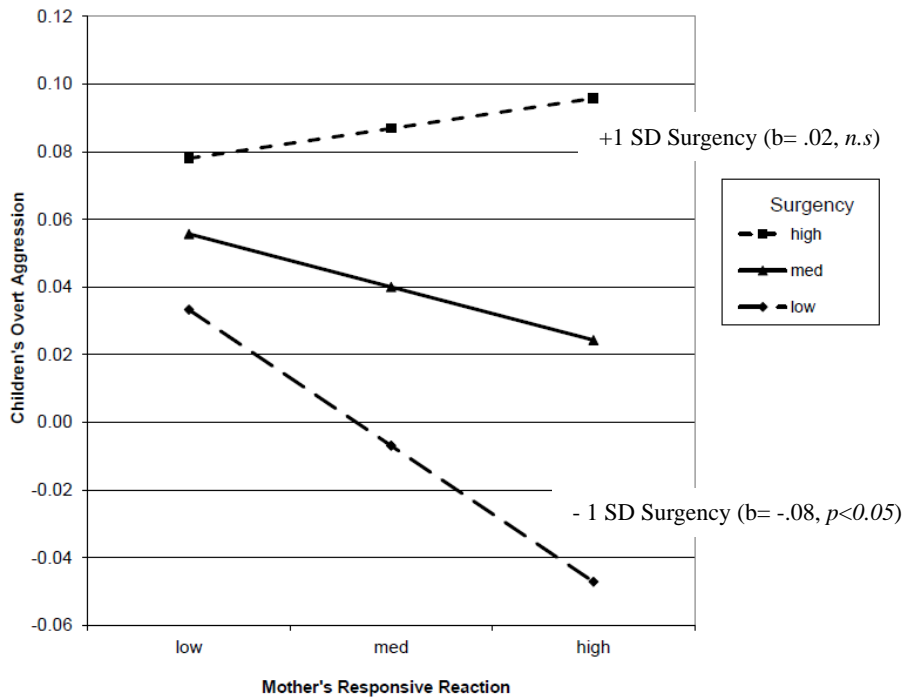


Figure 4

Interaction between mothers' responsive reaction and children's surgency predicting overt aggression. Simple slopes are unstandardized regression coefficients.

Interaction of children's surgency and mothers' responsive reaction significantly predicted children's OA (Figure 4). For children with low scores on surgency, mothers' responsive reaction was negatively associated with children's concurrent OA. For children with high scores on surgency, the negative association between mothers' responsive reaction and children's aggression became positive. In addition, mothers' responsive reaction was more strongly associated with children's OA for children who scored low on surgency, than children who scored high on surgency.

Overall, children's surgency interacted with both mothers' restrictive and responsive reaction in similar pattern in predicting concurrent OA. Both types of mothers' reactions increased children's

OA for children with high scores on surgency and decreased for those with low scores on surgency.

However, the strength of the association between mothers' reactions and OA varied according to the levels of children's surgency. Mothers' restrictive reaction was more strongly related to OA for children with high scores on surgency than for children with low scores on surgency. Mothers' responsive reaction was more strongly related to OA for children with low scores on surgency than for children with high scores on surgency. This result is somewhat contrary to notion that children with difficult temperament style are vulnerable to both positive and negative parenting styles (Belsky, 1997). However, the findings provides important information that it would be more optimal for mothers of children with low and high scores on surgency to exhibit responsive reaction than restrictive reaction to children's OA . It also suggests that such reaction would be more effective for children with low scores on surgency.

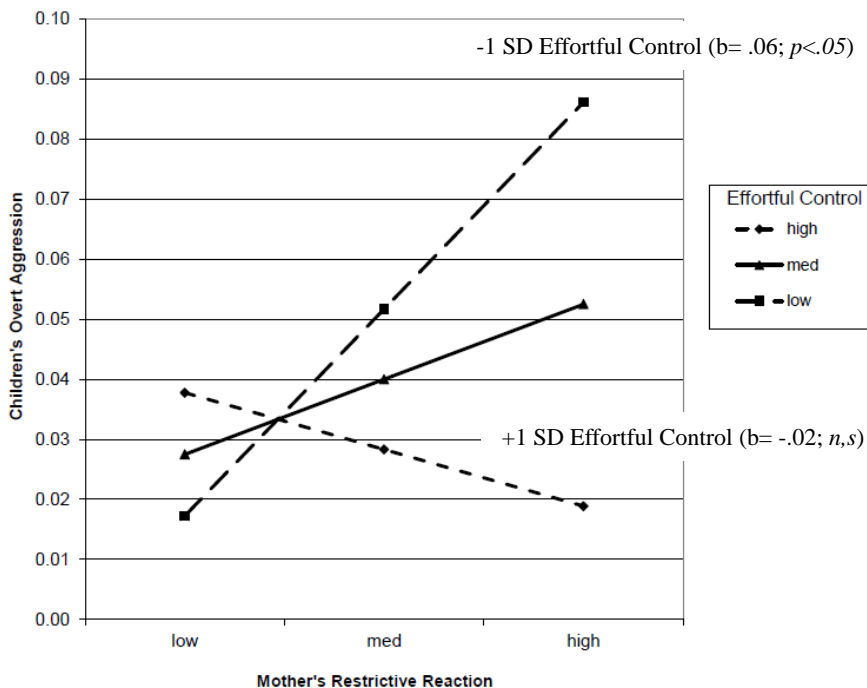


Figure 5
Interaction between mothers' restrictive reaction and children's effortful control predicting overt aggression. Simple slopes are unstandardized regression coefficients.

Children's effortful control interacted with mothers' restrictive reaction to predict children's OA (see Figure 5). For children with high scores on effortful control, as mothers' restrictive reaction increased, children's concurrent OA decreased. Children who scored low on effortful control and were exposed to mothers' restrictive reactions showed elevated levels of OA. These results support the findings of prior study that showed stronger association between maternal hostility and child externalizing problems among children with low levels of effortful control than high levels of effortful control (Morris et al., 2002). Similar results were found by another study, which showed that poor self-regulation at age two predicted greater extent of externalizing behavior at age four when mothers were more intrusive and hostile (Rubin et al., 2003).

The findings of present study adds to prior evidence by showing that mothers' restrictive reaction is more strongly associated with children's OA for children with low scores on effortful control than those with high scores on effortful control. Since children with high scores on effortful control are able to control and regulate their emotion better than those with low scores on effortful control, they are less likely to be affected by their mothers' negative reactions. Supporting the evidence of prior studies, findings of the present study imply that children with low levels of effortful control are more vulnerable to mothers' punitive reactions than those with high levels of effortful control.

3) Mothers' Reactions, Children's Temperament and Children's Relational Aggression

To investigate the relationship between mothers' reactions, children's temperament and children's RA, correlation and hierarchical multiple regression were conducted.

Correlation of mothers' reactions to hypothetical vignettes of relational aggression (HVRA), children's temperament, and children's relational aggression (RA)

Pearson product-moment correlation coefficient was computed to assess the relationship between the three subscales of temperament, two types of mothers' reactions and children's RA (Table 14). There were few low to modest but significant correlations in the data. Children's surgency ($r=.18$, $p<.01$) was positively correlated to children's RA. Among the relationship between dimensions of children's temperament and subsets of mothers' reactions, children's negative affectivity was weakly but significantly correlated to mothers' restrictive reaction ($r=.13$, $p<.05$). In addition, children's effortful control was correlated to all forms of mothers' reaction. Children's effortful control was positively correlated to mothers' responsive reaction ($r=.40$, $p<.000$) and negatively correlated to mothers' restrictive reaction ($r=-.29$, $p<.000$). Such findings suggest that children's effortful control may play important role in predicting mothers' reactions to children's RA. For instance, mothers may exhibit restrictive reaction less for children with high scores on effortful control than those with low scores on effortful control. Significant correlations between children's temperament and mothers' reactions to HVRA suggests that differences in mothers' reactions toward children's RA may depend on children's characteristics.

Table 14

Correlation of Children's Temperament and Mothers' Reaction to HVRA and Children's RA (n=317)

	1	2	3	4	5	6
1. Relational Aggression	1					
2. Surgency	.18**	1				
3. Negative Affectivity	.05	-.08	1			
4. Effortful Control	-.03	.04	0	1		
5. Restrictive Reaction	.08	.1	.13*	-.29***	1	
6. Responsive Reaction	-.04	-.04	-.05	.40***	-.32***	1

** $p < .01$, *** $p < .001$

Hierarchical multiple regression for children's relational aggression

Hierarchical multiple regression was conducted to examine both additive and interactive effects of maternal reaction variables and children's temperament variables in predicting children's RA. Entering orders corresponds to the children's overt aggression model (see p. 46). As presented in Table 15, the independent contributions (main effects) of child's temperament and mothers' reaction were assessed before addressing the interactive contributions (multiplicative effects).

