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**THE SELF, VIEWS OF THE WORLD, AND THE SOCIALIZATION OF SELF-
REGULATION**

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Abstract

This study examined associations among mothers' views of the world, defined by the manner in which their self-regulation is organized, parenting behaviors, and child self-regulation in a sample of 113 3- and 4-year-olds and their mothers. Using both observational and self-report measures, we assessed whether: (1) mothers' promotion (oriented towards obtaining desired outcomes) and prevention (oriented towards avoiding undesired outcomes) regulatory-focus predicted promotion- and prevention-oriented parenting behaviors; (2) parenting behaviors predicted differences in style versus effectiveness of child self-regulation; and (3) promotion- and prevention-oriented child and maternal behaviors reliably predicted emotional tendencies.

Results indicated that, whereas maternal regulatory-focus did not predict maternal parenting behaviors, child temperament and age were linked to parenting. Maternal behaviors, as well as child temperament, predicted both stylistic differences in and indices of effective child self-regulation. Finally, maternal and child promotion- and prevention-related emotions (dejection/happiness and agitation/calm respectively) were linked to mother and child promotion and prevention behaviors.

Results and future directions are discussed, including the importance of conceptualizing socialization as contextually sensitive and co-determined by mothers and children, the significance of distinguishing between stylistic differences in and effectiveness of child self-regulation, and the relations among temperament, promotion and prevention regulatory-orientations, and emotional tendencies.

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The Self, Views of the World, and Children's Regulation of Emotion and Behavior: The Socialization of Self-Regulation

During the preschool years, children's increasing self-awareness and cognitive sophistication lead to major revolutions in behavior and emotion. Of these, self-regulation is one of the most crucial developmental tasks, an ability that is predictive of current and later adjustment (Denham, 1998; Eisenberg et al., 2001; Kopp, 1982; Saarni, 1999). For young children, self-regulation is reflected in the ability to comply with and internalize caregiver standards and control one's emotions and behavior in response to social and non-social demands (Higgins & Silberman, 1998; Kochanska, 1993; Kopp, 1982). Although self-regulation is a well-recognized and important achievement of early childhood, it remains unclear how young children learn to regulate their emotions and behavior. Socialization theory and research suggest that the ways in which parents help their children control behaviors and emotions strongly influence the development of self-regulation (e.g., Calkins & Johnson, 1998; Eisenberg, Cumberland, & Spinrad, 1998; Kopp, 1982; 1989; Dumas, LaFreniere, & Serketich, 1995; Leadbeater, Bishop, & Raver, 1996; Raver, 1996). That is, it is hypothesized that there is a gradual shift from social- to self-regulation.

Despite the fundamental importance of child self-regulation and the hypothesized role that parents play in its acquisition, our understanding of the socialization of self-regulation is limited. Three aspects of this issue require more empirical investigation: (a) the nature and determinants of parenting behavior, particularly the relations between parents' views of the world and attitudes and parenting behavior; (b) the link between parent and child behaviors, that is, how social-regulation influences children's self-regulation; and (c) the nature of individual differences in child self-regulatory style.

Models of parenting and socialization need to more thoroughly articulate the continuity between parental attitudes and how parents interact with children to help them self-regulate (see Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Maccoby, 1992; Maccoby & Martin, 1983). Research attempting to demonstrate significant associations between attitudes and actual parenting behavior has been only moderately successful (Zahn-Waxler, Radke-Yarrow, & King, 1979; Kochanska, 1990). However, some research has shown a reliable association between self-reported beliefs, values, and preferences and observed socialization practices (Kochanska, 1990; Kochanska, Kuczynski, & Radke-Yarrow, 1989), but primarily when the content of the beliefs matches the content of the behavior. That is, parents, to some degree, tend to do what they say they do and what they say they value. The relation between other beliefs and values-- particularly parents' self-perceptions and general attitudes-- and parenting behavior has not been comprehensively conceptualized. However, one theory, self-discrepancy theory (Higgins, 1987) provides a model of parental attitudes and socialization, proposing that parents' general view of the world (i.e., a cognitive disposition towards focusing on promoting positive outcomes or preventing negative outcomes) shapes individual differences in how parents interact with their children, thus influencing the nature of children's self-regulation.

Indeed, a larger body of research has addressed the relations between parenting behaviors and child self-regulatory behavior. Theories of socialization imply that the child's internalization of early experiences with caregivers explains the influence of caregiving on child development. For example, attachment theory posits the internal working model, a cognitive representation of the availability of and relationship quality with the caregiver. The internal working model is invoked to explain how relational patterns with the caregiver are applied to other relationships (Bowlby, 1969; Bretherton, 1995) and how attachment history influences the effectiveness of

child self-regulation with the caregiver (Cassidy, 1994). However, attachment theory does not clearly explicate how interactions with parents generalize to non-social contexts and influence both regulatory strengths and vulnerabilities in an individual child. Instead, this work has focused on how secure attachment is associated with effective self-regulation and insecure attachment associated with ineffective self-regulation (Cassidy, 1994). Other models outline a comprehensive list of factors that relate to children's emotional competence, including child temperament, emotional arousal, parenting behaviors, and aspects of culture (e.g., Eisenberg et al., 1998; Kopp, 1982). Despite the richness of such models, they do not always address how parenting behaviors predict specific characteristics of child self-regulatory style.

In contrast, self-discrepancy theory offers a framework for predicting individual differences in the socialization of self-regulation as well as the costs and benefits of each self-regulatory style (Higgins, 1989a; 1991; 1996a; 1996b; 1996c; 1997; Higgins, Grant, & Shah, 1999). According to the theory, individual differences in parenting style predict individual differences in child self-regulatory style independently of whether the child regulates well or poorly. Specifically, promotion-oriented parents focus on promoting positive child behavior, and have children whose self-regulation is more approachful. A vital aspect of promotion-oriented parenting is the encouragement of competence and pro-social child behavior, one of the individual differences in parenting described in Kochanska's research (Kuczynski & Kochanska, 1990). Prevention-oriented parents focus on preventing negative child behavior, and have children whose self-regulation is more avoidant whereas promotion-oriented parenting emphasizes safety, rules, and regulatory control. Both types of parenting are associated with child regulatory strengths, such as the ability to pursue challenges and inhibit inappropriate responses, and vulnerabilities, such as tendencies towards depression or anxiety. Self-

discrepancy describes the motivational, behavioral, and emotional correlates of children's styles of self-regulation (Higgins & Silberman, 1998).

Indeed, in addition to parental determinants of child self-regulation, another area of research requiring more investigation is the nature of child self-regulation. Children's self-regulation has been investigated in terms of both the effectiveness of child self-regulation and in terms of different styles of self-regulation. Although the efficacy of self-regulation is surely crucial in the development of healthy adjustment, considering style of self-regulation is also important in understanding the development of adjustment and maladjustment. To confound style with effectiveness risks interpreting particular child self-regulatory behaviors as risky when in fact they merely reflect individual differences. The empirical basis upon which to integrate models predicting effective child self-regulation with models predicting stylistic differences is surprisingly sparse. However, exceptions include temperament research, which describes dispositional tendencies towards patterns of reactivity and regulation, and the moderating effects of socialization (e.g., Calkins & Johnson, 1998; Fox, 1994; Rothbart, 1988).

This dissertation's aims were threefold: (a) to investigate relations between parents' attitudes and parenting behaviors, specifically, whether mothers' reported promotion or prevention focuses predict promotion- and prevention-oriented parenting behaviors; (b) to examine the association between parenting behaviors and child self-regulation, using self-discrepancy theory as a conceptual framework; and (c) to examine the emotional, temperamental, and behavioral correlates of differences in parenting and child self-regulatory style.

We observed mothers and their preschool children during a waiting task that required the child to regulate his or her emotions and behavior, and during two other challenging tasks, one in which the child was alone and one in which the child was with the experimenter. We chose to

observe 3- and 4-year-olds and their mothers because, while preschoolers at this age are increasingly able to self-regulate, mothers are still actively supporting and directing child self-regulatory attempts. Thus, we reasoned that we would be best able to observe parenting and child regulatory strategies in action.

Parenting Attitudes and Parenting Behavior

Parental attitudes are assumed to influence parenting behavior, but correspondences between these two aspects of parenting have been difficult to empirically demonstrate (Kochanska, 1990). A classic research literature concerning parents' patterns of authority and socialization practices delineates three classes of parenting styles: authoritative (rational guiding of the child, encouraging child independence, and open expression of affect) authoritarian (prohibitions, physical punishment, supervision of the child, and control through anxiety induction), and permissive (lack of firm limits and control) (Baumrind, 1973; Maccoby & Martin, 1983). These styles of parenting as well as parents' views, values, attributions, and attitudes about childrearing have been studied extensively in relation to children's outcomes (Kochanska, 1990; Maccoby & Martin, 1983), parental maladaptation (Bugental, 1992; Bugental, Blue, & Cruzcosa, 1989), and cultural differences (Stevenson-Hinde, 1998; Power, Kobayashi-Winata, and Kelley, 1992) to name a few areas of research. In some studies, parental attitudes have also been found to mediate associations between parental characteristics and discipline practices (e.g., Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). However, relations between parents' self-reported attitudes and actual parenting behaviors remain ambiguous. Reviews of the literature have generally found that observations of parents' behavior across domains rather than reported attitudes better predict parenting behaviors and child outcomes such as social skills and compliance (Rothbaum & Weisz, 1994).

Despite the difficulty in empirically demonstrating correspondences between parental attitudes and behaviors, there is a small literature showing a reliable association between self-reported parental beliefs, values, and preferences and observed socialization practices when the content of the beliefs matches the content of the behavior (Brody, Flor, & Gibson, 1999; Kochanska, 1990; Kochanska, Kuczynski, & Radke-Yarrow, 1989). For example, mothers' parenting values when children were toddlers predicted parenting behaviors concurrently and 2-3 years later (Kochanska, 1990; Kochanska, Kuczynski, & Radke-Yarrow, 1989). Mothers' beliefs in authoritative parenting values were positively associated with observed maternal autonomy granting, suggestions, and positive incentives and negatively associated with prohibitive interventions. In contrast, belief in authoritarian values was positively associated with observed use of direct commands, physical enforcements, reprimands, and prohibitive interventions, and negatively associated with the use of suggestions. Notably, in these studies and others, when beliefs are about actual parenting behaviors, parents tend to behave in ways they think good parents should. Associations between other beliefs and values, particularly parents' general views of the world and of themselves, and parenting behaviors remains uncertain.

Self-discrepancy theory also hypothesizes that parents' attitudes predict parenting behaviors. However, rather than linking attitudes towards parenting with parenting behavior, the theory describes how regulatory focus, or values about how one can get along and regulate effectively in the world, influences how parents perceive their children, communicate values and standards, and respond to child behavior. Discussed in more detail below, the theory proposes that the regulatory-focus of an adult's world-view can have a promotion or prevention orientation (Higgins & Silberman, 1998). A promotion regulatory-focus emphasizes the value of accomplishment and reaching desired goals, whereas a prevention regulatory-focus emphasizes

the value of safety and avoiding undesired goals. These emphases are hypothesized to relate to distinct parenting behaviors that serve to convey these values to children. Promotion-oriented parenting involves ideal standards (hopes and wishes for accomplishment), bolstering, and nurturance. These bolstering parenting behaviors include showing affection to children when children behave in a desired manner, encouraging children to overcome difficulties, and setting up opportunities for children to engage in rewarding activities. When children behave in an undesired manner, promotion-oriented responses include withdrawing affection and love (e.g., a parent might end a meal when the child throws food or take a toy away when the child refuses to share the toy). The caregiver's message to the child in both the bolstering and love-withdrawal modes is that what matters is accomplishing goals and fulfilling aspirations. When bolstering positive child behavior, parents provide information about what they would ideally like their children to do and when withdrawing love, they communicate what they would ideally not like their children to do.

Prevention-oriented parenting involves ought standards (beliefs about duty and obligation) and prudence. These prudent parenting behaviors might include "child-proofing" the house, training the child to be alert to potential dangers, and teaching the child to be polite. When children behave in an undesired manner, a prevention-oriented response includes criticism or punitive discipline (e.g., a parent might scold the child when the child doesn't listen or criticize the child when making a mistake). In both the prudent and punitive modes, parents send the message that what matters is attaining safety and meeting obligations. When being prudent, parents provide information about what they believe children ought to do and when being punitive, they communicate what they believe their children ought not to do.

Thus, general attitudes about the world in the form of regulatory focus are hypothesized to directly influence parenting. However, with the exception of an unpublished study (Higgins, Loeb, & Ruble, 1994), little research has been done to directly test these hypotheses.

Theories of Socialization

The links between standards and parenting behaviors articulated in self-discrepancy theory do not clearly distinguish this theory from other accounts of socialization and child development. Moreover, as in other theories of development (e.g., Bowlby, 1969), it is assumed that children, in the process of adjusting to significant others' expectations, start to view themselves in terms of how others see them, and internalized beliefs and values come to guide how children interpret and respond to the world. Therefore, might the focus on the role of standards and caregiver expectations in socialization be merely an example of old wine in new bottles? A comparison with previous conceptualizations of how caregivers influence child development clarifies how self-discrepancy theory is rooted in classic theories, but also offers additional predictions regarding the socialization of self-regulation.