The results are presented in table 14¹¹. Following the step-down procedure proposed by Aiken and West (1991), all interaction terms were dropped from the model. When multiple regression was re-conducted excluding the interaction effects, the control variables (gender & age) significantly predicted children's RA ($F= 6.44$, $df=2$, 314 , $p <.001$, adjusted $R^2= .04$). When two variables of mothers' reactions were entered, the model remained significant but there was no change in R^2 ($F=3.58$, $df=4$, 312 , $p <.001$, adjusted $R^2= .004$). Children's temperament significantly improved the prediction of the model ($F=3.64$, $df= 7,309$, $p <.001$, adjusted $R^2=.03$). The final model predicted total of 8% of the variance in children's RA.

Children's surgency ($t=3.17$, $p<.05$; $\beta =.18$) significantly predicted children's RA. This result indicates that as children's levels of surgency increases, children's concurrent RA increases. This finding is somewhat contrary to those found by Russell et al. (2003). In their study, children's activity level did not predict children's RA significantly. However, the scale used in this study was different. For this study, only children's activity level was measured, which have lead the different finding of current study.

Results regarding the relative contributions of children's temperament, mothers' reactions, and interactive terms in predicting children's RA are different from the results of children's OA model. The relative contributions of mothers' reactions and children's characteristics on children's aggression differed by the aggression form.

¹¹ When non-significant interaction effects were dropped in order following the step-down procedures, all interaction effects became non-significant in the final model (Finney, Mitchell, Cronkite, & Moos, 1984; Aiken & West, 1991).

Table 15*Hierarchical Regression Model Predicting Children's Relational Aggression (n=317)*

Predictors	Model 1		Model 2		Model 3	
	B	β	B	β	B	β
Intercept	.09		.09		.09	
Gender	-.03	-.08	-.03	-.07	-.02	-.06
Age	.03	.18**	.00	.18**	.00	.18**
Restrictive Reaction			.02	.06	.01	.04
Responsive Reaction			.00	-.01	.00	-.01
Surgency					.04	.18***
Negative Affectivity					.01	.06
Effortful Control					.00	-.01
F	6.44**		3.58**		3.64**	
R^2	.04		.04		.08	
ΔR^2	.04		.00		.03	
Adj. R^2	.03		.03		.06	

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

VI. DISCUSSION

1. Conclusion

The main purpose of current research was to examine additive and interactive effects of mothers' reactions and children's temperament on children's OA and RA.

The first research question examined whether 3- to 6-year-old children's aggression differ according to gender. Moreover, this study tested the hypothesis that mothers' reactions would have both additive and interactive effects on children' OA and RA. Contrary to the assumption, children's surgency was the only significant predictor for both OA and RA. Mothers' reactions were not directly related to children's OA and RA. In other words, only surgency had a main effect on children's aggression. In addition, the interactive effects of mothers' reactions and children's temperament significantly predicted children's OA. Such results indicate that children differ in risk for developing OA and RA. The findings of present study also demonstrated that the effects of mothers' reactions on children's OA differed depending on children's individual characteristics.

1) Gender differences in Children's Aggression

The aim of the first research question was to replicate and contribute to the controversial findings of previous studies regarding gender issues related to children's OA and RA. The present data provides additional support ,that while OA is more prevalent among 3- to 6-year-old boys (Crick et al., 1997; McNeilly-Choque et al., 1996; Ostrov & Keating, 2004), there is no gender difference for RA (Choi, 2009; Hart et al. 1998). However, this finding does not support other previous evidence, which showed girls to be more relationally aggressive than boys (Bonica et al., 2003; Crick & Grotpeter, 1995; Crick et al., 1997).

The followings are possible reasons to why gender difference of children's RA did not appear for the present study. n. As Crain, Finch and Foster (2005) mentioned, unlike older children, RA may not be so differentiated aggression type for children in young age. Compared to adolescents, it is more likely that young children who show high levels of OA may also be engaged in RA. To verify if this assumption is true for the subjects of present study, correlation for OA and RA of the current study's subjects were conducted. The OA and RA scores of present study's subjects were highly associated. Then, why was gender difference for aggression only significant for OA? This may be due to the fact that high association between children's OA and RA may apply more to girls than boys. In other words, it is possible that compared to the boys who portray OA, girls who portray OA are more likely to be also engaged in RA. Thus, even if girls are relatively less likely to be overtly aggressive than boys, more girls may be engaged in both OA and RA than boys.

Another reason may be due to the choice of measurement tool. For this study, teachers assessed children's aggression. Even with evidence of adequate reliability and validity of this scale (Zelli, Dodge, Lochman, Laird & Conduct Research Group, 1999), RA still may be a form of aggression that has a tendency to be ignored due to its nature of construct. Assessing RA requires teachers to observe more sophisticated forms of children's behavior such as facial expression or behaviors that hurt others emotionally. Therefore, it is very likely that children who receive more attention from teachers to be detected as portraying relationally aggressive acts than those who rarely receive attention. As teachers are more likely to be attentive to children who portray observable problematic behaviors (e.g., physical aggression), children who are physically aggressive have higher chances for being pointed as engaged in relationally aggressive. Since boys are more likely to be involved in observable behavior, teachers should be more attentive to boys' behavior than girls. Therefore, boys' RA may be more recognizable to teachers than girls' RA. Thus, even if it was true that girls are more relationally aggressive, because teachers spend more time observing boys, RA portrayed by girls may easily have been ignored.

The finding of the study is useful as it still implicates to other previous studies that reported different result. In addition, further analysis for the study was conducted based on the result of the first research question. For hierarchical multiple analysis in the later part of the research, gender is used as a control variable.

2) Relationship Between Mothers' Reactions, Children's Temperament, and Aggression

Findings of the present study revealed that surgency was positively associated with both OA and RA. In addition, while mothers' restrictive reaction was positively related to OA, children's effortful control and mothers' responsive reaction were negatively associated with OA.

One important finding of the present study was that surgency was associated with both children's OA and RA. Children with high levels of surgency are highly active. They can be characterized as children who constantly explore their environment while disregarding rules and regulations (Berdan, Keane & Calkins, 2008). As they enjoy high stimulus intensity, they may be more engaged in active form of play activities that involve more active (e.g., dangerous) interactions with peers and attention from teachers. Since they enjoy being with their friends and are more interested in receiving attention (be 'center' of the group) from their peers, it is highly likely that they are involved in peer conflicts more than those who are low in surgency. Moreover, children with high surgency are also known to have difficulty in regulating their distress when faced with disappointment and to use aggressive strategies to overcome such barriers (Rothbart & Putnam, 2002). As a result, these children have a higher potential to use aggression as ways to reveal their discomforts (Fabes, & Eisenberg, 1992). The finding of the present study is valuable as it suggests that children's surgency is not only associated with OA, but also with RA. As the association between temperament and children's RA was not reviewed largely by prior studies, this finding should contribute to the understand of young children's RA.

Prior research has indicated that children's ability to flexibly inhibit impulsive action may play a central role in the development and

persistence of disruptive behavior disorders (Barkely, 1997; Moffitt, 2003). The findings of the present study regarding the association between effortful control and OA also support this result. The present study showed that children with capacity to inhibit a dominant response and initiate a subdominant response were less likely to be overtly aggressive (Eisenberg et al., 2001). Interpreted in another way, children who portray OA are less likely to possess the ability for self-regulation and self-control than those who do not portray OA.

The present study revealed that negative affectivity was not associated with OA and RA. This is contrary to the findings of prior studies, which report positive relationship between negative affectivity and aggression (Gilliom & Shaw, 2004; Karreman et al., 2010; Morris et al., 2004; Terranova, Morris, & Boxer, 2008). Such different findings may be due to the construct of the scale used to measure children's temperament. Negative affectivity was one of the three dimensions of temperament explored in the study. It was formed based on diverse constructs with high factor loadings of sadness, fear, anger/frustration, discomfort, and falling reactivity. However, in prior studies, only individual or combinations of subscales (e.g., irritability, & fear; Lengua, 2006) of negative affectivity were analyzed to examine its association to children's aggression. For instance, while fear and anger was found to be strongly related to children's aggression (Bates, & Pettit, 2007), not many have examined how young children's sadness or discomfort were related to their levels of aggression. Therefore, the present study used a scale that covered a broader concept of negative affectivity, to clarify if the total scores of children's sadness, fear, anger/frustration, discomfort and soothability are associated with OA and RA. Unfortunately, the findings proved that negative affectivity was not significantly associated with OA and RA. The finding of the current study suggests that it may be more opt to investigate individual subsets of negative affectivity when examining the association between children's negative affectivity and children's aggression.

Both mothers' restrictive and responsive reactions were positively and negatively associated with children's OA, respectively. While the findings are partially supported by literature which have shown that parents' use of high power assertion is associated with increased physical aggression (e.g., Deater-Deckard, & Dodge, 1997),

it is also contrary to the finding of Werner et al. (2006). In their study, children of mothers who proposed strategies higher in power assertion were judged as less physically aggressive by teachers. Moreover, teachers judged children of mothers who proposed strategies lower in rule violation (i.e., communicating clearly that a rule had been violated) as more relationally aggressive.

The different results regarding the association between mothers' power assertion and children's OA may be due to the different measurement tool used to measure mothers' reactions. Werner et al. (2006) measured mothers' responses toward hypothetical vignettes of children's aggression using a short-answer questionnaire (coded responses). Therefore, the finding of Werner et al. (2006) was not scale-driven. Thus, it may be important to review the scale items in detail before making any judgments and conclusions regarding the association between mothers' reactions and children's aggression.

Moreover, none of the mothers' reactions were significantly related to children's RA. Previous literatures have shown that mothers showed fewer attempts to change children's relational aggressive behavior (Werner et al., 2006). They also attributed less hurtfulness and less responsibility for children engaged in RA (Senich, 2006) than those engaged in OA. Only 62% of mothers said that they would intervene for RA conflicts while 92% of mothers would intervene for physical aggression conflicts (Werner et al., 2006). Since mothers consider children's RA as less problematic than OA, they are less likely to react restrictively or responsively to children's RA and OA.

This finding can be also interpreted in another perspective. Compared to OA, ways in which mothers react to children's RA may depend less on their children's RA level. Prior researches have suggested that mothers' intensity to intervene and the types of strategies used in the intervention may depend on children's actual level of aggression (Werner et al., 2006). For example, mothers are more likely to show hostile and negative emotions, and to intervene more with high power assertion for children who are frequently engaged in OA (Werner et al., 2006). However, such interpretation may not be applicable in explaining the association between mothers' reactions and children's RA. Even if children are engaged in RA, mothers are less likely to recognize these behaviors as problematic. Therefore, mothers are less

likely to react and to intervene when their children's portray RA.

3) Additive Effects of Mothers' Reactions and Children's Temperament on Children's Aggression

Contrary to the prediction of the study, mothers' reactions to children did not have main effects on both forms of children's concurrent aggression. Children's surgency was the only predictor that had a main effect on both form of children's aggression. The result regarding the main effect of children's surgency on children's OA corresponds to the findings of prior studies, which showed positive association between difficult temperament styles¹² and children's aggression (Thomas et al., 1963; Rothbart et al., 1994). Moreover, the findings also correspond to the notion that temperament uniquely predicts maladjustments, and children's temperament is more strongly related to children's aggression than parenting behaviors (Rothbart & Bates, 1998). The positive influence of children's surgency on children's RA is somewhat new.

It is important to note that the effect of surgery on children's aggression was a unique effect after controlling for the mothers' variables and other temperamental variables. Since no other dimensions of temperament or mothers' reactions directly affected aggression, there were no additive effects in predicting children's aggression. However, with evidence of surgency predicting children's OA highlights the importance of examining the independent effect of predictors when explaining children's aggression.

The finding of present study suggests that children's temperament operate as a diathesis, placing an individual to perpetrate aggression under conditions of stress. Moreover, it also suggests the possibilities of children's temperament shaping individual's environment or experiences. That is, children with certain characteristics may be more likely to bias their information processing which in turn affects their behavior. The present study also revealed that children's surgency positively predicted children's RA. Because

¹² Children with difficult temperament styles have high levels of impulsivity, activity, sensitivity, inflexible reactions, and are more likely to be intense, easily distracted and adapt slowly to change.

this study is among the few to document surgency as a predictor that positively influence children's RA, replication of this finding is important. If the positive effect is replicated, future research should examine the mechanisms that explain this positive effect.

4) Interactive Effects of Mothers' Reactions and Children's Temperament on Children's Aggression

Investigation of interactive effects on children's aggression suggests that some of the effects of mothers' behavior on children's aggression may depend on child temperament characteristics. Identifying interactive effects that predict children's aggression allow one to differentiate those children most strongly affected by mothers' reactions from those who are not. Out of six interactions between the three temperament and two types of reactions proposed, three interaction terms (Restrictive x Surgency, Responsive x Surgency and Restrictive x Effortful control) predicted children's OA. None of these predicted children's RA.

Surgency and effortful control moderated the relations between mothers' restrictive reaction and children's OA. Children with high scores on surgency were more vulnerable to the effects of mothers' restrictive reaction on children's OA. High levels of effortful control appeared to operate as a protective factor, buffering the impact of mothers' restrictive reaction. Such findings are evidenced in prior studies, which showed that children with difficult temperament are more vulnerable to negative forms of mothers' reactions. Children with low scores on surgency and high scores on effortful control may be better at focusing on positive affect in the presence of mothers' negative reactions. They may have more positive interactions or supportive relationships with others that might further mitigate the impact of mothers' hostility or criticism for their misbehavior. Moreover, because children with high levels of surgency and low levels of effortful control have difficulty regulating their emotions and behaviors on their own, mothers' reactions may play a particularly important role in facilitating their self-regulation. However, with mothers reacting to children's problematic behavior with high hostility and criticism, it is less likely that children learn such socialization skills from their mothers.

Surgency also moderated the effects of mothers' responsive reaction on children's OA. However, mothers' responsive reaction was more strongly related to children who scored low on surgency than those scored high on surgency. In other words, low levels of surgency strengthened the effect of mothers' responsive reaction on children's OA. Since children with low scores on surgency are more likely to focus, self-regulate, less likely to be vulnerable to negative parenting, simply telling the children that their behavior was unacceptable (with less power assertion) was effective enough. It is also important to note that although the association between mothers' responsive reaction and OA was positive for children with high levels of surgency, this association was not as strong as the association between mothers' restrictive reaction and OA. Such results suggest that even for children with high surgency, mothers' responsive reaction was less likely to increase children's overt aggression than mothers' restrictive response would.

Findings of the present study suggest that children with different personality characteristics may learn different things in apparently identical situations. For children with high scores on surgency and/or low scores on effortful control, mothers' restrictive reaction may be performed as an example in reacting to other's unacceptable behaviors. Because children with such characteristics are in favor of high stimulating responses, it is possible that they unconsciously adapt and learn from their mothers' negative behaviors. By observing negative reactions (e.g., hostility, criticism and blaming) they may implicitly developed false understandings that it is acceptable to behave in similar ways as their mothers. As a result, rather than recognizing mothers' underlying message that their behavior was unacceptable, these children may eventually learn to mimic their mothers' reactions.

Moreover, individual differences in sensitivity to reward and punishments may lead to different learned reactions to objectively identical social reinforcement (Gray, 1982, 1987, 1991). For children with high scores on surgency and low effortful control, mothers' negative reaction are less likely to inhibit undesirable behavior as they may have already provoked similar responses from parents, teachers, peers and their environment repeatedly in the past years. In other words,

mothers' restrictive reaction may have become less effective for these children. For children with low scores on surgency, mothers' warning about their unacceptable behavior is more likely to inhibit future performance of the act, because these children are not used to mothers' hostile and negative reactions. Thus, they remember the negative consequences of their actions (that their mother was not happy with their behavior) and try to avoid engaging in similar behaviors.

Contrary to previous assumption, none of the interaction terms predicted children's RA. This means that neither of the mothers' restrictive or responsive responses interacted with children's surgency, effortful control and negative affectivity to predict children's RA. Such findings suggest that the cause of children's RA differ from children's OA. Therefore, future studies are recommended to explore other possible predictors of children's RA.

In conclusion, the present study reveals that relative contributions of children's temperament and mothers' reactions differed according to types of aggression. The main effects of children's surgency on both OA and RA demonstrated the importance of children's characteristics in explaining children's aggression. Moreover, the interactive effect of mothers' reactions and children's temperament suggest that integrating the effects of differences in children's individuality and mothers' reactions to children's aggression can improve our understanding of children's OA development.