Historically, several theories of socialization have laid the groundwork for understanding the role of parenting in how children learn to self-regulate. Psychodynamic theory, attachment theory, and social learning theory have particularly shaped how psychologists conceptualize the role of the caregiver. Psychodynamic theory emphasizes the social-developmental origins of the conscious and unconscious mind, and how drives, motives, and conflicts within this system determine human behavior (Freud, 1969). Attachment theory proposes that secure and insecure relationships with caregivers create internal working models of self and other. These internal working models serve as a template for interactions with the world and influence subsequent adaptation and maladaptation (Bretherton, 1995). Social learning theory has emphasized how

external contingencies, particularly in interaction with caregivers, influence child behavior (Bandura, 1979; 1986; Patterson, 1986a; 1986b).

Self-discrepancy theory: The role of self in self-regulation. Self-discrepancy theory emphasizes the role of the caregiver in the development of the self and self-regulation, just as do classic accounts of the social origins of self. For example, in object-relations theory (Sullivan, 1940; Winnicott, 1958; Fairbairn, 1946) the development of a healthy self depends on the mother's sensitive responsiveness to her infant. Other work suggests that the ways in which mothers and their children interact influence the development of child self-esteem (Coopersmith, 1967; Harter, 1999) and self-regulation (Kopp, 1982;1989; Thompson, 1988). In seminal research on the antecedents of self-esteem (Coopersmith, 1967), mothers of children with low self-esteem, when compared to mothers of children with high self-esteem, favored punishment and withdrawal of love as ways to gain child compliance, and did not often serve as a trusted confidant to their child. While this research did not document actual interactions between mothers and children, these self-report data suggest that the ways in which mothers discipline and affiliate with their children may influence children's views of themselves.

Social psychologists have long been interested in the self and have conceptualized multiple facets of the self, such as the "I" versus "me" self (Baldwin,1906; 1911; James, 1950), self-schema (Markus, 1977), and self-esteem (Baumeister, 1993). In each of these approaches, the self implicitly organizes and motivates behavior and emotion through conflict within the self-system. For example, some have suggested that the more conflict there is between one's real self and selves as perceived in the roles one plays, the lower one's feelings of self-worth (Harter, 1986) and the more emotional pain concerning the self (Epstein, 1973). Psychodynamic theory posits that conflicts within the psyche shape personality and drive behavior (Freud, 1969).

Self-discrepancy theory describes the structure of the self as including internalized standards, with the conflict due to these standards motivating specific types self-regulation, both adaptive and maladaptive. Other work has discussed the importance of discrepancies between self-views and standards (e.g., Rogers, 1960) but has not distinguished among different kinds of relations between different self-beliefs. That is, these other models have not articulated the different implications of qualitatively distinct discrepancies. In contrast, self-discrepancy's emphasis on conflict in the self-system is rooted in cybernetics and control theory (Carver & Scheier, 1990; Miller, Galanter & Pribram, 1960), which posit that different types of self-regulation directly result from evaluations of one's own behavior in relation to distinct goals. These goals are either a desired or undesired outcome, and self-regulation serves to either reduce or amplify discrepancies between the current state and the goal state. That is, self-regulation moves one's current situation as close as possible to a desired end-state (i.e., discrepancy-reducing) or as far as possible from an undesired end-state (i.e., discrepancy-amplifying).

In self-discrepancy theory, the self is described as consisting of representations of the actual self and self-guides. The actual self represents those attributes that one believes oneself to actually possess. Self-guides, standards for the self, are those attributes to which one aspires. Self-guides can be in the form of either an ideal or an ought standard. Ideal standards are hopes, wishes, or aspirations, attributes one would ideally like to have (e.g., I wish I were smart). In contrast, ought standards are based on one's sense of duty, obligation, or responsibility, attributes one ought to possess (e.g., I ought to be honest and kind).

Self-discrepancy theory postulates two distinct types of self-regulation, promotion and prevention self-regulation, which are differentially linked to conflicts between the actual self and either ideal or ought standards (Higgins, 1996a; 1996b; 1996c; 1999). The two regulatory

systems are distinguished by a regulatory focus on either positive or negative outcomes, and propensities for ideals or ought discrepancies, approach or avoidance forms of self-regulation, and dejection or agitation related emotional tendencies. The goal of promotion-oriented self-regulation is to maximize the presence of positive outcomes and minimize the absence of positive outcomes whereas the goal of prevention-oriented self-regulation is to minimize the presence of negative outcomes and maximize the absence of negative outcomes.

The promotion focus, associated with discrepancies between the actual and ideal selves (that is, what one actually is does not match with what one wishes to be) is concerned with approaching a positive and desired outcome (i.e., meeting the ideal standard). That is, being focused on wishes and ideals makes obtaining those ideals salient, and predisposes individuals towards self-regulatory forms involving approach (approaching and obtaining the ideal positive outcome). The promotion focus is also associated with emotional strengths and vulnerabilities: dejection related emotions such as sadness in the absence of positive outcomes and happiness in the presence of positive outcomes.

In contrast, the prevention focus, associated with discrepancies between the actual and ought selves (that is, what one actually is does not match with what one thinks one ought to be) is concerned with avoiding a negative outcome (i.e., not meeting the ought standard). That is, being focused on safety, duties, and obligations makes avoiding the failure to fulfill those obligations salient, and predisposes individuals towards self-regulatory forms involving avoidance (avoiding the negative outcomes associated with failing to meet ought standards). The prevention focus is also associated with emotional strengths and vulnerabilities: agitation related emotions such as nervousness in the presence of negative outcomes and calm in the absence of negative outcomes.

See Table 1 for a summary of each regulatory focus, with its associated outcome focus (positive or negative), regulatory tendency (approach or avoidance), relevant self-guides (ideal or ought), and emotions (dejection or agitation related):

Support for self-discrepancy theory: Emotions, cognitions, and persistence. Research supports several important hypotheses of self-discrepancy theory (Higgins, 1987; 1996). Discrepancies among the domains of the self (actual self, ideal self, and ought self) have been associated with the self-report of distinct emotional tendencies (for a review, see Higgins, 1987; Higgins, Klein, & Strauman, 1985; Higgins, Bond, Klein, & Strauman, 1986; Higgins, 1989b; Higgins, Vookles, & Tykocinski, 1992; Strauman & Higgins, 1987). Actual-ideal discrepancies activate dejection-related emotions such as sadness and happiness, whereas actual-ought discrepancies activate agitation-related emotions such as anxiety and tension and calm. This association has been demonstrated in experiments priming specific self-discrepancies (e.g., Strauman & Higgins, 1987), and in experiments that measured chronic self-discrepancies (Higgins, Bond, Klein, & Strauman, 1986). Research has also found that promotion and prevention regulatory focuses are associated tendencies to remember events that are relevant to that regulatory focus, such as positive versus negative outcomes and approach versus avoidance motivated behavior (Higgins, 1987; Higgins, Roney, Crowe, & Hymes, 1994; Higgins & Tykocinski, 1992).

Regulatory focus is also associated with approach and avoidance motivated behavior as indexed by persistence and resignation respectively (Crowe & Higgins, 1997; Forster, Higgins, & Idson, 1998). In achievement contexts, participants whose promotion-focused system was activated tended to approach and persist in difficult tasks more than did participants whose prevention-focused system was activated. The conceptual linkage between persistence-

resignation and approach-avoidance is consistent with earlier research (Feather, 1966), suggesting that success-oriented (positive outcome-focused) individuals are persist and are approach-motivated due to a “pride in accomplishment” while failure- threatened (negative outcome-focused) individuals give up and are avoidance-motivated due to a “shame due to failure”.

Psychodynamic theory. Psychodynamic theory, like self-discrepancy theory, describes caregivers as the primary influence on child development and relates individual personality to the interplay of conflicts within the individual’s psyche (Freud, 1969). Early childhood is considered a time of high plasticity, but characteristics developed at this time are highly resistant to change. Intrapsychic forces – libido and aggression – progress through a predetermined series of psychosexual stages. Parenting behaviors determine the quality of children’s experiences at each stage and strongly determine the long-term consequences of these developmental experiences. Parents must help children conform to social norms and direct drives into acceptable channels by placing constraints on children. Children experience these constraints as aversive and experience intense conflict in relation to their parents. They both desire parental nurturing and simultaneously experience intense libidinal and aggressive drives towards their parents which, if not controlled, may entail loss of parental love. This conflict is resolved through identification with the parents and internalization of parental values. The adoption of values is presumed to be the bedrock of the capacity to independently regulate impulses.

Psychodynamic theory delineates a specific self-structure and describes the nature of conflict in the self. The three structures of the self are: the id, consisting of biological drives such as the libido, the ego, the rational decision-making structure, and the superego, the internalization of parental values, social rules, and prohibitions. Conflict between the id’s

demands and the superego's constraints creates anxiety and guilt. To defend against these aversive feelings, the ego may exclude certain thoughts and impulses and relegate them to the unconscious through the use of defense mechanisms, such as repression, regression, and projection. Early efforts at empirical examination of these principles, and attempts to merge them with behavioral theory to predict children's personality characteristics from parental socialization, resulted in little supportive evidence (Sears, Whiting, Nowlis, & Sears, 1953; see also, Maccoby, 1992).

Psychodynamic theory's emphasis on the motivational implications of conflict within a multifaceted psyche is similar to self-discrepancy theory's notions of multiple aspects of the self and the motivational significance of conflict among these aspects. Moreover, one could draw comparisons between how psychodynamic theory and self-discrepancy theory describe aspects of the self (e.g., the superego resembles the ought self). However, these basic similarities belie the conceptual differences between the two approaches. For example, in contrast to psychodynamic theory, self-discrepancy theory does not hypothesize that structures of the psyche mechanistically manage and filter motivational drives, such as the libidinal drive. Rather, self-discrepancy theory proposes that the self is made up of different views of the self with no innate function of their own. When these views do not match, the conflict creates an unpleasant psychological state. Discomfort creates the motivation to resolve the conflict and regain homeostasis (Carver & Scheier, 1990; Higgins, 1996). While the basic concept that conflict is motivating historically originates with psychodynamic theory, self-discrepancy theory is not bound to the detailed assumptions of that theory.

Attachment theory. Emerging out of the intersection between psychodynamic object-relations theory and ethological theory, attachment theory emphasizes that the quality of

interactions between caregivers and children influences the development of child behaviors, emotions, and self-regulation (Bowlby, 1969; Cassidy, 1994; Field, 1994; Hofer, 1994; Thompson, 1988). Parents and children are considered to be in a state of biological readiness to sustain the child's prolonged period of dependency on the caregiver. Children regulate emotions and behavior as a means to achieve the goal of maintaining proximity to caregivers. Over the course of development, attachment between mother and child reflects the responsiveness of the caregiver and mediates the child's ability to function socially and regulate independently. Caregiver emotional unavailability can result in dysregulation or disorganization because the child is deprived of the external regulators that help organize behavioral and physiological regulation and because children behave in relation to expectations of an unavailable or unpredictable caregiver (Field, 1994; Hofer, 1994).

Attachment theory hypothesizes the internal working model to explain how attachment security influences the ways in which an individual interprets and forecasts a social partner's behavior as well as how the individual constructs plans (Bretherton, 1995; Bretherton, Golby, & Cho, 1997). The internal working model represents the view of the caregiver, a complementary view of self, and the relationship between the two. Therefore, if one has an internal working model of caregivers as available and loving, one will tend to have a complementary view of self as worthy of love. Developmental changes influence the complexity and content of internal working models, but, according to attachment theory, they are generally stable and can be applied to multiple social partners.

Individual differences in self-regulation may be associated with specific attachment histories, though strong empirical support is lacking (Cassidy, 1994; Sroufe & Waters, 1977). Individuals who demonstrate the ability to flexibly adapt to emotional challenges and integrate

both positive and negative emotions tend to have a history of secure attachment. In contrast, individuals who either dampen or heighten negative emotion tend to lack a secure attachment with their caregivers, and instead have a history of caregiver rejection or inconsistency, respectively. While these later styles of self-regulation are ultimately maladaptive, in the context of the disturbed caregiver-child relationship, they serve to maximize the likelihood of being attended to and protected by the caregiver. Specifically, by dampening affect, the rejected child decreases the likelihood of being further rejected. In contrast, by heightening affect, the child of the inconsistent caregiver increases the likelihood of being noticed and attended to. In short, it is hypothesized that secure attachment leads to adaptive self-regulation and insecure attachment leads to maladaptive self-regulation.

Self-discrepancy theory differs from attachment theory in several important respects. In contrast to the internal working model, self-discrepancy theory posits a self-representational system that, while in part, based on the values of significant others, does not represent the relationship with the caregiver. Furthermore, attachment theory describes one “good” type of secure attachment and several “bad” types of insecure attachment. Self-discrepancy theory does not make such value-laden judgements. Instead, specific world-views in caregivers are hypothesized to influence the child’s view of self and the world. Both promotion- and prevention-oriented parenting are associated with distinct behavioral and emotional costs and benefits. Another significant difference between the two approaches is that attachment theory focuses on relatedness as the main motivator of regulatory behavior. Self-discrepancy theory, while clearly emphasizing the motivational importance of relatedness needs during socialization, explains self-regulation in terms of more general approach and avoidance motivation. Moreover,

the self-system and regulatory focus motivates both social and non-social behavior. Attachment theory only attempts to account for the motivation of social behaviors.

Social learning theory. Social learning theory, emerging out of the cognitive revolution sweeping through psychology in the 1950's and 60's, represents an evolution of simple stimulus-response theorizing in behaviorism. Social learning theory emphasizes the role of cognitions in determining whether environmental experiences lead to behavior being learned and maintained. The acquisition of behaviors, expectancies, and beliefs is linked to problems of self-regulation such as aggression. Experiences that influence adaptive and maladaptive behavior can be vicarious (behavior is learned through observing role models) or enactive (behavior is learned through being reinforced for one's own behavior). However, emotional and cognitive factors are necessary to explain when a behavior will actually occur (Bandura, 1979; 1986; Dodge, 1980).