2. Limitations

There were few limitations in this study. The first is related to measurement tool used for the study. For the present study, MRCA was developed to measure mothers' reactions to hypothetical vignettes of children's OA and RA. Since the scale was developed particularly for the present study, its validity and reliability is not yet certain. To overcome this issue, confirmatory factor analysis was conducted (see preliminarily analysis in p. 39) and Cronbach's alpha was computed for each types of reaction. The reliability and validity of the scale was acceptable. However, for more assurance, further studies are needed to

test for reliability and validity of the scale using different samples and methodologies.

The second issue is related to measurement. The study relied exclusively on surveys to assess children's aggression and mothers' reactions. This methodology was used because it was convenient and was mainly used in previous studies. In fact, the reliability and validity of teacher assessments of children's aggression are evidenced (Crick, 1996; Crick & Grotpeter, 1995; Grotpeter & Crick, 1996). Other studies have also shown moderate to high correlations between peer and teacher ratings of both children's OA and RA (Coie & Dodge, 1988; Crick, 1996). Moreover, studies of mothers' social cognition and direct responses and strategies to children's misbehavior exclusively used hypothetical episodes for the assessments (Rubin et al., 1990; Werner et al., 2006; Senich, 2006). However, different findings may result if other methods are implemented. Therefore, more studies that examine the variables observed in this study should be conducted using different methodologies (e.g., observation)

A final limitation includes the composition of the samples. Samples of this research included mothers in low middle class families living in Busan, Seoul, and Kyungi province of the Republic of Korea. There are still limitations to generalize the findings of present study to all populations in Korea. In addition, other studies have noted differences in mothers' social cognition (that may influence mothers' reactions) depending on mothers' education level and family income. Moreover, children's age may also alter mothers' social cognition. Future studies should take these variables into consideration. Since children's RA tend to increase and cause more serious problems among older children, mothers of adolescents may elicit different patterns of reactions compared to mothers of younger children. Thus, the effects of mothers' reactions on adolescents' RA may differ from the findings of the present study. To overcome such limitations, future studies should be conducted in this area.

3. Implications

Despite these limitations, this study illustrates some important points regarding the relationship between young children's gender, mothers' reactions to children's aggression, and children's temperament in relation to their OA and RA.

First, this study provides additional evidence for the validity of RA as a unique form of children's aggression. Findings suggest that both RA and OA appear in young ages. While OA is more apparent for boys, RA is apparent for both genders. Moreover, three to six-year-old children displayed more RA than OA. Such findings undermine two common myths that girls are not aggressive and that RA is related to older children.

Second, this study adds to the limited amount of research studying the interactive effects of predictors on children's development. The study provides information regarding the relationship between mothers' reactions to children's aggression, and children's temperament and children's concurrent OA and RA. The present study was the first study to provide findings regarding the additive and interactive effects of children's temperament and mothers' reactions on children's aggression. Although mothers' reactions did not show main effects on children's OA and RA, interactive effects were found. Such results suggest that there may be important variables other than children's temperament that may interact with mothers' reactions to predict children's aggression. Therefore, the evidence of the present research suggests future research to consider both the main and interactive effects of predictors of children's development.

Third, the integrating effects of children's individual differences with effects of mothers' reactions should bring important implications for developing intervention programs or parent training programs. During the interview with teachers, a researcher gained information that a surprising number of mothers were not aware of how to respond to children's aggression when they actually encounter the situation. Mothers' use of hostile and punitive forms of strategies against children's OA may be due to their aim to stop children's behaviors. However, it may be also because they simply do not know

how to response in a more efficient manner. In this sense, the research findings provides new information that it is recommended for mothers to consider the characteristics of their children when responding to actual conflict situations.

4. Suggestions for Future Research

Future research should attempt to replicate past findings of gender differences regarding the additive and interactive effects of mothers' influence and children's characteristics on children's OA and RA. Prior research related to the effect of mothers' indirect influence and children's temperament on children's aggression have documented that mothers' behaviors and children's temperament predicted aggression differently according to gender. For the current study, gender was entered as a control variable in the hierarchical regression model. Therefore, it did not provide detail information on how the relative contributions of predictive variables on children's aggression differ according to gender. Since gender appeared to be significant for predicting children's OA, it is assumed that the mothers' reactions and children's temperament directly or indirectly predict children's OA differently for boys and girls.

In addition, the present study examined three broad dimensions of children's temperament, which include many subsets of children's individual characteristics. Future research should consider the interaction effect of mothers' reactions with more specific types of children's temperament. Findings of such studies should provide more sophisticated and detail information on which specific temperament style really interact with mothers' reactions to predict children's aggression.

Lastly, more studies should work on developing valid and reliable scales for measuring mothers' reactions to children's problematic behaviors. There may be other ways mothers can react to children's aggression, which were not covered in this study (e.g., no response). In addition, mothers can react differently to other forms of children's aggression (e.g. reactive and proactive aggression). It is

recommended that future research also consider these areas. Since mothers' reactions interacted with children's characteristics to predict children's aggression, other forms of children's misbehavior can be also influenced by mothers' reactions to that specific form of behaviors. Thus, more studies aiming to develop scale for measuring mothers' direct influence on children's development must be conducted.

In summary, the current study demonstrates importance of studying mothers' direct influence on children's aggression. Previous studies have only focused on examining mothers' indirect influence on children's aggression, heavily focusing on overt form of aggression. The present study indicates different predictors that predict children's OA and RA. Children's concurrent OA was more likely to be predicted by combined effects of mothers' reactions and individual's characteristics. Since the present study was the first study to examine the additive and interactive effects of mothers' reactions and children's temperament on children's aggression, findings should be considered as introductory information that recommend future studies to be conducted in this area.

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Appendix 1

일련 번호

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어머니 질문지

안녕하세요?

이 조사에 협조해 주신 여러분께 감사의 말씀을 드립니다.

저는 서울대학교 아동가족학과 석사과정에 재학중인 조혜정 입니다. 제 석사논문에 사용될 자료를 얻고자 이 질문지를 드립니다.

이 질문지는 유아의 사회적 행동, 유아의 기질, 유아의 행동에 대한 어머니의 생각과 태도를 살펴보기 위해 작성되었습니다. 모든 문항에는 정답이 없으므로 어머니께서 생각하시고 느끼시는 대로 응답해주시면 됩니다. 반복되는 문항이 있습니다. 지루하시더라도 네 가지 이야기를 모두 주의 깊게 읽으시고 각 문항에 솔직하고 정확한 답변을 해 주시면 감사하겠습니다. 한 문항도 빠짐없이 솔직하게 응답해 주시기를 부탁 드립니다.

여러분이 응답한 내용은 다른 사람들이 알 수 없으며 연구의 자료로서 통계수치로만 발표될 것입니다. 응답의 내용은 전적으로 연구 목적으로만 사용되며 절대 비밀이 보장됩니다.

바쁘신 중에 시간을 내어 설문에 응해주셔서 진심으로 감사합니다.

서울대학교 아동가족학과 아동학 연구실
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♣ 다음은 자녀의 기질에 관한 질문입니다. 문항을 잘 읽으시고 자녀의 행동과 가장 가까운 칸에 ○표 하세요.

1	2	3	4	5	6	7	8
전혀 아니다	상당히 아니다	어느 정도 아니다	반반이다	어느 정도 그렇다	상당히 그렇다	극히 그렇다	해당 없음

문 항	내 아이는...	1	2	3	4	5	6	7	8
1	한 곳에서 다른 곳으로 이동할 때마다 항상 급하게 서두르는 편이다.	1	2	3	4	5	6	7	8
2	하고자 하는 것을 못하게 될 때 상당히 좌절한다.	1	2	3	4	5	6	7	8
3	그림을 그리거나 색칠놀이를 할 때 늘 매우 집중해서 한다.	1	2	3	4	5	6	7	8
4	높은 미끄럼틀에서 내려가는 활동 등 그 외의 모험적인 활동들을 좋아한다.	1	2	3	4	5	6	7	8
5	약간 베이거나 땅이 들어도 상당히 속상해한다.	1	2	3	4	5	6	7	8
6	외출을 할 때 필요한 것에 대해 계획을 세워서 준비한다.	1	2	3	4	5	6	7	8
7	보통 생각하지 않고 새로운 상황으로 행동을 옮기곤 한다.	1	2	3	4	5	6	7	8
8	가족이 함께 하는 일이 예정대로 되지 않으면 슬퍼하는 경향이 있다.	1	2	3	4	5	6	7	8
9	노래를 불러주면 좋아한다.	1	2	3	4	5	6	7	8
10	어떤 사람과도 편안하게 잘 지내는 것으로 보인다.	1	2	3	4	5	6	7	8
11	인상이 험한 사람을 무서워한다.	1	2	3	4	5	6	7	8
12	부모가 새 옷을 입을 때 새 옷을 알아챈다.	1	2	3	4	5	6	7	8
13	활동적인 게임들보다 조용한 활동을 더 선호하는 편이다.	1	2	3	4	5	6	7	8
14	화가 나면 10 분 이상 지속되는 편이다.	1	2	3	4	5	6	7	8
15	쌓기 놀이나 맞추기 놀이를 할 때 매우 집중하여 오랫동안 놀이를 한다.	1	2	3	4	5	6	7	8