Social learning theory, in the form of the social-interactionist approach, has been applied to the study of how aggression is socialized in families (Bandura 1979; 1986; Eron, 1997; Dishion, Patterson, & Kavanaugh, 1992). For example, Patterson (1980; 1982; 1986a; 1986b) provides compelling evidence that aggression and violence are learned in the context of interactions with parents and siblings in the home. Aggressive families regularly attempt to control each other's behavior in aversive ways. Violence and aggression are used to control others, garner attention, or stop some irritation or frustration. Compliance with such aversive attempts to control each other reinforces this coercive interactional style. Patterson has linked this interactional style with poor self-regulation, specifically child antisocial behavior. Such anti-social behavior is in turn associated with peer rejection, poor self-esteem, and poor academic performance.

Social learning theory also emphasizes the importance of attributional biases and cognitive scripts in explaining behavior (Dodge, 1980). For example, aggressive children are biased to interpret others' behavior and select their own behavior based on hostile/aggressive scripts. The aggressive child has developed many aggressive scripts and few pro-social ones (Eron, 1997). Scripts represent expectations of what will happen in the environment, how to behave in response to the environment, and what the outcome will be. Scripts are learned through observation, reinforcement, and personal experiences. Scripts are more likely to be retrieved in situations that bear a resemblance to the original situation in which the script was encoded.

In sum, in the social learning approach, the acquisition of behaviors, expectancies, and beliefs is linked to adaptive functioning as well as to problems of self-regulation such as aggression. This approach has yielded significant advances in understanding how the environment influences individuals. For example, social-learning theory suggests that behaviors generalize to a variety of contexts as a result of scripts (e.g., the aggressive child has many aggressive scripts, and thus responds to many situations according to an aggressive script).

Can social-learning theory account for the associations between parenting and child self-regulation through notions of reinforcement, scripts, and modeling? In part, yes; however, why, for example, a promotion focus is functionally linked with approach tendencies and certain emotional costs and benefits is not parsimoniously accounted for by behavioral principles. Self-discrepancy theory addresses this issue by outlining how specific types of experiences with caregivers influence children's self-systems and therefore their general way of responding to the world. The self coordinates behavioral, cognitive, and emotional aspects of the promotion and

prevention focuses and explains how social-regulation by mothers influence children's self-regulation.

The Socialization of Self-Regulation

There is a salient progression towards self-regulation over the first several years of life (Cicchetti, Ganiban, & Barnett, 1991; Kopp, 1982; 1989). At around two years of age, children begin appearing more effective and autonomous in their ability to control and monitor their behavior according to caregiver dictates and standards. This emerging ability rests, in part, on the child's growing sense of selfhood and the cognitive capability to recognize, acquire, and recall caregiver standards (Kopp, 1982; 1991) as well as temperamental characteristics such as inhibitory control (Kochanska, Murry, & Coy, 1997;) and other executive functions (Diamond & Taylor, 1996; Pennington & Ozonoff, 1996; Welsh & Pennington, 1988). Therefore, research on child self-regulation has focused on both the development of child self-regulatory skills and on how children internalize standards for behavior. Self-regulation encompasses diverse behaviors, and has been studied with various labels, such as compliance, delay of gratification, impulse control, resistance to temptation, internalization of values, modulation of emotions and behavior, and the ability to follow social norms in the absence of external monitors and controls. The construct of social-regulation encompasses both the ways children's self-regulatory abilities are cultivated by caregivers and the multiple ways caregivers help children recognize and accept rules and standards (Kopp, 1982; 1989; 1992). However, bi-directional and interactive processes in socialization and self-regulation across the life-span have been increasingly emphasized (Kuczynski & Hildebrandt, 1997; Maccoby, 1992; Youniss, 1983). That is, children are not passive recipients of socialization, but are instead active agents of influence.

In infancy and early childhood, development of regulatory ability is rooted in social regulation of the infant by the caregiver and transactional processes between infant and caregiver (e.g., Gianino & Tronick, 1988; Feldman, Greenbaum, & Yirmiya, 1999). Infants are equipped with basic ways to reduce arousal, such as gaze aversion and non-nutritive sucking (Kopp, 1989). Elemental cognitive mechanisms are also crucial, such as learned associations of contingencies (such as between the presence of the mother and feeding). These basic mechanisms are at times insufficient, and infants often require the intervention of caregivers to be soothed and regain a state of organization. Co-regulation between caregiver and child is a particularly vital aspect of children's early regulatory development (Cohn & Tronick, 1988; Maccoby, 1992; Trevarthen, 1984; Tronick, 1989). In the context of this relationship, infants' simple self-regulatory mechanisms develop across the toddler years and become more elaborated, flexible, and independent in the preschool years.

During the toddler and preschool years, children are required to show more regulatory competence (Calkins & Johnson, 1998). Across these ages, children are expected to independently comply with caregiver directives, delay gratification, and follow rules and social norms (Maccoby, 1992). Indeed, from early toddlerhood to preschool age, caregiver demands shift from emphasizing safety to emphasizing rules governing social interactions and family routines (Gralinski & Kopp, 1993). This shift may reflect both children's growing developmental capacities as well as changes in caregivers' socialization goals. However, problems with self-control continue to arise when children's as yet fragile regulatory abilities are overtaxed by situational demands. Two ways in which caregivers support new child regulatory skills and convey standards for behavior are through structuring child activities and using control and discipline techniques to attain child compliance.

Structuring child activity. The classic work of Vygotsky (1978) highlights the pivotal role of caregivers in the organization of the child's activities, communication, and thinking. Caregivers structure a child's behavior within the "zone of proximal development". That is, parents help with tasks that the child has partially achieved but can fully achieve only with the aid of the caregiver. This allows the child to take the next developmental step, as it were, and move towards internalization of these abilities. More recent work on the caregivers' role in development also highlights the scaffolding role of caregivers, which leads to internalization (e.g., Rogoff, 1990; Rogoff et al., 1993). However, the focus on internalization of knowledge does not explain the mechanism by which social interaction leads to ways of self-regulating across contexts.

In other work, the structuring of children's activities has been termed external regulation (Thompson, 1994). In research with infants, parents have been characterized as being "external regulators" of their infant's emotional experience. By controlling environmental demands on the infant and providing the infant with resources for coping with the environment, caregivers provide external regulation for the infant and lay groundwork for internal regulation, or self-regulatory capacity by the infant.

The developmental structuralist approach to psychopathology in infancy and early childhood further articulates the role of the caregiver as external regulator (Greenspan & Porges, 1984). According to developmental structuralism, the environment, particularly the caregiver, critically influences whether the child develops adaptive or maladaptive capacities at each stage of development. For example, during preschool, caregivers help children with the salient developmental task of internalizing standards by conveying consistent standards and expectations, being emotionally available, and fostering a reality orientation. If caregivers cannot

do this, children will have a rigid and undifferentiated sense of self and have difficulty controlling behavior and emotions.

Control techniques. Another body of research focuses on how patterns of control in the relationship between caregivers and children influence child self-regulation. In one study, the balance of power and patterns of control differed among socially competent, aggressive, and anxious children and their mothers (Dumas, LaFreniere, & Serketich, 1995). In this study of 2- to-6-year-olds, competent children and their mothers had largely positive and reciprocal interactions, a finding that was consistent with research on mother-child dyads (Cole, Teti, & Zahn-Waxler, 2001; Emde, Biringen, Clyman, & Oppenheim, 1991; Gianino & Tronick, 1988; Kochanska & Aksan, 1995; Maccoby, 1984). Mother-preschooler dyads attempted to control each other relatively rarely and set firm limits on attempts at coercion. Aggressive children and their mothers were also relatively positive, but children often made attempts to coercively control their mothers. Their mothers responded inconsistently to these control attempts and did not oppose more extreme forms of coercion, such as aggression. Finally, anxious children and their mothers were generally negative and aversive. Mothers tried to control their children by being coercive and unresponsive while children attempted to control their mothers by being resistant and coercive.

In dyads with competent children, the “balance of power” favored the mother, but not at the expense of the child, whereas in dyads with aggressive children, the mother was not able to exercise appropriate control and the child had relatively more control. In dyads with anxious children, the mother had almost exclusive control, and the child therefore had insufficient opportunities to develop age-appropriate autonomy. The particular “balance of power” in each

type of dyad is hypothesized to maintain the nature of the parent-child relationship as well as the interactional and self-regulatory style of the child across social contexts.

Compliance and child temperament. In other research, characteristics of maternal demands have been linked to the early development of conscience as measured by compliance with maternal directives and internalization of maternal standards when mother is absent. The work of Kochanska and colleagues has focused on the influence of maternal demands and child characteristics such as age and temperament on the development of child compliance. This research articulates the link between compliance and internalization of standards, and argues that compliance therefore reflects the developmental shift from social-regulation towards self-regulation in childhood.

The quality of maternal demands is related to child compliance, both contemporaneously and longitudinally. For example, maternal strategies such as reasoning, consistency, and use of positive rewards have been linked to child compliance (Kuczynski & Kochanska, 1990), as has a mutually responsive orientation between mother and child (Kochanska, 1997a; 1997b) and level of power assertion (Kochanska, Coy, & Murray, 2001). In a longitudinal study of 1- to 3-year-olds, the content of maternal demands predicted later child compliance and oppositional behavior at 5 years of age (Kuczynski & Kochanska, 1995). Mothers who encouraged competence and pro-social behavior (e.g., “Share your cookies”) rather than focusing on safety and regulatory control (“Don’t hit”; “Sit up straight”) had children with enhanced compliance and fewer behavioral problems at 5 years.

However, in a study of 8- to 15-month-olds (Kochanska, Tjebkes, & Forman, 1998), children evidenced more internalization of standards (i.e., committed compliance, that is, compliance even when the mother is absent) when mothers focused on regulatory control by

using prohibitions than when mothers focused on child competence by encouraging children to initiate new behaviors. The converse was true in terms of situational compliance, that is, complying with maternal directives in the moment. Therefore, at early ages, prohibitions appear to be associated with the child's ability to internalize caregiver expectations and standards and apply those standards to other situations. Classic research (e.g., Mischel & Liebert, 1967) bolsters this interpretation, suggesting that the benefits of task facilitation versus prohibition are contingent on the age of the child. Younger children, as they build self-regulatory skill, may require the structure provided by prohibitions. Therefore, developmental period may be a particularly important aspect of the association between parental and child behaviors, most notably in early childhood.

In other research, relations between mother's discipline style and child compliance were also mediated by child characteristics, such as temperament (e.g., Kochanska, 1995; Kochanska, 1997b; Kochanska & Thompson, 1997). For relatively fearful/anxious children, mother's gentle discipline, which de-emphasizes power, predicted internalization of standards as reflected in compliance. Such a disciplinary style did not predict internalization in relatively fearless children. Rather, mutually positive mother-child orientation predicted compliance in fearless children. Other temperamental characteristics, such as inhibitory control (Kochanska, Murray, & Coy, 1997), and emotionality (Kochanska, Coy, Tjebkes, & Husarek, 1998) have also been studied as important moderating and mediating child characteristics.

In sum, according to Kochanska and colleagues, while parenting appears to predict the quality and effectiveness of child compliance, this association is sensitive to the age and temperament of child. It is unclear how specific parenting behaviors, particularly encouraging competence and pro-social behavior versus encouraging safety and regulatory control,

contemporaneously predict child self-regulatory behavior during the preschool years.

Furthermore, this research focuses on predicting the effectiveness of child self-regulation, as indexed by compliance, rather than the developmental costs and benefits of each style.

Promotion- and prevention-oriented parenting. While theories described above emphasize the role of social regulation in facilitating effective child self-regulation (e.g., Kopp, 1982; 1989; 1992 Greenspan & Porges, 1984; Thompson, 1994), it remains to be articulated how specific types of social-regulation lead to both strengths and vulnerabilities in child self-regulation. Self-discrepancy theory attempts to account for such individual differences by describing the role of the self in the transition from social- to self-regulation. In self-discrepancy theory, caregiver attempts to regulate child behavior can also, like the construct of regulatory focus, be characterized as promotion- or prevention-oriented. Caregivers often include both types of strategies in their parenting repertoire, but may tend to evidence predominantly one style (Higgins & Silberman, 1998). However, the theory does not describe the ways in which socialization often depends on the nature of the child's behavior (Grusec & Hildebrandt, 1997; Grusec & Kuczynski, 1980; Kochanska, 1990; Maccoby, 1992). While allowing for the influence of child characteristics such as temperament, self-discrepancy theory emphasizes the role of social-regulation in the development of self-regulation (Manian, Strauman, & Denney, 1998).

The theory highlights how caregivers communicate values and standards to children, and how these in turn influence children's broader self-regulatory and emotional tendencies (Higgins & Silberman, 1998). These differences in caregiver style are not distinguished in terms of "good" or "bad" parenting. Rather, the costs and benefits of each style are described. Promotion- and prevention-oriented parenting, or social-regulation, is predicted to be associated with distinct characteristics of the child's self-system and distinct child self-regulatory tendencies. Children of

parents using promotion-oriented strategies (bolstering and love-withdrawing modes) are likely to acquire a promotion-focus in which surviving in the world means accomplishing goals and fulfilling aspirations. Children of parents using prevention-oriented strategies (prudent and punitive modes) are likely to acquire a prevention-focus in which survival in the world means attaining safety and meeting obligations. In this way, regulatory-focus is a view of “how the world works” (Higgins, 1999; Higgins et al., 1998), such that regulation is organized around nurturance issues involving the presence or absence of positive outcomes or around security issues involving the presence and absence of negative outcomes. The strength of each regulatory focus depends on the strength and frequency of each type of parenting behavior, and both can co-exist.