16	그네를 밀어줄 때 높고 빠르게 밀어주는 것을 좋아한다.	1	2	3	4	5	6	7	8
17	어떤 과업이 성취될 수 없을 때 우울해 하는 모습을 보인다.	1	2	3	4	5	6	7	8
18	지시에 잘 따른다.	1	2	3	4	5	6	7	8
19	새로운 상황에 접근하려면 오랜 시간이 걸린다.	1	2	3	4	5	6	7	8
20	감기에 걸려 아플 때도 불평하지 않는다.	1	2	3	4	5	6	7	8
21	따뜻한 물에 들어가 목욕하는 것을 좋아한다.	1	2	3	4	5	6	7	8
22	오랫동안 알고 지냈던 사람들 앞에서든 때때로 부끄러워한다.	1	2	3	4	5	6	7	8
23	화가 났을 때 달래기가 매우 어렵다.	1	2	3	4	5	6	7	8
24	거실에 새로 놓은 물건을 금방 알아챈다.	1	2	3	4	5	6	7	8
25	저녁시간까지도 활력이 넘친다.	1	2	3	4	5	6	7	8
26	어두운 것을 무서워하지 않는다.	1	2	3	4	5	6	7	8
27	그림책을 볼 때 때때로 매우 집중하고 오랫동안 본다.	1	2	3	4	5	6	7	8
28	거칠고 소란스러운 게임을 좋아한다.	1	2	3	4	5	6	7	8
29	조금 다쳐도 많이 화내지 않는 편이다.	1	2	3	4	5	6	7	8
30	위험하다고 주의를 준 장소에는 천천히 그리고 조심스럽게 접근한다.	1	2	3	4	5	6	7	8
31	다음에 할 일을 결정할 때에 서두르지 않고 천천히 한다.	1	2	3	4	5	6	7	8
32	가지고 놀고 싶은 장난감을 찾지 못하면 화가 난다.	1	2	3	4	5	6	7	8
33	흔들리는 것과 같은 가벼운 리듬 타는 활동을 좋아한다.	1	2	3	4	5	6	7	8
34	새로운 사람을 만나면 간혹 수줍어 한다.	1	2	3	4	5	6	7	8
35	좋아하는 친척이나 친구가 집에 놀러 왔다가 돌아갈 준비를 할 때 섭섭해 한다.	1	2	3	4	5	6	7	8
36	부모가 외모에 변화를 주면 알아채고 의견을 말한다.	1	2	3	4	5	6	7	8

**- English Version –
(Mothers' Survey on Children's Temperament)**

1	2	3	4	5	6	7	8
Extremely untrue	Quite untrue	Slightly untrue	Neither true nor false	Slightly true	Quite true	Extremely true	Not applicable

Q	My child...	1	2	3	4	5	6	7	8
1	Seems always in a big hurry to get from one place to another.	1	2	3	4	5	6	7	8
2	Gets quite frustrated when prevented from doing something s/he wants to do.	1	2	3	4	5	6	7	8
3	When drawing or coloring in a book, shows strong concentration.	1	2	3	4	5	6	7	8
4	Likes going down high slides or other adventurous activities.	1	2	3	4	5	6	7	8
5	Is quite upset by a little cut or bruise.	1	2	3	4	5	6	7	8
6	Prepares for trips and outings by planning things s/he will need.	1	2	3	4	5	6	7	8
7	Often rushes into new situations.	1	2	3	4	5	6	7	8
8	Tends to become sad if the family's plans don't work out.	1	2	3	4	5	6	7	8
9	Likes being sung to.	1	2	3	4	5	6	7	8
10	Seems to be at ease with almost any person.	1	2	3	4	5	6	7	8
11	Is afraid of burglars or the "boogie man"	1	2	3	4	5	6	7	8
12	Notices it when parents are wearing new clothing.	1	2	3	4	5	6	7	8
13	Prefers quiet activities to active games .	1	2	3	4	5	6	7	8
14	When building or putting something together, becomes very involved in what he/she is doing, and works for long periods.	1	2	3	4	5	6	7	8
15	When building or putting something together, becomes very involved in what he/she is doing, and works for long periods.	1	2	3	4	5	6	7	8

16	Likes to go high and fast when pushed on a swing.	1	2	3	4	5	6	7	8
17	Seems to feel depressed when unable to accomplish some task.	1	2	3	4	5	6	7	8
18	Is good at following instructions.	1	2	3	4	5	6	7	8
19	Takes a long time in approaching new situations.	1	2	3	4	5	6	7	8
20	Hardly ever complains when ill with a cold.	1	2	3	4	5	6	7	8
21	Enjoys warm baths.	1	2	3	4	5	6	7	8
22	Is sometimes shy even around people he/she has known a long time.	1	2	3	4	5	6	7	8
23	Is very difficult to soothe when he/she has become upset.	1	2	3	4	5	6	7	8
24	Is quickly aware of some new item in the living room.	1	2	3	4	5	6	7	8
25	Is full of energy, even in the evening.	1	2	3	4	5	6	7	8
26	Is not afraid of the dark.	1	2	3	4	5	6	7	8
27	Sometimes becomes absorbed in a picture book and looks at it for a long time.	1	2	3	4	5	6	7	8
28	Likes rough and rowdy games.	1	2	3	4	5	6	7	8
29	Is not very upset at minor cuts or bruises.	1	2	3	4	5	6	7	8
30	Approaches places he/she has been told are dangerous slowly and cautiously.	1	2	3	4	5	6	7	8
31	Is slow and unhurried in deciding what to do next.	1	2	3	4	5	6	7	8
32	Gets angry when he/she can't find something s/he wants to play with.	1	2	3	4	5	6	7	8
33	Enjoys gentle rhythmic activities such as rocking or swaying.	1	2	3	4	5	6	7	8
34	Sometimes turns away shyly from new acquaintances.	1	2	3	4	5	6	7	8
35	Becomes upset when loved relatives or friends are getting ready to leave following a visit.	1	2	3	4	5	6	7	8
36	Comments when a parent has changed his/her appearance.	1	2	3	4	5	6	7	8

【이야기 #1】

근래에 친구들과 놀고 있는 아이를 데리러 간 일이 세 번 있었습니다. 그때마다 줄을 서서 이동하는 동안 아이가 앞서가는 친구들을 손으로 밀치고 어깨로 치는 것을 보았습니다.

* 자녀가 이런 행동(이야기#1)을 한다면, 자녀에게 어떤 말 또는 행동을 하시겠습니까? 다음 각 항목에 대한 어머니의 평소 말과 행동에 ○표 해주십시오.

문 항	질문 내용	매우 그렇지 않다	그렇지 않은 편이다	보통 이다	그런 편이다	매우 그렇다
1	아이의 잘못된 행동에 대해 구체적으로 설명해준다. (예. "친구를 밀치면 친구가 다치니깐 그렇게 하면 안되").	1	2	3	4	5
2	친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다.	1	2	3	4	5
3	우선 먼저 내 아이의 기분을 가라앉혀준다. (예. 잘못된 행동이라고 말 해주되 아이를 먼저 달래준다)	1	2	3	4	5
4	벌을 준다. (예. 손을 들고 서있게 한다)	1	2	3	4	5
5	"이렇게 행동하면 엄마한테 맞는다"라고 말한다.	1	2	3	4	5
6	아이가 놀이를 하지 못하도록 다른 곳으로 분리시킨다.	1	2	3	4	5
7	아이와 함께 친구 입장에서 생각해보고 친구의 기분과 마음을 이해할 수 있도록 도와준다. (예. "네가 친구에게 한 행동을 친구가 너에게 해도	1	2	3	4	5

	괜찮겠니?" 또는 "친구가 너를 때리면 너의 기분은 어떨까?")					
8	아이와 같이 놀면서 친구와 사이 좋게 지내는 방법을 알려준다.	1	2	3	4	5
9	아이의 감정을 읽어준다.	1	2	3	4	5
10	손으로 아이를 때린다.	1	2	3	4	5
11	그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다.	1	2	3	4	5
12	사건에 대해서 알기도 전에 친구에게 일단 사과하라고 말하도록 한다.	1	2	3	4	5
13	행동을 목격한 즉시 아이에게 가서 “안돼” 혹은 “하지마”라고 일방적으로 주의만 준다.	1	2	3	4	5
14	문제를 해결할 수 있도록 도와준다.	1	2	3	4	5
15	"또 왜 그러니?" 또는 "엄마가 하지 말라고 했어, 안했어?" 하며 아이의 행동에 대해 다그친다.	1	2	3	4	5
16	아이가 좋아하는 것을 안 준다고(못하게 한다고) 한다. (예. “너 자꾸 이러면 아이스크림 안 준다.”)	1	2	3	4	5

【이야기 #2】

근래에 친구들과 놀고 있는 아이를 데리러 간 일이 세 번 있었습니다. 그때마다 자녀가 다른 아이의 장난감을 뺏아 쥐고, 그 아이를 밀치는 것을 보았습니다.

* 자녀가 이런 행동(이야기#2)을 한다면, 자녀에게 어떤 말 또는 행동을 하시겠습니까? 다음 각 항목에 대한 어머니의 평소 말과 행동에 ○표 해주십시오.

문 항	질문 내용	매우 그렇지 않다	그렇지 않은 편이다	보통 이다	그런 편이다	매우 그렇다
1	아이의 잘못된 행동에 대해 구체적으로 설명해준다. (예. “친구를 밀치면 친구가 다치니깐 그렇게 하면 안되”)	1	2	3	4	5
2	친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다.	1	2	3	4	5
3	우선 먼저 내 아이의 기분을 가라앉혀준다. (예. 잘못된 행동이라고 말해주되 아이를 먼저 달래준다)	1	2	3	4	5
4	벌을 준다. (예. 손을 들고 서있게 한다)	1	2	3	4	5
5	"이렇게 행동하면 엄마한테 맞는다"라고 말한다.	1	2	3	4	5
6	아이가 놀이를 하지 못하도록 다른 곳으로 분리시킨다.	1	2	3	4	5
7	아이와 함께 친구 입장에서 생각해보고 친구의 기분과 마음을 이해할 수 있도록 도와준다. (예. 네 장난감을 친구가 빼앗으면 기분이 어떨까?)	1	2	3	4	5

8	아이와 같이 놀면서 친구와 사이 좋게 지내는 방법을 알려준다.	1	2	3	4	5
9	아이의 감정을 읽어준다.	1	2	3	4	5
10	손으로 아이를 때린다.	1	2	3	4	5
11	그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다.	1	2	3	4	5
12	사건에 대해서 알기도 전에 친구에게 일단 사과하라고 말하도록 한다.	1	2	3	4	5
13	행동을 목격한 즉시 아이에게 가서 “안돼” 혹은 “하지마” 라고 일방적으로 주의만 준다.	1	2	3	4	5
14	문제를 해결할 수 있도록 도와준다.	1	2	3	4	5
15	"또 왜 그러니?" 또는 "엄마가 그렇게 하지 말라고 했어, 안 했어?" 하며 아이의 행동에 대해 다그친다.	1	2	3	4	5
16	아이가 좋아하는 것을 안 준다고(못하게 한다고) 한다. (예. “너 자꾸 이러면 아이스크림 안 준다.”)	1	2	3	4	5

【이야기 #3】

근래에 바깥놀이 시간에 자녀를 데리러 간 일이 세 번 있었습니다. 그때마다 당신의 자녀는 같은 친구와 놀고 있었습니다. 그런데 다른 친구가 와서 같이 놀자고 여러 번 말해도 그 친구에게는 대답을 하지 않고 “우리 다른 놀이 하자!” 라고 말하며 같이 놀던 친구를 데리고 다른 장소로 이동하는 것을 보았습니다.

* 자녀가 이런 행동(이야기#3)을 한다면, 자녀에게 어떤 말 또는 행동을 하시겠습니까? 다음 각 항목에 대한 어머니의 평소 말과 행동에 ○표 해주십시오.

문 항	질문 내용	매우 그렇지 않다	그렇지 않은 편이다	보통 이다	그런 편이다	매우 그렇다
1	아이의 잘못된 행동에 대해 구체적으로 설명해준다. (예. "친구의 질문에 대답을 해야지 무시하면 친구가 속상해.")	1	2	3	4	5
2	친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다.	1	2	3	4	5
3	우선 먼저 내 아이의 기분을 가라앉혀준다. (예. 잘못된 행동이라고 말해주되 아이를 먼저 달래준다)	1	2	3	4	5
4	벌을 준다. (예. 손을 들고 서있게 한다)	1	2	3	4	5
5	"이렇게 행동하면 엄마한테 맞는다"라고 말한다.	1	2	3	4	5
6	아이가 친구와 더 이상 놀지 못하도록 다른 곳으로 분리시킨다.	1	2	3	4	5
7	아이와 함께 친구 입장에서 생각해보고 친구의 기분과 마음을 이해할 수 있도록 도와준다.	1	2	3	4	5

	(예. 네 말에 친구가 대답을 안 하면 어떨까?)					
8	아이와 같이 놀면서 친구와 사이 좋게 지내는 방법을 알려준다.	1	2	3	4	5
9	아이의 감정을 읽어준다.	1	2	3	4	5
10	손으로 아이를 때린다.	1	2	3	4	5
11	그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다.	1	2	3	4	5
12	사건에 대해 알기도 전에 친구에게 일단 사과하라고 말하도록 한다.	1	2	3	4	5
13	행동을 목격한 즉시 아이에게 가서 “안돼 ” 혹은 “하지마” 라고 일방적으로 주의만 준다.	1	2	3	4	5
14	문제를 해결할 수 있도록 도와준다.	1	2	3	4	5
15	"또 왜 그러니?" 또는 "엄마가 그렇게 말 하지 말라고 했어, 안 했어?" 하며 아이의 행동에 대해 다그친다.	1	2	3	4	5
16	아이가 좋아하는 것을 안 준다고(못하게 한다고) 한다. (예. “너 자꾸 이러면 아이스크림 안 준다.”)	1	2	3	4	5

【이야기 #4】

근래에 그림 그리기 시간에 자녀를 데리러 간 일이 세 번 있었습니다. 그때마다 당신의 자녀가 옆에 앉은 친구에게 “빨간색 색연필 나 줘. 안주면 나중에 너 엄마 안 시켜준다(로봇 안 만들어 준다)” 라고 말하는 것을 보았습니다.

* 자녀가 이런 행동(이야기#4)을 한다면, 자녀에게 어떤 말 또는 행동을 하시겠습니까? 다음 각 항목에 대한 어머니의 평소 말과 행동에 ○표 해주십시오.

문 항	질문 내용	매우 그렇지 않다	그렇지 않은 편이다	보통 이다	그런 편이다	매우 그렇다
1	아이의 잘못된 행동에 대해 구체적으로 설명해준다. (예. "빨간색을 갖고 싶으면 친구에게 예쁘게 부탁을 해야지. 같이 놀지 않겠다고 하면 친구가 속상해.")	1	2	3	4	5
2	친구에게 그런 말이나 행동을 하면 안 된다고 단호하게 말한다.	1	2	3	4	5
3	우선 먼저 내 아이의 기분을 가라앉혀준다. (예. 잘못된 행동이라고 말해주되 아이를 먼저 달래준다)	1	2	3	4	5
4	벌을 준다. (예. 손을 들고 서있게 한다)	1	2	3	4	5
5	"이렇게 행동하면 엄마한테 맞는다"라고 말한다.	1	2	3	4	5
6	아이가 놀이를 하지 못하도록 다른 곳으로 분리시킨다.	1	2	3	4	5
7	아이와 함께 친구 입장에서 생각해보고	1	2	3	4	5

	친구의 기분과 마음을 이해할 수 있도록 도와준다. (예. "네가 친구에게 한 말을 친구가 너에게 해도 괜찮겠니? 또는 "친구가 너하고 놀지 않겠다고 하면 너의 기분은 어떨까?")					
8	아이와 같이 놀면서 친구와 사이 좋게 지내는 방법을 알려준다.	1	2	3	4	5
9	아이의 감정을 읽어준다.	1	2	3	4	5
10	손으로 아이를 때린다.	1	2	3	4	5
11	그런 행동 하는 아이는 내 아들(딸)이 아니라고 말한다.	1	2	3	4	5
12	사건에 대해서 알기도 전에 친구에게 일단 사과하라고 말하도록 한다.	1	2	3	4	5
13	행동을 목격한 즉시 아이에게 가서 "안돼" 혹은 "하지마"라고 일방적으로 주의만 준다.	1	2	3	4	5
14	문제를 해결할 수 있도록 도와준다. (예. "친구에게 거절하는 방법을 가르쳐준다.")	1	2	3	4	5
15	"또 왜 그러니?" 또는 "엄마가 그렇게 말 하지 말라고 했어, 안 했어?" 하며 아이의 행동에 대해 다그친다.	1	2	3	4	5
16	아이가 좋아하는 것을 안 준다고(못하게 한다고) 한다. (예. "너 자꾸 이러면 아이스크림 안 준다.")	1	2	3	4	5

- English Version-
**(Mothers' Survey on Mothers' Reactions to Hypothetical
Vignettes of Children's Aggression)**

【Vignette #1】

For the past three days, you went to pick up your child from school. Each time, children were walking in line to play outside. Then, you saw your child pushing and shoving a friend ahead of him/her.