As discussed above briefly, promotion-oriented parenting is geared towards facilitating ideal child behavior and is concerned with the ideal self and the presence and absence of positive outcomes. That is, parents who focus on ideals, their hopes and wishes that their child possesses certain characteristics, often relate to their children in terms of achieving those ideals.

Promotion-oriented parenting is bolstering when children meet ideal standards. Behaviors include encouragement of competence and pro-social behavior, nurturance, affection, and praise in order to promote positive child behavior. In the absence of positive child behavior (failure to meet ideal standards), promotion-oriented parents will tend to experience disappointment and withdraw love and nurturance from their children. Essentially, promotion-oriented parenting focuses on promoting and maximizing the presence of wished-for behavior in the child. This type of parenting conveys the message that attaining positive goals is a valued way of relating to the world.

To conform to their parents' promotion-focus, children, over time, construct an ideal self, representing parents' hopes and wishes for them. This ideal-self functions as a regulatory guide, and therefore, self-regulation emphasizes approaching positive outcomes. In this way, a specific form of social-regulation (promotion-oriented) leads to distinct styles of self-regulation (promotion-oriented which is approach-motivated). When challenged, children who are promotion-oriented actively engage in activities, focus on positive outcomes, and seek information. This style of self-regulation may be effective at times (e.g., children wait well because they continue to remind themselves that if they wait they will get a reward) and ineffective at other times (e.g., children barrage adults with questions about how long they have to wait, and become impatient when adults continually answer that they still have to wait). Moreover, because promotion-oriented self-regulation is associated with the ideal self, such a style co-varies with emotional tendencies identical to those associated with actual-ideal discrepancies. These are emotions related to the presence and absence of positive outcomes – happiness and sadness, respectively (Higgins, 1987).

Prevention-oriented parenting is organized around preventing children's deviation from standards of safety and duty. It is concerned with the ought self and the presence and absence of negative outcomes. That is, parents who focus on oughts, certain characteristics they consider a child's duty, obligation, or responsibility to possess, behave towards their child in terms of preventing deviation from those oughts. Prevention-oriented parenting is punitive when children fail to meet ought standards. Parenting behaviors may include prohibitions, punishment, and criticism. When encouraging children to meet ought standards, parenting is prudent, and may include monitoring safety and teaching children to follow rules and meet obligations. In the presence of negative child behaviors, these parents will tend to experience agitation-related

emotions such as anxiety and frustration. Essentially, prevention-oriented parenting is geared towards preventing and minimizing the presence of child behaviors that violate oughts. This type of parenting conveys the message that avoiding negative outcomes is a valued way of related to the world.

In response to prevention-oriented parenting, children, over time, construct an ought self, representing parents' demands and prescriptions for them. The ought self functions as a regulatory guide, and therefore, self-regulation emphasizes avoiding negative outcomes. In this way, a specific form of social-regulation (prevention-oriented) leads to a distinct style of self-regulation (prevention-oriented which is avoidance-motivated). When challenged, children who are prevention-oriented attempt to avoid the situation, passively distract themselves, focus on negative outcomes, and seek comfort. This style of self-regulation may be effective at times (e.g., children sit quietly and distract themselves while waiting for mothers to finish working) and ineffective at other times (e.g., children become clingy and demanding as they seek comfort from their mothers). Moreover, because prevention-oriented self-regulation is associated with the ought self, such a style co-varies with emotional tendencies identical to those associated with actual-ought discrepancies. These are emotions related to the presence and absence of negative outcomes – anxiety/nervousness and quiescence respectively (Higgins, 1987).

At first glance, promotion- and prevention-oriented parenting resemble authoritative and authoritarian parenting. The promotion orientation is similar to authoritative parenting because it emphasizes positive child behavior and bolsters child competence. The prevention orientation is similar to authoritarian parenting because it emphasizes negative child behavior and includes more prohibitions. However, both promotion- and prevention-oriented behaviors can include aspects of both authoritativeness and authoritarianism. For example, parents who encourage

entirely on self-report measures. For example, in one study (Higgins & Silberman, 1998), questionnaires were administered to mothers and their adolescent children in order to explore correlates of regulatory-focus. As predicted, mothers who more often reported responding to their children's behavior with promotion-oriented parenting also tended to report experiencing promotion-focused emotions (happiness and sadness), as did their children. In contrast, mothers who more often endorsed prevention-oriented parenting in response to child behaviors tended to report experiencing prevention-focused emotions (agitation and calm), as did their children. These findings were interpreted to mean that distinct regulatory-focuses are associated with different emotional tendencies and that parent regulatory-focus influences child regulatory-focus as evidenced by parallel emotional tendencies.

Though self-discrepancy theory's model of socialization has received little empirical support, these hypotheses provide a useful framework for conceptualizing the transition from social-regulation to self-regulation and offer unique predictions regarding how individual differences in parenting influence individual differences in child self-regulation. Furthermore, self-discrepancy theory does not make predictions regarding associations between parenting and the effectiveness of child self-regulation, instead articulating both costs and benefits of child self-regulatory styles.

The Present Study

Several predictions were tested:

1) Maternal regulatory-focus will account for differences in maternal parenting behavior. Specifically, greater promotion-related actual:ideal discrepancies will predict the presence of more promotion-oriented parenting. Similarly, greater prevention-related actual:ought discrepancies will predict more prevention-oriented parenting.

2) Maternal parenting behaviors will be linked to stylistic differences in child self-regulation. Specifically, maternal promotion-oriented parenting will be associated with promotion-oriented outcomes in children and prevention-oriented parenting with prevention-oriented outcomes in children. We also explored whether child temperamental approach and avoidance would predict child self-regulation. We expected that approach would be associated with promotion self-regulation and avoidance with prevention self-regulation. Self-discrepancy theory conceptualizes regulatory focus in terms of approach (promotion) and avoidance (prevention) tendencies, which are also considered dimensions of temperament. Child temperament has been extensively studied in terms of patterns of regulation (Fox, 1994; Rothbart & Derryberry, 1981), and self-discrepancy theory also suggests that temperamental predispositions are related to child self-regulation (Manian, Strauman, & Denney, 1998).

4) Self-discrepancy theory does not make predictions regarding associations between parenting and the effectiveness of child self-regulation, instead articulating the costs and benefits of each orientation. Therefore, we explored whether promotion- and prevention-oriented parenting would predict indices of the effectiveness of child self-regulation, namely, compliance, distress, and mother-reported social skills and problems. Finally, we examined the relations between temperament and effectiveness of self-regulation. Though approach and avoidance tendencies, like promotion- and prevention-orientations, may each predispose children towards regulatory strengths and weaknesses, previous literature suggests that approach tendencies lead to more adaptive outcomes than avoidance tendencies.

5) Promotion-oriented parenting and child self-regulation will co-vary with dejection-related positive and negative emotions such as happiness, sadness, and disappointment. Prevention-oriented parenting and child self-regulation will co-vary with agitation-related

positive and negative emotions such as relief, calm, and anxiety. It remains an open question whether behavior will predict emotional tendencies between as well as within members of the dyad.

Method

Participants

The participants included 116 3- and 4-year-olds and their mothers. Due to missing data, three 3-year-olds and their mothers were excluded from analyses. Therefore, the analyses involved 113 children. See Table 2 for the distribution of age and sex for child participants.

Children and mothers were recruited through advertisements and fliers distributed in local newspapers and day care and preschool bulletin boards in a small city in central Pennsylvania. The sample represented a broad range of socioeconomic status. Mean family income was \$58,494 ($SD = \$28,277$), and ranged between \$20,000 and \$200,000. The racial composition of the sample was predominantly Caucasian (83%). Participants included eight mother-child non-Caucasian dyads (one African-American, one Asian, and four biracial (Asian-Caucasian, Hispanic-Caucasian)). Two participants chose not to report their ethnicity.

Standard procedures for providing information and acquiring informed consent were used. Prior to the lab session, tasks were described briefly, and mothers were informed that the session would be videotaped to allow later coding of behavior and emotion. Interested mothers received a screening phone call during which demographic information was gathered and an appointment scheduled.

A team of undergraduate research assistants (all Caucasian females) was trained to conduct laboratory sessions. A separate team of coders (Caucasian males and females, including the author) reviewed videotaped recordings of the sessions to generate data for analyses. Except

for the author, coders were unaware of the hypotheses. Reliability procedures were used to insure that the author and all coders had achieved reasonable inter-rater agreement.

Maternal Self-Report Measures

Mothers completed the Selves Questionnaire (Higgins, 1987), a measure of self-discrepancies indexing regulatory focus, and the Social Skills Rating Scale (SSRS; Elliot, Gresham, Freeman, & McCloskey, 1988), a measure of child problems and social skills, while the child participated independently in laboratory tasks. During the *waiting task* (see below), mothers completed a questionnaire tapping attitudes and parenting and emotional experiences. Prior to the laboratory session, mothers reported on child temperament by completing the Child Behavior Scale (CBQ; Rothbart, Ahadi, & Hershey, 1994).

Maternal regulatory-focus. Mothers completed the *Selves Questionnaire* (See Appendix G), a measure developed and used extensively by Higgins (e.g., Higgins, 1987) to describe and calculate discrepancies between the actual self and the ideal and ought standards of the self. A promotion focus is reflected by the presence of ideal discrepancies and a prevention focus is reflected by the presence of ought discrepancies.

The *Selves Questionnaire* asks respondents to list up to 8 to 10 attributes for each of the three different self-states: (a) their actual self--the kind of person they believe they actually are; (b) their ideal self--the kind of person that someone (self or parents) would ideally like them to be (hopes, wishes, and aspirations); and (c) their ought self--the kind of person that someone (self or parents) believes they ought to be (duties, obligations, and responsibilities). The questionnaire is administered in two sections, the first involving the respondents' own standpoint and the second involving the standpoints of the respondents' parents.

Two variables, the actual-ideal and the actual-ought discrepancy scores, were created based on self-reported discrepancies between actual self-attributes and either ideal or ought self-attributes. Discrepancies were coded if the semantic meaning of an actual self-attribute had an antonym among the self-reported ideal and ought self-attributes. Congruencies, or synonymous meanings, between actual self-attributes and an ideal or ought self-attribute were also coded. The magnitude of the self-discrepancy between the actual self and each of the ideal and ought selves was calculated by summing the total number of synonyms with the actual self, then subtracting the total number of antonyms with the actual self (see Higgins, Bond, Klein, & Strauman, 1986). The resulting values were used in analyses as indices of the strength of promotion- and prevention-focuses. Note that a negative discrepancy score was also possible and reflected a relatively greater number of congruencies versus discrepancies. However, congruencies have not been used as an index of regulatory focus (Higgins & Silberman, 1998).

Maternal emotional experiences. During the *waiting task*, mothers were asked to rate the degree to which they experienced certain emotions concerning their children's ability to wait (see Appendix F). One question targeted their present experience during the laboratory session, and one targeted their experiences with waits at home. This portion of the measure was based on the Differential Emotions Scale (DES; Izard et al., 1974), but included only dejection and agitation related emotions relevant to the promotion and prevention focuses. Positive dejection related emotions were delighted, happy, and pleased. Negative dejection related emotions were disappointed, discouraged, and sad. Positive agitation related emotions were calm, relaxed, and relieved. Negative agitation related emotions were anxious, tense, and nervous. Like the DES, the measure asks respondents to endorse the degree to which they are experiencing an emotion on a 1 (feeling this emotion very slightly or not at all) to 5 (feeling this

emotion very strongly) scale. Ratings for each emotion, across both questions, were summed to create individual scores for dejection and agitation related emotions.

Maternal report of child temperament. Mothers completed the Child Behavior Questionnaire (CBQ; Rothbart, Ahadi, & Hershey, 1994), designed to measure children's temperamental predispositions for 15 aspects of behavior and emotion such as approach, avoidance (shyness), anger/frustration, attentional focusing, impulsivity, and inhibitory control. For the 195 items of the CBQ, mothers were asked to indicate what their child's reactions are likely to be in a given situation, using a 7-point Likert scale, with 1 being extremely untrue of the child, and 7 being extremely true of the child.

Temperament scales were calculated based on the procedure developed by the authors of the scale. The following scales were calculated for use in analyses: approach, avoidance (shyness), and anger/frustration. Scales were calculated by summing specific item responses, and then dividing that number by the number of items receiving a numerical response (that is, items not answered or checked off as "does not apply" were not used to determine the number of response items).

Maternal report of child social skills and child problems. The Social Skills Rating System (SSRS; Elliott, Gresham, Freeman, & McCloskey, 1988) is a 49-item measure assessing competent social behaviors and problem behaviors. Each child's mother completed this instrument while the child was participating in the puppet interview and other procedures. Mothers were asked to report on how often (0- never, 1- sometimes, 2- very often) their children evidence certain behaviors and how important (0- not, 1- important, 2- critical) those behaviors are to them. There are four social skills scales and two problem scales. Social skills scales are: *cooperation* - helping others, sharing, complying with rules; *assertion* - asking for information,

introducing self; *responsibility* - asking permission, reporting problems; and *self-control* - controls temper, responds appropriately when hit. Problem behavior scales are: *internalizing*- anxiety, sadness, loneliness, poor self-esteem; and *externalizing* - aggression, poor temper control, arguing. Individual scale scores are summed to generate total social skills and total problems scores.