【Vignette #2】

For the past three days, you went to pick up your child from school. Each time, you saw your child grabbing his/her peer's toy and pushing his/her peer.

【Vignette #3】

For the past three days, you went to pick up your child from school. Each time, children were playing outside. Your child was also playing with his/her friend. When another child walked up to your child and asked if he/she could play with them, your child ignored him/her and said, "Let's do something else!," and walked away with his/her friend.

【Vignette #4】

For the past three days, you went to pick up your child from school during art class. Each time, you saw your child saying to his/her friend, "Give me your red crayon. If you don't give me, I won't let you be the mother during play time (or I won't make a robot for you)."

*What would you say or do if you witnessed your child engaged in such behavior (episode #)? What would you say or do? Please read the statements below carefully and decide whether it is a “never or almost never true” or “always or almost always true” description of your reaction.

1	2	3	4	5
Never or almost never true	Not often	Some times	Often	Always or almost always true

Q	Items	1	2	3	4	5
1	I would explicitly explain to my child what was unacceptable with his/her behavior in detail.	1	2	3	4	5
2	I would firmly tell my child that his/her behavior was unacceptable.	1	2	3	4	5
3	I would first calm my child down.	1	2	3	4	5
4	I would punish my child (e.g. Stare at the wall).	1	2	3	4	5
5	I would tell my child that I would punish him/her if he/she behaves in such ways.	1	2	3	4	5
6	I would remove my child from the situation so he/she does not get to be with his/her friends.	1	2	3	4	5
7	I would help my child to consider and understand how his/her friends would feel.	1	2	3	4	5
8	By participating in the children’s play, I would teach my child how to get along his/her friends.	1	2	3	4	5
9	I would try to understand how my child feels.	1	2	3	4	5
10	I would spank my child with my hands.	1	2	3	4	5
11	I would tell my child that he/she is not my son/daughter if he/she behaves in such ways.	1	2	3	4	5
12	I would tell my child to first say sorry to him/her friend even before I know more about the situation.	1	2	3	4	5
13	As soon as I observe such behavior, I would walk up to my son/daughter and tell him/her “No!” or “Don’t do that!”	1	2	3	4	5

14	I would help my child to solve the problem.	1	2	3	4	5
15	I would ask my child questions such as “Why would you do that?” and “Didn’t I tell you to stop?” and make him/her feel bad about him/herself.	1	2	3	4	5
16	I would tell my child that I would not give (buy) what he/she likes. (e.g. I won’t give you ice-cream if you behave this way”).	1	2	3	4	5

♠ 다음은 일반적인 사항에 관한 질문입니다. 자신에게 맞는 내용을 오른쪽 칸에 간단히 쓰거나 해당되는 답을 하나만 골라 ○표 해주세요. 연구결과에 중요한 의미를 지니는 정보이므로 한 문항도 빠짐없이 응답해주세요.

1. 유아 생년월일	()년 ()월 ()일	2. 자녀의 성별	① 남 ② 여
3. 자녀의 출생순위	()명 중 ()째		
4. 부모 나이	어머니	만()세	아버지 만()세
5. 현 배우자와 결혼 년 차	① 1 년차 ② 2 년차 ③ 3 년차 ④ 4 년차 ⑤ 5 년차 ⑥ 6 년차 ⑦ 7 년차 ⑧ 8 년차 ⑨ 9 년차 ⑩ 10 년 이상		
6. 부모 학력	<u>아래 보기 중 부모님의 최종 학력에 해당하는 번호를 적어주세요.</u> <u>나 () 배우자 ()</u> ① 초등학교 졸업 ② 중학교 졸업 ③ 고등학교 졸업 ④ 대학교 졸업 ⑤ 대학원 졸업		
7. 부모 직업	<u>아래 보기 중 부모님의 직업에 해당하는 번호를 적어주세요.</u> <u>나 () 배우자 ()</u> ① 무직 (주부, 퇴직자, 실업자 등) ② 노동직 (파출부, 청소원, 행상직, 노무직, 수위, 점원 등) ③ 기술직 (요리사, 미용사, 기술자 등) ④ 자영업 (서비스업, 개인택시, 판매업자) ⑤ 사무직 (회사원, 은행원, 공무원, 경찰, 직업군인 등) ⑥ 전문 기술직 (건축사, 엔지니어, 간호원 등) ⑦ 관리직 (회사의 부장급, 정부의 국장급, 고급공무원, 중소기업 사장 등) ⑧ 전문직 (약사, 의사, 판검사 회계사, 교사, 언론인 등) ⑨ 기타		

8. 조부모 동거 여부	① 조부모와 함께 산다 ② 조부모와 함께 살지 않는다
9. 현재 거주지	① 대도시(특별시/광역시) ② 중·소도시
10. 부모 소득	<p>우리 가족의 한달 총수입에 해당하는 번호에 ✓표해 주세요.</p> <p>(아버지소득, 어머니소득, 이자소득, 부동산 소득 등 모두 포함)</p> <p>① 200 만원 미만 ② 201 만원~400 만원 ③ 401 만원~600 만원 ④ 601 만원~800 만원 ⑤ 801 만원~1000 만원 ⑥ 1000 만원 이상</p>

Appendix 2

질 문 지 (교사용)

안녕하세요?

이 조사에 협조해 주신 여러분께 감사의 말씀을 드립니다.

저는 서울대학교 아동가족학과 석사과정에 재학중인 조혜정입니다. 제 석사논문에 사용될 참고자료를 얻고자 이 질문지를 드립니다.

이 질문지는 유아의 사회적 행동을 측정하기 위해 작성되었습니다. 모든 문항에는 정답이 없으므로 선생님께서 생각하시고 느끼시는 대로 응답해주시면 됩니다. 솔직하고 정확한 답변을 해 주셔야 현실을 제대로 연구할 수 있으니 각 항목을 주의 깊게 읽으시고 한 문항도 빠짐없이 솔직하게 응답해 주시기를 부탁드립니다. 여러분이 응답한 내용은 다른 사람들이 알 수 없으며 연구의 자료로서 통계수치로만 발표될 것입니다.

응답의 내용은 전적으로 연구 목적으로만 사용되며 절대 비밀이 보장됩니다. 바쁘신 중에 시간을 내어 설문에 응해주셔서 진심으로 감사합니다.

서울대학교 아동가족학과 아동학 연구실
연구자 조혜정 (*****@snu.ac.kr)

♠ 다음은 선생님의 개인적인 사항에 관한 질문입니다. 빠짐없이 답
 해주십시오. 오른쪽 칸에 간단히 쓰거나 해당되는 답을 하나만 골라
 √ 표해 주세요. 연구결과에 중요한 의미를 지니는 정보이므로 한 문
 향도 빠짐없이 응답해주세요.

1. 본인 나이	만 ()세
2. 본인 성별	① 남 ② 여
3. 학력	① 2년제 대학 졸업 ② 4년제 대학 재학 중 ③ 4년제 대학 졸 ④ 대학원 재학 중 ⑤ 대학원 졸업 ⑥ 기타 ()
4. 교사 경력	① 1년차 ② 2년차 ③ 3년차 ④ 4년차 ⑤ 5년차 ⑥ 6년차 ⑦ 7년차 ⑧ 8년차 ⑨ 9년차 ⑩ 10년 이상
5. 담당학급	① 중일 반 ② 반 일반
6. 담당 연령	① 만 3세 ② 만 4세 ③ 만 5세
7. 근무하시는 곳	① 어린이 집: () 어린이 집 ()반 ② 유치원: ()유치원 ()반

일련번호	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	생년월일	_____년 ____ 월 ____ 일	유아 성별	남 여
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♣ 다음은 유아의 사회적 행동에 대한 질문입니다. 다음에 제시되는 문항을 읽으시고, 해당되는 칸에 ○표 해주세요.