Procedures

Each preschooler and mother spent approximately 90 minutes in the laboratory room, designed for very young children. The first 15-minutes of the session began with *informed consent* procedures. Mothers and children entered the laboratory room in which a novel experimenter waited, seated at a child-sized table. Following this period, children were encouraged to explore and play for approximately five minutes. Subsequent tasks included some that were part of the larger collaborative study. These are not reported but are summarized here. They were in order: (1) a 1-minute familiarization period assessing children's reactions to novelty, (2) a 20-minute puppet procedure assessing children's awareness that emotions can be regulated, (3) a 3-minute procedure involving a mishap by the experimenter that assessed children's awareness that others' distress could be regulated. See Appendix A for the complete list and order of lab procedures. The following tasks were used in the present study:

Impossibly Perfect Circles task. The Impossibly Perfect Circles task (IPC) followed the informed consent/familiarization period. The IPC task was designed to elicit boredom and frustration. The child was asked repeatedly to draw a "perfect" circle, with every circle being critiqued for its imperfections. This task provided an opportunity to observe emotion expressions, as well as child persistence or resignation during the task. The task was taken from

the Laboratory Temperament Assessment Battery (LabTAB; Goldsmith & Rothbart, 1988; Goldsmith & Rothbart, 1996).

The child sat at the child-sized table facing the camera and the experimenter sat at the child's left. The experimenter gave a piece of paper and a green pen to the child and asked, "Can you do me a favor? I need the PERFECT green circle. Could you draw it for me? I need the perfect green circle." Each circle that the child drew was critiqued by the experimenter (in a neutral voice), after which the experimenter asked the child to draw another one. Critiques were specific, but did not include any information on how to rectify the problem. Some examples of critiques include: "That one is too pointed (indicating point on the circle). Draw another one," "That one is too flat, draw another one," "That one is too skinny..., too small..., too large..., lopsided..., is an oval..., is not round..., is not quite right..., etc.,..."

The experimenter did not allow the child to turn the paper over to continue drawing on the back, saying, "No, I need you to draw the perfect circles on this side. Could you draw another one?" If the child said there was no more room, the experimenter said, "You can draw over the top of the other ones."

Three times throughout the episode, the experimenter said, "I need the PERFECT green circle." The task was terminated after 3 ½ minutes. After the final circle was drawn, the experimenter said (in a very pleasant voice), "That one looks pretty good (indicating the circle just completed). Circles are hard to draw, aren't they? Thanks for drawing all those circles. Would you like to make that one into a smiley face (indicating a suitable circle)? Let's give this to your mom later, okay?" Following this task, the child was given a perfect circle "certificate" with star stickers on it to reward their accomplishment.

Free play. For the 8-minute free-play (FP), mothers and preschoolers were given toys (from the *familiarization period*) and told to play with them together. The free-play procedure took place after the mother and child had been separated for approximately 25 minutes.

Waiting task. The 8-minute waiting task (WT) was designed to create an emotionally challenging situation, and provided an opportunity to observe child self-regulation and emotional expressions (Carmichael-Olson, Greenberg, & Slough, 1985). Before the WT began, the experimenter handed the mother papers to complete, gave the child a broken toy, and left an attractively wrapped surprise on the table. The mother, who was instructed in the procedure during the *informed consent*, told the child, "This is a surprise for you but you must wait until I finish my work to open it." The wait lasted until the child opened the surprise or eight minutes had elapsed. The mother was free to interact with her child as she wished. This procedure finished with the child's opening the prize (magnetic marbles) and playing with it, as well as a brief snack period. Following the waiting task, the mother was taken out of the room to complete remaining questionnaires.

Transparent Box task. The Transparent Box task (TB) was designed to elicit frustration or anger by preventing children from playing with a desired toy. Children were able to see the desired toy through a transparent plastic box but were given the wrong key with which to open the box. The task provided an opportunity to observe emotional expressions, as well as child persistence or resignation during the task. Like the IPC task, the TB task was also taken from the Laboratory Temperament Assessment Battery (LabTAB; Goldsmith & Rothbart, 1988; Goldsmith & Rothbart, 1996).

The child sat at a child-sized table facing the camera. The experimenter presented the child with a transparent box with a lock on the front and a set of keys. The experimenter

removed the correct key from the set so that none of the keys would fit the lock. The box contained two popular figurines, a Pokemon and a Lion King doll. The experimenter took the dolls out of the box, put them on the table in front of the child and asked, “Which toy do you like the best, the Pokemon or the Lion King doll?” After the child chose one of the toys, the experimenter put the other toy out of view and put the desired toy into the box, saying, “This is how we play this game. I’m going to put (name of desired toy) into my special box and put this lock on. You can use these keys to unlock the lock and open the box.” The experimenter showed the child how a key could go into the padlock, saying, “Here. Try to stick the end of the key into this little slit in the lock and then turn the key to unlock it.” Once the experimenter was sure the child knew how to use the key, he or she put the keys in front of the child, saying, “I’m going to let you work on that for awhile and when you open the box, you can play with the toy inside,” and immediately left the room.

The child was left alone to work on the box with the ring of incorrect keys for three minutes. The experimenter returned with the correct key and explained, “I guess I gave you the wrong keys. Let’s try this one.” The box was then opened and the child was encouraged to play for one minute with the toy that was inside. Following this, the mother was reunited with her child.

Data Coding and Reduction

Observations of parenting and child behaviors. Maternal and child behaviors were coded from videotaped records of the above tasks. The following constructs were coded for, and are described in detail below. Mothers’ behaviors (reacting to or commenting on what children did or said) during the FP and WT were coded according to a newly devised coding system for **promotion- and prevention-oriented parenting** (see Appendix B for coding system). Child

behaviors during the WT were also coded according to a newly devised coding system for **child promotion- and prevention-oriented self-regulation** (See Appendix C for coding system). Child self-regulation was coded during the frustrating task only because FP generally does not provide opportunities for regulation of negative emotions and behaviors. The degree of **child persistence** was coded during the IPC and TB tasks (see Appendix D for coding system). As in previous research, persistence was conceptualized as an index of child promotion self-regulation and resignation was conceptualized as an index of child prevention self-regulation (Crowe & Higgins, 1997; Forster, Higgins, & Idson, 1998). **Child compliance** during the WT and **child distress** during the IPC and TB tasks were coded as indices of child effective self-regulation (see Appendix D for coding system).

Promotion- and prevention-oriented parenting behavior. All maternal responses to child behaviors were assigned individual codes reflecting promotion or prevention orientation. Behaviors that did not conform to operational definitions were treated as non-codable. For each 10-second interval, maternal behaviors or verbalizations were recorded in sequence, and coded. Promotion-oriented behaviors are those that are responses to the presence or absence of positive child behavior. Examples include encouraging child competence and pro-social behavior, offering the child coping resources, showing affection and offering praise for positive child behavior, and expressing disappointment. Prevention-oriented behaviors are those that are responses to the presence or absence of negative child behavior. Examples include encouraging safety and regulatory control, showing appreciation for compliance with rules, criticizing, and bringing children's attention to their negative behavior or consequences of their behavior. Following coding, the frequency of all individual promotion and prevention codes was calculated

and summed to create single promotion- and prevention-orientated behavior scores for each mother.

Interrater agreement. Coders were trained using practice videotapes until they reached 75% agreement with one another. Reliability was calculated for the above coding systems used by four separate coding teams. Both percent agreement and Cohen's Kappa were used to determine interrater reliability. Equal numbers of videotapes were drawn from 3- and 4-year-old participants.

For maternal promotion- and prevention-oriented parenting, two coders were trained to code from videotaped recordings of the FP and WT. Twenty-percent of the videotapes (23 tapes) were randomly assigned to both coders in order to calculate interrater agreement. The average percent agreement was 83% (ranging from 73% - 93%), and the average Kappa coefficient was 79% (ranging from 68% - 88%), which reflects an excellent amount of agreement (Bartko, 1991; Fleiss, 1981).

Stylistic differences in child self-regulation: Promotion- and prevention-oriented self-regulation and persistence. Children's promotion- and prevention-oriented self-regulation was indexed by observed self-regulatory behavior during the WT and persistence during the IPC and TB tasks.

Ratings for the degree of promotion- and prevention-oriented self-regulation were based on the occurrence of behaviors and verbalizations reflecting promotion- and prevention-oriented self-regulation as well as the consistency and intensity of those behaviors. Promotion-oriented strategies are those that are approachful and organized around a positive outcome. They include problem-solving about the challenge and actively engaging in an enjoyable alternative activity. Prevention-oriented strategies are those that are avoidant and organized around a negative

outcome. They include avoiding the emotionally challenging situation and going to the mother for comfort. Promotion and prevention self-regulation was rated according to a 5-point global rating system (See Appendix C). Ratings were: 0- no promotion or prevention; 1 – minimal promotion or prevention; 2 – moderate promotion or prevention; 3 – mostly promotion or prevention; and 4 – high promotion or prevention. Children were assigned a rating for each 60-second interval during the 8-minute WT. Promotion and prevention self-regulation scores were calculated for each child as the sum of each rating for all 60-second intervals in the WT.

As an additional index of regulatory orientation, persistence was rated on a continuum during the IPC and TB tasks on a four-point scale, with higher numbers indicating more persistence and lower numbers indicating more resignation: 0 – gives up totally, clear resignation, 1 - continues to work, but without interest, often averting gaze away from task, 2 – mixed behavior, keeps focused on task but gaze averts once or twice, 3 – is totally focused on task, expresses interest. Children were assigned one rating for each task. Following coding, scores for both tasks were also summed to generate a total persistence score (See Appendix D).

Interrater agreement. For child promotion- and prevention-oriented self-regulation, two coders were trained to code from videotaped recordings of the WT. Twenty-percent of the videotapes (23 tapes) were randomly assigned to both coders in order to calculate interrater agreement. The average percent agreement was 78% (ranging from 66% - 100%), and the average Kappa coefficient was 74% (ranging from 60% - 100%), which reflects a good amount of agreement (Bartko, 1991; Fleiss, 1981).

For child persistence during the IPC and TB tasks, one coder and the author coded 20% of the videotapes (23 tapes). The average percent agreement was 95% (ranging from 88% -

97%), and the average Kappa coefficient was 89% (ranging from 84% - 95%), which reflects an excellent amount of agreement (Bartko, 1991; Fleiss, 1981).

Indices of effective child self-regulation: Compliance and distress. Compliance during the WT was coded on a 4-point scale according to a scheme based on Kochanska's coding of committed and situational compliance (Kochanska & Aksan, 1995; Kochanska, Tjebkes, & Forman, 1998; See Appendix D). Higher numbers indicate more compliance. Ratings were: 1 – defiance/resistance (over rejection of maternal directives); 2 – passive non-compliance (ignoring and reluctance to accept maternal directives); 3- situational compliance (generally compliant, but requiring maternal prompting); 4- committed compliance (fully and independently endorsing maternal agenda). Children were assigned one rating for the entire WT.

Distress during the IPC and TB tasks was coded on a 4-point scale, with higher numbers indicating more frustration/distress. Ratings were 1- does not appear frustrated or distressed; 2- appears slightly frustrated or distressed (sighs, talks to self – “this is hard”; makes a frustrated or sad looking face; makes a slightly irritated comment); 3- becomes visibly upset (clear emotional distress, but isn't overwhelmed; whines strongly); 4- overwhelmed (cries, whines loudly, tries to leave or leaves). Children were assigned one rating for each task. Following coding, scores for both tasks were also summed to generate a total distress score (See Appendix D).

Interrater agreement. For child distress during the IPC and TB tasks, and child compliance during the WT, one coder and the author coded 20% of the videotapes (23 tapes). The average percent agreement was 95% (ranging from 88% - 97%), and the average Kappa coefficient was 89% (ranging from 84% - 95%), which reflects an excellent amount of agreement (Bartko, 1991; Fleiss, 1981).

Child emotion expression. The presence of children's emotion expressions was coded continuously during the 8-minute WT and the TB task. Promotion-related emotions (happiness and sadness/dejection) and prevention-related emotions (anxiety and neutrality) were coded based on facial expressions, vocal quality, and postural cues (see Appendix E). Though not used in these analyses, anger was also coded. The frequency and duration (in seconds) of all emotions were recorded. Emotion blends (e.g., sad/angry) were also coded. Emotion was defined as the nonverbal component of communications, focusing not on what was said or done but on vocal cues (how it was being said) facial cues (the expression of the face during the communication or action), and gestural/postural cues (gestures using hands and arms, the posture of the body). Variations in vocal quality that capture affective tone include the volume, rate, flow of air, and pitch of the voice (e.g., lilting, firm). Variations in facial expression were based on muscle movements in the face (e.g., frown, smile). Variations in gestural/postural cues were based on hand and arm movements and body position (e.g., slumping head and shoulders, clapping with delight, finger wagging or jabbing).

Frequency scores for each emotion, and for total expression of promotion- and prevention-related emotions, were calculated by summing the number of seconds each emotion was expressed. Emotion blends were added to the calculation of sums, but the frequency was divided in half. That is, for a sad/angry blend lasting seven seconds, three-and-a-half seconds was added to the sad frequency value and three-and-a-half seconds was added to the angry frequency value.

Interrater agreement. For child emotion expressions during the WT and TB task, six coders were trained to code from videotaped recordings of these tasks. 13% of the videotapes (15 tapes) were randomly assigned to two coders at a time in order to calculate interrater agreement.

The average percent agreement was 79% (ranging from 70% - 90%), and the average Kappa coefficient was 70% (ranging from 52% - 84%), which reflects a good amount of agreement (Bartko, 1991; Fleiss, 1981).

Results

Overview

Self-discrepancy theory does not predict specific patterns of sex and age effects. Furthermore, this study was not intended to be a comparison of 3- and 4-year-olds. Therefore, preliminary independent sample t-tests were conducted to test whether sex and age of the child should be included in analyses. Paired-samples t-tests were also conducted to evaluate whether task differences existed. These analyses indicated that sex and task context were not significantly related to any dependent variables. Age of child was positively related to child promotion self-regulation, $t(111) = 2.03$, $p < .05$, and negatively with child prevention self-regulation, $t(111) = 1.98$, $p < .05$. Therefore, age, but not sex and task, was retained as a predictor variable.

Hypothesis One: Relations Between Maternal Regulatory-Focus and Parenting Behaviors

First, we tested whether maternal regulatory-focus predicted promotion- and prevention-oriented parenting behaviors. We predicted that the presence of actual:ideal discrepancies, reflecting a promotion focus, would be associated with promotion-oriented parenting behaviors and that the presence of actual:ought discrepancies, reflecting a prevention focus, would be associated with prevention-oriented parenting behaviors.

In almost all past studies using self-discrepancies, participants were included only if they could be classified as having a high discrepancy between the actual self and one self-guide (e.g., the ideal self) AND having little or no discrepancy between the actual self and the other self-guide (e.g., the ought self). Indeed, in these past studies, large numbers of participants needed to

be screened in order to find a sufficient number of individuals who had predominant actual-ideal and actual-ought discrepancies. In the present study, we did not screen participants for high self-discrepancies, and instead treated discrepancies as a continuous variable, which is consistent with previous research (e.g., Alexander & Higgins, 1993; Higgins & Tykocinski, 1992).

Preliminary analyses. Descriptive statistics for mothers' discrepancies and number of ideal and ought standards are presented in Table 3, and zero-order correlations among types of discrepancies are presented in Table 4.

Means for actual:ideal discrepancies and actual:ought discrepancies were below zero, indicating the presence of more congruencies than discrepancies. The degree of ideal and ought discrepancies were significantly correlated, $r = .75$, $p < .001$. This suggests that, in this sample, mothers who tended to experience discrepancies in relation to whom they wished to be (ideals), also tended to experience discrepancies in relation to whom they felt they ought to be (oughts).

Child temperament was analyzed as a predictor of maternal behavior, and Table 6 presents descriptive statistics for mother-reported child temperament. Table 7 presents descriptive statistics for promotion- and prevention-oriented parenting behaviors and Table 8 presents zero-order correlations between them as well as among the individual codes of which they were comprised. Mothers exhibited more promotion-oriented behaviors than prevention-oriented. Promotion- and prevention-oriented parenting behaviors were significantly correlated, $r = .39$, $p < .001$, as were individual codes. This suggests that many mothers tended to behave in both promotion- and prevention-orientated ways rather than evidencing just one style of interaction.

Analyses. Two hierarchical multiple regressions were conducted to examine whether maternal discrepancies contributed unique explained variance to maternal parenting behaviors.

The effect of discrepancies was tested after controlling for child characteristics that may influence parenting. Therefore, in each regression, child age was entered as Step 1, mother reported temperamental approach and avoidance were entered as Step 2, maternal promotion and prevention regulatory-focus (extent of ideal and of ought discrepancies) were entered as Step 3, and the promotion-focus x prevention-focus interaction term was entered as Step 4. The findings are presented in Table 10.

Promotion-oriented parenting. Child's age was the only significant predictor, and accounted for a unique 4% of the variance: older children had mothers who showed less promotion-oriented parenting. Maternal regulatory-focus did not account for a significant amount of explained variance in promotion behaviors.

Prevention-oriented parenting. Child's age was not a significant predictor. Child temperament scores accounted for 7% of the variance, adding a unique and significant 6% of the explained variance due to the effect of child temperamental avoidance: children who were more avoidant had mothers who showed less prevention-oriented parenting behaviors. Maternal regulatory-focus did not account for a significant amount of explained variance.

Summary. These equations were not significant, and accounted for only 6% to 10% of the variance. Counter to prediction, maternal regulatory focus was not linked to promotion and prevention parenting. Only child characteristics, age and temperamental avoidance, appeared to account for unique variance in maternal promotion and prevention parenting behaviors.

Hypothesis Two: Relations Between Social-Regulation and Self-Regulation

Next, we conducted seven hierarchical multiple regressions to examine whether mothers' observed parenting behavior predicted child self-regulation. We tested for these effects after controlling for child age and temperament (mother-reported approach and avoidance), and for

maternal regulatory-focus as measured by discrepancies. Both style and effectiveness of child self-regulation were examined, as measured by child promotion- and prevention-oriented self-regulation, persistence, compliance, distress, and mother-reported social skills and problems.

Specifically, we predicted that mothers' observed promotion-oriented parenting would predict promotion-oriented self-regulation in children and persistence during challenging tasks and that mothers' observed prevention-oriented parenting would predict prevention-oriented self-regulation in children and resignation during challenging tasks.

We also tested whether promotion- or prevention-oriented parenting predicted the indices of effective or less effective child self-regulatory ability (compliance, distress, social skills, problems).

Preliminary analyses. Means, standard deviations, and ranges for maternal variables (promotion-oriented behavior, prevention-oriented behavior) are presented in Table 7.

Means and standard deviations for child outcomes (child promotion self-regulation, child prevention self-regulation, child persistence, child compliance, child distress, and mother-reported child social skills and problems) are presented in Table 11, and zero-order correlations among the following are presented in Tables 12-14: all child outcomes (Table 12), child temperament and promotion and prevention self-regulation (Table 13), and child temperament and all other child outcomes (Table 14).

Correlations among child outcomes indicate a complex pattern of associations. In contrast to maternal promotion- and prevention-oriented behaviors, child promotion and prevention self-regulation are negatively correlated, $r = -.52$, $p < .001$, suggesting that children tend to evidence one style predominantly over the other. Also, persistence was not associated with promotion and prevention orientations as hypothesized. Persistence was unrelated to child promotion and

prevention self-regulation, was negatively related to distress, $r = -.52$, $p < .001$, and was inconsistently related to child temperament (see Table 14).

Analyses of styles of child self-regulation. We conducted three hierarchical multiple regressions to examine whether parenting contributed unique and explained variance to children's style of self-regulation (child promotion and prevention self-regulation and child persistence). The effect of parenting was tested after controlling for child and maternal characteristics that may influence child self-regulation. Therefore, in each regression, child age was entered as Step 1, mother reported temperamental approach and avoidance were entered as Step 2, maternal promotion and prevention regulatory-focus (extent of ideal and of ought discrepancies) were entered as Step 3, maternal promotion and prevention parenting scores were entered as Step 4, and the maternal promotion and prevention parenting interaction term was entered as Step 5. The findings are presented in Tables 16 and 17.

Child promotion-oriented self-regulation. Child's age was a significant predictor, accounting for 4% of the variance: with increasing age children showed increasing promotion self-regulation. Child temperament and maternal regulatory focus were not significant predictors. Parenting behavior accounted for 12% of the variance, adding a unique and significant 5% of the explained variance due to the effect of maternal prevention-oriented behaviors: mothers who showed more prevention-oriented parenting had children who showed less promotion-oriented self-regulation. The interaction term did not account for a significant amount of explained variance.

Child prevention-oriented self-regulation. Child's age was a significant predictor, accounting for 3% of the variance: with increasing age, children showed less prevention self-regulation. Child temperament and maternal regulatory focus were not significant predictors.

Parenting behavior accounted for 23% of the variance, adding a unique and significant 17% of the explained variance due to the effect of maternal prevention-oriented behaviors: mothers who showed more prevention-oriented parenting had children who showed more prevention-oriented self-regulation. The interaction term did not account for a significant amount of explained variance.

Child persistence. Child's age was not a significant predictor. Child temperament accounted for 5% of the variance, adding a unique and significant 5% of the explained variance due to the effect of child temperamental avoidance: children who showed more avoidance also showed more persistence. Maternal parenting behaviors accounted for 11% of the variance, adding a unique and significant 5% of the explained variance due to the effect of maternal prevention parenting: mothers who showed more prevention-oriented parenting behaviors had children who showed less persistence. The interaction term did not account for a significant amount of explained variance.

Summary. The equations for promotion and prevention self-regulation were significant, accounting for 15% to 24% of the explained variance, whereas the equation for persistence was not. Child age and maternal prevention parenting behaviors were significant predictors, and showed contrasting patterns for child promotion and prevention. For child promotion self-regulation, age was linked to increases in these behaviors and maternal prevention parenting behaviors were linked to decreases in child promotion behaviors, even after controlling for child temperament and maternal regulatory focus. The converse was true for child prevention self-regulation.

Analyses of the effectiveness of child self-regulation. We conducted four hierarchical multiple regressions to examine whether parenting contributed unique and explained variance to

indices of the effectiveness of children's self-regulation (observed compliance and distress, and mother-reported social skills and problems). The effect of parenting was tested after controlling for child and maternal characteristics that may influence child self-regulation. Therefore, in each regression, child age was entered as Step 1, mother reported temperamental approach and avoidance were entered as Step 2, maternal promotion and prevention regulatory-focus (extent of ideal and of ought discrepancies) were entered as Step 3, maternal promotion and prevention parenting scores were entered as Step 4, and the maternal promotion and prevention parenting interaction term was entered as Step 5. The findings are presented in Tables 17 and 18.

Compliance. Child's age was not a significant predictor. Child temperament accounted for 7% of the variance, adding a unique and significant 6% of the explained variance due to the effect of temperamental avoidance: children who were more avoidant showed greater compliance. Maternal regulatory focus was not a significant predictor. Parenting behavior accounted for 21% of the variance, adding a unique and significant 14% of the explained variance due to the effect of maternal prevention-oriented behaviors: mothers who showed more prevention-oriented behaviors had children who showed less compliance. The interaction term did not account for a significant amount of explained variance.

Distress. Child's age was not a significant predictor. Child temperament accounted for 10% of the variance, adding a unique and significant 8% of the explained variance due to the effect of temperamental approach and avoidance: children who were more approachful showed greater distress and those who were more avoidant showed less distress. Maternal regulatory focus was not a significant predictor. Parenting behavior accounted for 20% of the variance, adding a unique and significant 10% of the explained variance due to the effect of maternal prevention-oriented behaviors: mothers who showed more prevention-oriented behaviors had

children who showed more distress. The interaction term accounted for 25% of the explained variance, adding a unique and significant 5% of the explained variance. Post-hoc examination of the interaction revealed that mothers who showed high levels of prevention parenting and high levels of promotion parenting had children who showed more distress, but mothers who had high levels of prevention parenting and low levels of promotion parenting had children who showed less distress.

Social skills. There were no significant predictors of mother-reported child social skills.

Problems. Child's age was not a significant predictor. Child temperament accounted for 12% of the variance, adding a unique and significant 12% of the explained variance due to the effect of temperamental avoidance: children who were more avoidant showed more mother-reported problems. Maternal regulatory focus and parenting behaviors were not significant predictors.

Summary. The equations for child compliance, distress, and mother-reported problems were significant, accounting for 17% to 25% of the explained variance, whereas the equation for mother-reported child social skills was not significant. Child temperament and maternal prevention parenting behaviors were significant predictors, and showed a complex pattern of effects. Child temperament, particularly avoidance, was linked to both effective child outcomes (more observed compliance, less observed distress) and more mother-reported problems. Child temperamental approach was associated with more observed distress. On the other hand, maternal prevention parenting was linked with less compliance and more distress, particularly if mothers also showed high levels of promotion parenting. When showing low levels of promotion parenting, maternal prevention was linked with less child distress. There were no effects of

maternal regulatory focus, suggesting that maternal behaviors rather than attitudes best predict child self-regulation.

Hypothesis Three: Relations Between Regulatory Focus and Emotional Tendencies

The final set of analyses tested whether the regulatory-orientation of observed maternal parenting behaviors and child self-regulation were associated with distinct emotional tendencies in mothers and children. Specifically, we predicted that observed promotion-oriented behaviors will account for significant variance in maternal endorsement and child expression of promotion-related emotions such as happiness, sadness, and disappointment. Conversely, we predicted that observed prevention-oriented behaviors will account for significant variance in maternal endorsement and child expression of prevention-related emotions such as calm and anxiety.

Preliminary analyses. Descriptive statistics for mother and child emotions are presented in Table 19. They are: mother endorsed promotion-related emotions, mother endorsed prevention-related emotions, child expressed promotion-related emotions, and child expressed prevention-related emotions. Zero-order correlations between mother and child emotions are presented in Table 20. Mother promotion- and prevention-related emotions were highly correlated, as were child promotion- and prevention-related emotions. The only significant association between mother and child emotions was the negative association between maternal promotion-related emotions and child prevention-related emotions. Table 21 presents correlations between maternal and child behaviors and maternal emotions, and Table 22 presents correlations between maternal and child behaviors and child emotions.

Analyses of promotion- and prevention-related emotions. We conducted four hierarchical multiple regressions to examine whether maternal attitudes and parenting and child self-regulation contributed unique and explained variance to emotion expressive tendencies. The

effect of parenting and child self-regulation was tested after controlling for child and maternal characteristics that may influence child self-regulation. Therefore, in each regression, child age was entered as Step 1, mother reported temperamental approach and avoidance were entered as Step 2, maternal promotion and prevention regulatory-focus (extent of ideal and of ought discrepancies) were entered as Step 3, maternal promotion and prevention parenting scores were entered as Step 4, child promotion and prevention self-regulation scores were entered as Step 5, the maternal promotion and prevention parenting interaction and the child promotion and prevention self-regulation interaction terms were entered as Step 6, and the four mother and child interaction terms were entered as Step 7 (maternal promotion and child promotion, maternal promotion and child prevention, maternal prevention and child promotion, and maternal prevention and child prevention). The findings are presented in Tables 23 - 26.