번호	이 아이는...	전혀 그렇지 않다	거의 그렇지 않다	보통 이다	자주 그렇다	항상 그렇다
1	다른 아이를 발로 차거나 때린다.	1	2	3	4	5
2	부탁을 들어주지 않는다면, 그 애와 같이 놀아주거나 친구가 되지 않을 것이라고 말한다.	1	2	3	4	5
3	다른 아이를 때릴 것이라고 말로 위협한다.	1	2	3	4	5
4	다른 아이들을 밀치거나 떠민다.	1	2	3	4	5
5	다른 아이들에게 어떤 아이와 놀지 말라고 하거나 친구가 되지 말라고 한다.	1	2	3	4	5
6	어떤 아이에게 화가 나면, 그 아이가 놀이집단에 들어오지 못하게 한다.	1	2	3	4	5
7	자기가 원하는 것을 얻기 위해 다른 아이의 몸에 해를 입히겠다고 말로 협박한다.	1	2	3	4	5
8	화가 나면 다른 또래의 물건(작품이나 장난감)을 망가뜨린다.	1	2	3	4	5
9	또래에게 자기가 원하는 것을 해주지 않으면 생일파티에 초대하지 않을 거라고 말한다.	1	2	3	4	5
10	어떤 아이의 뒤에서 나쁜 말을 해서 다른 아이들이 그 아이를 싫어하도록 만든다.	1	2	3	4	5
11	말하는 대로 하지 않으면 놀이에 끼어주지 않을 것이라고 또래에게 말로 위협한다.	1	2	3	4	5
12	다른 아이들을 꼬집어서 아프게 한다.	1	2	3	4	5

- English Version-
(Teacher's Survey on Children's Aggression)

1	2	3	4	5
Never or almost never true	Not often	Some times	Often	Always or almost always true

Q	Items	1	2	3	4	5
1	This child kicks or hits others.	1	2	3	4	5
2	This child tells a peer that he/she won't play with that peer or be that peer's friend unless he/she does what this child asks.	1	2	3	4	5
3	This child verbally threatens to hit or beat up other children.	1	2	3	4	5
4	This child pushes or shoves other children.	1	2	3	4	5
5	This child tells others not to play with or be a peer's friend.	1	2	3	4	5
6	When mad at a peer, this child keeps that peer from being in the playgroup.	1	2	3	4	5
7	This child verbally threatens to physically harm another peer in order to get what he/she wants.	1	2	3	4	5
8	This child ruins other peer's things (e.g. art projects, toys) when he/she is upset.	1	2	3	4	5
9	This child tells a peer they won't be invited to their birthday party unless he/she does what the child wants.	1	2	3	4	5
10	This child tries to get others to dislike a peer (e.g. by whispering mean things about the peer behind the peer's back).	1	2	3	4	5
11	This child verbally threatens to keep a peer out of the play group if the peer doesn't do what the child says.	1	2	3	4	5
12	This child hurts other children by pinching them.	1	2	3	4	5

국문초록

어머니의 반응성과 유아의 기질이 유아의 공격성에 미치는 상호작용 효과

조 혜 정
아동가족학과
생활과학대학
서울대학교

이 연구는 유아가 공격적인 행동을 보이는 상황에 대한 어머니의 반응과 유아의 기질이 유아의 외현적·관계적 공격성에 미치는 직·간접적 영향을 검증하고자 하였다.

이러한 연구목적에 따라 서울, 경기, 부산 지역에 소재한 어린이집 8 곳의 만 3~6 세 유아의 어머니 317 명과 유아를 보육하는 담임교사 28 명을 대상으로 설문조사를 실시하였다. 어머니는 유아의 기질과 유아의 공격성에 대한 자신의 반응에 대해 평가하였고, 담임교사는 각 유아의 외현적 및 관계적 공격성에 대해 평가하였다. 수집된 자료는 AMOS 프로그램의 탐색적, 확인적 요인분석과 SPSS 프로그램의 t 검증, 상관분석, 위계적 회귀분석을 이용하여 분석하였다.

연구의 주요 결과는 다음과 같다.

첫째, 유아의 외현적 공격성은 성별에 따라 유의한 차이가 있었다. 남아가 여아보다 외현적 공격성을 더 많이 표출하였다. 반면, 유아의 관계적 공격성은 성별에 따라 유의한 차이가 나타나지 않았다.

둘째, 유아의 외현적 공격성을 설명하는 중요 예측 변인은 유아의 외향성, 유아의 외향성과 어머니의 제한적 반응 (restrictive reaction) 및 수용적 반응 (responsive response)간의 상호작용, 유아의 주의조절과 어머니의 제한적 반응 간의 상호작용으로 나타났다. 이 중, 유아의 외향성의 직접적 영향력이 가장 컸으며, 어머니의 제한적 반응과 수용적 반응은 유아의 외현적 공격성에 직접적인 영향을 미치지 않았다. 또한 유아의 외향성이 높을 때는 유아의 공격성에 대해 어머니가 제한적 반응과 수용적 반응을 많이

할수록 유아의 외현적 공격성이 증가하였다. 동일한 경우에 유아의 외향성이 낮을 때는 유아의 공격성이 감소 하였다. 어머니의 제한적 반응과 유아의 외현적 공격성의 관계는 유아의 외향성이 낮을 때보다 높을 때 더 강하게 나타났다. 반면, 어머니의 수용적 반응과 유아의 외현적 공격성의 관계는 유아의 외향성이 높을 때보다 낮을 때 더 강하게 나타났다. 마지막으로 어머니의 제한적 반응과 유아의 주의조절 간에 서로의 영향력을 억제하는 상호작용효과가 나타났다. 유아의 주의조절이 높을 경우에는 공격성에 대해 어머니가 제한적 반응을 많이 할수록 유아의 외현적 공격성이 감소하였다. 반면 동일한 경우에 유아의 주의조절이 낮을 경우 공격성이 증가 하였다. 어머니의 제한적 반응과 유아의 외현적 공격성간의 관계는 유아의 주의조절이 낮은 집단에서 더 강하게 나타났다.

셋째, 유아의 외향성은 유아의 관계적 공격성을 설명하는 중요한 예측 변인으로 나타났다. 유아의 관계적 공격성 대한 어머니의 반응은 유아의 관계적 공격성에 직접적인 영향을 미치지 않았으며, 상호작용 효과도 나타나지 않았다.

이 연구에서는 어머니의 반응은 유아의 공격성에 직접적인 영향을 미치지 않았고, 유아의 기질 중 외향성만 직접적인 영향을 미침을 밝혔다. 또한, 유아의 공격성에 대한 어머니의 반응과 유아의 기질이 유아의 공격성에 미치는 간접적 영향력이 공격성 유형에 따라 달라짐을 규명하였다. 즉, 유아의 공격성에 대한 어머니의 반응이 유아의 외현적 공격성에 미치는 영향은 유아의 기질 유형과 정도에 따라 다르다는 사실을 밝혔다. 따라서 이 연구 결과는 향후 유아의 공격성 유형과 기질 유형에 따른 차별적 중재프로그램을 구성하는데 기여할 수 있을 것이다.

Keywords: 유아의 공격성, 외현적 공격성, 관계적 공격성, 어머니의 반응, 기질, 유아의 공격성에 대한 어머니의 반응

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감사의 글

뛰어나지 않은 글을 쓰는데 물심양면으로 도움을 주신 모든 분들께 부족하지만 글의 마지막 페이지를 빌어 감사의 말씀을 드립니다. 우선, 학문적으로나 의지면에서 많이 부족한 저를 끝까지 지도해주신 이순형 선생님께 깊은 감사를 드립니다. 선생님의 남다른 사랑과 배려가 없었다면 제가 여기까지 올 수 없었을 것입니다. 바쁘신 와중에도 논문지도를 위해 많은 시간을 아끼지 않으셨던 박혜준 선생님, 이강이 선생님, 김지현 선생님께 감사드립니다.

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셔서 이렇게 잘 마무리 할 수 있었습니다.

이제 다시 새로운 시작입니다. 지금보다 더 노력하고 앞으로 나
아가는 딸, 제자, 동료, 선후배가 되도록 하겠습니다. 새로운 길과
마주했을 때 여러 고마운 분들에게서 받은 사랑 가슴에 간직하고
감사한 마음 잊지 않고 살아가겠습니다. 감사합니다.