Maternal promotion-related emotions. Though the F-change statistics indicated that none of the blocks accounted for unique and significant explained variance in maternal promotion-related emotions, F-tests showed that several variables were significantly linked to maternal promotion emotions. Child's age was not a significant predictor. Child temperament accounted for 4% of the variance due to the effect of temperamental approach: Children who were more approachful had mothers who reported more promotion-related emotions. Two other significant predictors emerged, but again, their addition did not explain a unique and significant portion of the explained variance. Maternal prevention parenting was negatively linked with maternal promotion emotions: Mothers who showed more prevention parenting reported fewer promotion-related emotions. The interaction between maternal prevention behaviors and child promotion self-regulation was also significantly linked with maternal promotion emotions: When children showed high levels of promotion self-regulation, mothers low in prevention parenting reported

more promotion-related emotions and those high in prevention parenting reported fewer promotion emotions. There were no other significant predictors.

Maternal prevention-related emotions. Child's age was not a significant predictor. Child temperamental approach accounted for 5% of the variance, but did not significantly add to the explained variance: Children who were more approachful had mothers who reported more prevention-related emotions. The interaction between child promotion and prevention self-regulation accounted for 14% of the explained variance, adding a unique and significant 6% of the explained variance. Post-hoc examination of the interaction revealed that when children showed low levels of promotion self-regulation, the presence of more prevention self-regulation was linked with more maternal prevention-related emotions and less prevention self-regulation was linked with fewer maternal prevention-related emotions.

Child promotion-related emotions. Child's age and temperament, and maternal regulatory focus and parenting were not significant predictors. Child promotion self-regulation accounted for 10% of the variance, adding a unique and significant 7% of the explained variance: Children who showed more promotion self-regulation also showed more promotion-related emotions. The interaction term for maternal promotion parenting and child promotion self-regulation accounted for 21% of the explained variance, adding a unique and significant 9% of the explained variance. Post-hoc examination of the interaction revealed that, for children whose mothers who showed low levels of promotion parenting, more child promotion self-regulation was linked with more promotion emotions and less child promotion self-regulation was linked fewer promotion-related emotions.

Child prevention-related emotions. Child's age and temperament, and maternal regulatory focus and parenting were not significant predictors. The interaction term for maternal

promotion parenting and child promotion self-regulation accounted for 19% of the explained variance, adding a unique and significant 11% of the explained variance. Post-hoc examination of the interaction revealed that, for children whose mothers showed low levels of promotion parenting, more child promotion self-regulation was linked with the expression of fewer prevention emotions and less child promotion self-regulation was linked with more prevention-related emotions.

Summary. Only the equation for child promotion-related emotions was significant, accounting for 21% of the explained variance. However, the presence of significant effects within the regression equations highlighted the importance of child temperament and interactions between maternal and child behavior in predicting emotional tendencies. Child promotion-oriented self-regulation was linked with child promotion-related emotions (happiness and dejection). The interaction between maternal and child promotion-oriented behaviors was also linked to both child promotion and prevention emotions. When mothers showed low levels of promotion parenting, child promotion self-regulation positively predicted promotion emotions and negatively predicted prevention emotions. Interestingly, child temperament was not linked to child emotions, but was linked to mothers' self-reported emotional tendencies. Child approach was linked to the presence of both maternal promotion and prevention emotions. Furthermore, low maternal prevention parenting, in conjunction with high levels of child promotion self-regulation, was associated with more maternal promotion-related emotions. Finally, children who showed more prevention self-regulation, while also evidencing low levels of promotion, had mothers who reported more prevention-related emotions.

Discussion

This study examined whether a mothers' world view, defined by the manner in which her own self-regulation is organized, influences her efforts to socialize her child's self-regulation. Specifically, we examined associations between maternal regulatory-focus and parenting behaviors, those behaviors and child self-regulation during challenging tasks, and maternal and child behaviors and their emotions. This study investigated how the organization of self, a personality variable, influences the organization of parental behavior, and how that behavior may contribute to a child's own style of self-regulation. In the process, the study was a first test of a hypothesis of self-discrepancy theory that parents transmit their views of self and the world by virtue of how they promote positive outcomes or alternatively prevent negative outcomes. Results emphasized the utility of this framework, as well as the need to articulate child characteristics relevant to socialization and pathways to both stylistic differences and effectiveness of child self-regulation.

The study concentrated on preschool age children and their mothers because these years are noted for their role in the acquisition and establishment of child self-regulation (Kopp, 1982). In this age group, it was possible to examine the socializing messages parents convey through their own behavior, which were predicted to influence stylistic differences in how children regulate their own behavior. The study demonstrated relations between parenting and child behaviors and emotions, although not maternal self-organization, setting the stage for subsequent research that could test the developmental hypothesis that maternal behavior plays a contributing, causal role.

Maternal Regulatory Focus and Parenting Behavior

Previous research had not established firm correspondences between parental attitudes or views and parenting behavior, though a few studies documented that parents tend to endorse parenting behaviors that they themselves use (e.g., Kochanska, 1990). Similarly, in this study, regulatory-focus as a parental attitude did not predict the nature of parenting behaviors, though child characteristics did. This may have been due to our treatment of regulatory-focus. Most past research used extreme groups (those with high and exclusive discrepancies in either the ideal or ought domain), whereas we used discrepancies as a continuous index of regulatory-focus. The presence of high discrepancies, theoretically, increases the likelihood that regulatory-focus will be activated and thus influence behavior. Therefore, while there was precedence for using discrepancies as a continuous variable, we may have found significant effects with the use of extreme groups. However, this sample of mothers tended to show more congruencies than discrepancies between their view of self and their goals, and, when showing discrepancies, had discrepancies indicating both a promotion and prevention focus. Since a theory of socialization should attempt to capture socializing mechanisms that operate for most individuals, the utility regulatory-focus may benefit from reducing attention to extreme groups, which may not be typical. Instead, more research is needed concerning the implications of a moderately strong regulatory focus, and how regulatory-focus is activated in response to specific situations and persons rather than how it is a general regulatory disposition.

Although most research on self-discrepancy theory classifies individuals' actual self views as either discrepancy from their ideals or their oughts, the two forms of discrepancies and associated parenting behaviors were highly related for mothers in this study. That is, mothers tended to evidence both promotion and prevention regulatory-focuses and may have oscillated

between styles during interactions with their children. Studies of discrepancy induction have shown that, independent of dispositional tendencies, regulatory focus can be intermittently activated so as to influence behavior in the moment (e.g., Higgins & Tykocinski, 1992). In sum, these findings imply the need to study how regulatory-orientations are related to situational and relationship factors during interactions.

Although maternal regulatory-focus did not predict maternal behaviors, child temperamental avoidance was related to maternal prevention parenting. Children who were more avoidant had mothers who showed less prevention-oriented parenting. This may reflect a compensatory process, such that mothers decreased prevention-oriented behaviors (which are avoidant-oriented) because they wished to ameliorate or moderate child avoidance. This further suggests that children were not passive recipients of mothers' socialization. Rather, child temperament was an important co-determinate of socialization.

Social-Regulation and Self-Regulation

In contrast to the lack of relations between maternal regulatory-focus and parenting behaviors, associations between maternal behaviors and child self-regulation were largely consistent with predictions. These relations were strongly dependent on interactions between mother and child behaviors, and differed according to whether stylistic differences or effectiveness of child self-regulation were examined.

Stylistic differences in child self-regulation: Promotion and prevention orientations.

Promotion- and prevention-oriented self-regulation was indexed by observed self-regulatory behaviors, and persistence-resignation during challenges. Findings revealed that child self-regulation was associated with promotion- and prevention-oriented parenting behaviors, but not with maternal regulatory focus. That is, in order for regulatory-focus to influence child self-

regulation, mothers must behave in ways that promote different styles of self-regulation. Mothers who evidenced more prevention-oriented parenting had children who showed more prevention-oriented self-regulation and less promotion-oriented self-regulation and persistence (that is, more resignation). Maternal promotion-oriented behaviors alone did not predict child self-regulation. Most mothers evidenced more promotion- than prevention-oriented parenting. Promotion-oriented behaviors, because they focus on encouraging competence and positive achievement, may reflect a predominant style of socialization in U.S. mothers, and therefore had less predictive power to differentiate types of mothers and children (Rogoff et al., 1993).

Unlike maternal promotion and prevention behaviors, results suggested that children tended to predominantly evidence one style of self-regulation. However, because child self-regulation was observed only during the WT rather than across two tasks, children may have gravitated towards one style of self-regulation. For mothers, who were observed across two contrasting tasks, they may have used a greater variety of strategies in response to contextual and relational cues.

Interestingly, persistence was unrelated to child promotion- and prevention-oriented self-regulation and was, counter-intuitively, positively associated with child temperamental avoidance. Therefore, the nature of persistence in this study was unclear. Consistent with previous research in self-discrepancy theory and control theory (Carver & Scheier, 1982; Higgins, Roney, Crowe, & Hymes, 1994), persistence and resignation were considered indices of approach and avoidant self-regulatory systems, but results of this study did not support this conceptualization. Work by others (e.g., Dweck, 1986; Eisenberg et al., 2001; Mueller & Dweck, 1998; Smiley & Dweck, 1994) suggests that persistence at an achievement task (puzzles and hidden figure tasks) reflects effortful and therefore adaptive self-regulation whereas resignation

reflects helplessness and therefore maladaptive self-regulation. In this previous research, persistence has also been interpreted to reflect the motivation to learn and the tendency to relish challenge.

In the present study, it was unclear whether persistence might have tapped regulatory competence and the motivation to learn. For example, the transparent box could not be opened because the child was given the wrong key. Therefore, giving up after trying it for a while and waiting for (the soon to return) adult to help may reflect an attempt to regulate frustration or distress rather than a failure of regulatory competence or a poor motivation to learn. Distress during these tasks may more accurately index lower regulatory competence. Indeed, persistence was negatively related to distress, and thus might indeed have reflected regulatory success. If this is the case, the positive association between persistence and child temperamental avoidance challenges the assumption that avoidant tendencies are less adaptive than approach, and suggests that the adaptiveness of temperamental predispositions is age and situation-specific.

Finally, age was associated with child self-regulation. 4-year-olds evidenced more promotion-oriented self-regulation and less prevention self-regulation than 3-year-olds. This suggests that the promotion-orientation may reflect a more mature approach to self-regulation, though such an association with age does not necessarily indicate increasing maturity. While greater regulatory control and cognitive sophistication (e.g., in Theory of Mind development) have been documented between ages three and four (Kopp, 1982; Wellman, 1990; Wellman, Cross, & Watson, 2001) results below suggest that there were not age differences in the effectiveness of child self-regulation. Instead, increased promotion-oriented self-regulation in 4-year-olds may reflect their ability to more actively and independently engage in alternative activities during a wait rather than passively self-distract or seek maternal comfort.

Effectiveness of child self-regulation. The effectiveness of child self-regulation was indexed by child compliance, child distress, and mother-reported social skills and child problems. Child compliance, distress, and mother-reported problems were predicted by mother and child characteristics. Mothers who showed more prevention-oriented parenting had children who were more distressed and less compliant. This is consistent with previous research, in which mothers who focused on safety and regulatory control (aspects of a prevention-focus) had children who were less compliant (e.g., Kochanska & Kuczynski, 1995). This may indicate that prevention-parenting leads to less compliance, or may simply reflect that mothers of non-compliant and distressed children in the present study needed to focus more on rules, safety, prohibitions, and control when interacting with their children.

Child temperament was not definitively related to effective or ineffective child self-regulation. Temperamental avoidance was positively associated with mother-reported problems but negatively associated with observed distress. Temperamental approach was positively associated with distress. Since distress (which included any sign of upset) was observed during frustrating tasks, the latter result may indicate that approach tendencies are associated with greater expression of negative emotions resulting from the experience of obstacles and blocked goals, such as frustration and anger (Izard & Ackerman, 2000). These findings speak to the need to better sample child and mother behavior over time and across contexts. It may have been that, had we observed child distress at home or in a situation eliciting other emotions, we may have detected different patterns of association.

These findings give a slight impression that the promotion orientation reflects “good” parenting and self-regulation and the prevention orientation reflects “bad” parenting and self-regulation. That is, maternal prevention parenting was associated with less child persistence and

compliance, and more child distress. However, these associations do not indicate causation. Instead, as noted above, these findings may reflect child effects. Indeed, child temperament was also related to effectiveness of child regulation and to parenting behavior. Longitudinal research would better strengthen the inference that maternal parenting is influencing the nature of child self-regulation, and allow for examination of the role of child temperament.

Both promotion- and prevention-orientations include strengths and vulnerabilities. For example, mothers' promotion-oriented behaviors include praise, but also include love withdrawal and disappointment. Prevention-oriented mothers may criticize their children for negative behavior, but may also cultivate child adherence to rules. Similarly, promotion-oriented children may actively amuse themselves instead of seeking comfort from their mother, but also may pester their mothers as they seek information about how to self-regulate, and prevention-oriented children may both cling to their mothers, but be able to wait patiently as they passively self-soothe. Conceptualizing child self-regulation in terms of both strengths and vulnerabilities may improve our ability to study mother-child behavioral associations, as well as variation over time and context in child self-regulation, risk, and resilience.

The conceptualization of parenting behaviors as being sensitive to relational cues and varying during interactions is most consistent with both our data and with theories of contextual and relationship sensitivity in the socialization process (Grusec et al., 1997). Parents "externalize" or transmit their views to children in relation to situational demands and child factors, while children, rather than accept socialization wholesale, select what to internalize based on individual and relationship factors (Kuczynski & Hildebrandt, 1997). Therefore, it may be inaccurate to conceptualize a lack of direct association between mother and child behaviors as a failure of socialization or of the research endeavor. Indeed, such dissociations, and the presence

of dyadic reciprocity, may reflect the co-construction of socialization processes between mothers and children. It is vital to examine these dissociations in order to gain insight into how mothers and children update and change their behaviors and views of the world in light of transactions with each other and changing contexts. This study would thus have benefited from observing several contexts, different caregivers, and children at several ages.

Promotion- and Prevention-Related Emotions

Consistent with self-discrepancy theory, results revealed associations between promotion- and prevention- orientations and emotional tendencies. Child promotion- and prevention-oriented self-regulation appeared central to the associations between behavior and emotion, thus highlighting the importance of child effects. Child promotion-self-regulation was positively associated with child promotion-related emotions and negatively associated with prevention related emotions (when mothers showed low levels of promotion parenting). Parenting alone did not predict child emotional tendencies. When mother-child patterns of behavior predicted emotional outcomes, the presence of child behavior seemed most vital. For example, mothers showed more promotion-related emotions only if their children showed high levels of promotion self-regulation. Consistent with previous work, these findings may indicate that children drive the emotional tenor of socialization exchanges (e.g., Trevarthen, 1984). Future research may benefit from more carefully examining behavioral contingencies between mothers and children in predicting emotions and from delineating how regulatory focus differentially predicts emotions in valence-sensitive ways.

Summary and Future Directions

Results supported the central hypotheses of this study, implied several important points about socialization, and pointed to future directions for research.

Maternal regulatory-focus was not associated with the regulatory-orientation of maternal parenting behaviors as predicted. However, dissociations between maternal attitudes and maternal behaviors may reveal important characteristics of the socialization process. For example, this lack of clear continuity between maternal attitudes and parenting may suggest, not a failure of theory or research method, but that these associations are sensitive to selection processes based on relationship and contextual influences. In studying maternal attitude-parenting correspondences, it is important to evaluate how factors in the moment might shape the ways in which mothers express attitudes and values during socializing interactions with children.

In contrast to maternal attitude-behavior relations, findings demonstrated significant associations for promotion parenting and child age with child promotion- and prevention-oriented self-regulation. In contrast, prevention parenting and child temperamental characteristics predicted indices of effective child self-regulation. This points to the need to conceptually distinguish between stylistic differences and the effectiveness of child self-regulation as well as to more fully describe parenting styles that may be associated with specific differences in self-regulation. Furthermore, more emphasis needs to be placed on the multiple determinants, including mother-child transactional processes and situational context, of child self-regulation. Theory and empirical investigations have rarely articulated both strengths and vulnerabilities associated with individual styles of self-regulation. To understand self-regulation as transactional and dynamic, it must not be conceptualized as simply qualitatively good or bad, but must be construed from a developmental psychopathology perspective, articulating sources of risk and resilience (Cicchetti et al., 1991).

Findings emphasized the importance of child effects. Child temperament was associated with maternal prevention-oriented parenting and child effective self-regulation and child self-

regulation was associated with emotional tendencies in both mothers and children.

Developmental psychology, though moving towards transactional and co-determination views of socialization, continues to err on the side of construing children as passive recipients of socialization (Grolnick, Deci, & Ryan, 1997; Kuczynski and Hildebrandt, 1997; Kuczynski et al., 1997; Valsiner et al., 1997). As research moves forward, there will be an increasing need to describe socializing interactions in terms of dyadic processes, and continuity and change of socialization processes across time and contexts.

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APPENDIX A

Table 1

Regulatory-Focus

	Promotion Regulatory-Focus	Prevention Regulatory-Focus
Outcome Focus	Positive	Negative
Regulatory Tendency	Approach	Avoid
Relevant Self-Guide	Ideal	Ought
Positive Outcome Emotions	Happy, satisfied	Calm, relieved
Negative Outcome Emotions	Dejection (sad, disappointed)	Agitation (fear, anxiety)

Table 2

Descriptive Statistics for Sample Characteristics

<u>Age</u>	<u>Gender</u>	<u>n</u>	<u>M Age</u> <u>(months)</u>	<u>SD</u>	<u>Range</u>
3	M	28	42.50	3.47	36 – 47
	F	27	43.00	3.56	36 – 47
	Total	55	42.75	3.49	36 – 47
4	M	30	53.30	3.15	49 - 59
	F	28	52.86	3.03	49 - 58
	Total	58	53.09	3.07	49 - 59

Table 3

Descriptive Statistics for Maternal Regulatory-Focus: Focus on Ideals (Promotion Focus) and Focus on Oughts (Prevention Focus)

Focus on Ideals	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Number of ideals listed	10.34	4.43	2 – 19
Actual:ideal discrepancy	-1.29	4.99	-16 – 14
Focus on Oughts			
Number of oughts listed	9.95	4.20	2 – 19
Actual:ought discrepancy	-2.09	4.40	-16 – 9

Table 4

Zero-Order Correlations Among Actual:Ideal Discrepancies (A:I), Actual:Ought Discrepancies (A:O),
and Number of Ideal and Ought Standards Listed

	A:I	A:O	# of Ideals	# of Oughts
A:I	--	.75***	-.25**	-.20*
A:O	.75***	--	-.24**	-.30**
# of Ideals	-.25**	-.24**	--	.81***
# of Oughts	-.20*	-.30**	.81***	--

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

Table 5

Zero-Order Correlations Between Discrepancies and Maternal Promotion- and Prevention-Oriented Behaviors
and Child Promotion and Prevention Self-Regulation

	Mother Promotion	Mother Prevention	Child Promotion	Child Prevention
A:I	.06	-.08	-.08	.10
A:O	.02	-.07	-.16	.08

All correlations non-significant

Table 6

Descriptive Statistics for Mother-Reported Child TemperamentalApproach and Avoidance

	<u>Total (n = 113)</u>			<u>3 years (n = 55)</u>			<u>4 years (n = 58)</u>		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Mother Reported Approach	5.22	.68	0 - 6.77	5.21	.66	3.38 - .77	5.05	1.18	0 - 6.46
Mother Reported Avoidance	3.52	1.35	0 - 6.92	3.50	1.37	1.00 - 6.85	3.41	1.46	0 - 6.92

Table 7

Descriptive Statistics for Maternal Promotion and Prevention Parenting: Total Scores and Individual Codes

	<u>Promotion</u>			<u>Encouraging Competence & Pro-social Behavior</u>			<u>Commenting on the Positive</u>			<u>Disappointment</u>		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
FP	67.50	22.28	13 - 130	58.06	20.07	11 - 119	9.42	6.04	0 - 30	.02	.19	0 - 2
WT	26.97	15.42	11 - 95	24.47	14.62	1 - 89	2.43	2.77	0 - 16	.07	.75	0 - 8
Total	94.47	30.72	20 - 177	82.53	29.01	20 - 147	11.85	6.78	0 - 33	.09	.77	0 - 8

	<u>Prevention</u>			<u>Encouraging Safety & Regulatory Control</u>			<u>Commenting on the Negative/Approval for Compliance</u>			<u>Criticism</u>		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
FP	7.56	5.92	9 - 85	2.18	2.57	0 - 12	5.29	4.37	0 - 26	.09	.53	0 - 5
WT	9.17	8.06	11 - 92	5.91	6.16	0 - 35	3.20	3.73	0 - 20	.05	.26	0 - 2
Total	16.73	11.70	20 - 147	8.09	7.54	0 - 40	8.50	6.58	0 - 40	.14	.58	0 - 5

Table 8

Zero-Order Correlations Among Maternal Promotion and Prevention Parenting Behaviors: Total Scores and Individual Codes

	Promotion	Competence	Positive	Disappointment	Prevention	Regulatory Control	Negative/ Approval Compliance	Criticism
Promotion	--	.97***	.36***	.07	.39***	.30**	.37***	-.15
Competence	.97***	--	.13	-.02	.38***	.30**	.34**	-.13
Positive	.36**	.13	--	.29**	.16	.07	.22*	-.09
Disappointment	.07	-.02	.29**	--	.02	.06	-.03	-.03
Prevention	.39***	.38***	.16	.02	--	.84***	.79***	.29**
Regulatory Control	.30**	.30**	.07	.06	.84***	--	.33**	.19*
Negative/ Approval Compliance	.37***	.34**	.22*	-.03	.79***	.33**	--	.21*
Criticism	-.15	-.13	-.09	-.03	.29**	.19*	.21*	--

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

Table 9

Zero-Order Correlations Between Child Temperament and Maternal Promotion and Prevention Behaviors

	Mother Promotion	Mother Prevention
Reported Approach	.02	.10
Reported Avoidance	-.08	-.21*

* = $p < .05$

Table 10
 Prediction of Maternal Promotion- and Prevention-Oriented Parenting: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4	
	F	B	F	B	F	B	F	B
Dependent variable: Maternal Promotion								
Child age	2.24*	-.21	2.24*	-.21	2.21*	-.21	2.14*	-.21
	R ² = .04 Fch = 5.05*							
Child temperamental approach			<1	.03	<1	.03	<1	.03
Child temperamental avoidance			<1	-.09	<1	-.09	<1	-.09
			R ² = .05 Fch = .44					
Promotion regulatory-focus					<1	.10	<1	.10
Prevention regulatory-focus					<1	-.06	<1	-.07
					R ² = .06 Fch = .28			
Promotion x prevention regulatory-focus							<1	-.03
							R ² = .06 Fch = .10	
			Overall F(6, 112) = 1.04ns					

Dependent variable: Maternal Prevention								
Child age	<1	-.07	<1	-.07	<1	-.07	<1	-.06
	R ² = .01 Fch = .59							
Child temperamental approach			1.61	.15	1.68	.16	1.84	.18
Child temperamental avoidance			2.61**	-.25	2.65**	-.25	2.87**	-.28
			R ² = .07 Fch = 3.94*					
Promotion regulatory-focus					<1	-.10	<1	-.10
Prevention regulatory-focus					<1	-.001	<1	-.04
					R ² = .08 Fch = .55			
Promotion x prevention regulatory-focus							1.45	-.14
							R ² = .10 Fch = 2.10	
			Overall F(6, 112) = 1.95ns					

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

Table 11

Descriptive Statistics for Child Outcomes: Promotion and Prevention Self-Regulation, Persistence, Distress, Compliance, and SSRSScores

	<u>Total (n = 113)</u>		<u>3 years (n = 55)</u>		<u>4 years (n = 58)</u>	
	Mean	SD	Mean	SD	Mean	SD
Child Promotion	14.67	6.02	13.51	5.44	15.78	6.39
Child Prevention	9.63	5.90	10.75	5.53	8.57	6.10
Child Persistence	5.25	1.61	5.24	1.53	5.26	1.67
Child Compliance	2.99	1.00	3.09	1.01	2.90	.97
Child Distress	3.90	1.45	3.69	1.56	4.10	1.33
SSRS: Cooperation	12.79	2.45	12.65	2.43	12.71	2.99
SSRS: Assertion	14.49	2.92	14.65	2.90	14.33	2.95
SSRS: Responsibility	10.62	3.13	10.22	3.11	10.81	3.42
SSRS: Self-Control	12.86	2.57	13.04	2.91	12.69	2.22
SSRS: Social Skills Total	50.38	9.07	49.80	10.19	50.05	10.29
SSRS: Internalizing	1.32	1.45	1.11	1.15	1.50	1.68
SSRS: Externalizing	5.73	4.99	5.33	1.43	6.12	6.84
SSRS: Problems Total	6.52	2.34	6.44	1.98	6.48	2.78

Table 12

Zero-Order Correlations Among Child Outcomes: Compliance, Persistence, Distress, Promotion and Prevention Self-Regulation, and SSRS Scores

	Compliance	Persistence	Distress	Promotion Self-Regulation	Prevention Self-Regulation	SSRS: Social Skills	SSRS: Problems
Compliance	--	.17	-.24**	.12	-.28**	-.04	.07
Persistence	.17	--	-.52***	.01	-.05	-.17	.04
Distress	-.24**	-.52***	--	-.02	.22*	.17	-.03
Promotion Self-Regulation	.12	.01	-.02	--	-.52***	.04	.08
Prevention Self-Regulation	-.28**	-.05	.22*	-.52***	--	-.04	.17
SSRS: Social Skills	-.04	-.17	.17	.04	-.04	--	-.30**
SSRS: Problems	.07	.04	-.03	.08	.17	-.30**	--

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

Table 13

Zero-Order Correlations Between Child Temperament and Child Promotion and Prevention Self-Regulation

	Child Promotion Regulation	Child Prevention Regulation
Reported Approach	.04	.12
Reported Avoidance	-.01	-.04

All correlations non-significant

Table 14

Zero-Order Correlations Between Child Temperament and Child Outcomes: Persistence, Distress, Compliance, and Mother-Reported Social-Skills and Problems

	Persistence	Distress	Compliance	Social Skills	Problems
Reported Approach	.00	.19*	.01	.00	.18
Reported Avoidance	.22*	-.14	.23*	-.21*	.32**

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

Table 15

Zero-Order Correlations Between Maternal and Child Promotion and Prevention Behaviors

	Child Promotion	Child Prevention	Mother Promotion	Mother Prevention
Child Promotion	--	-.52***	.05	-.17
Child Prevention	-.52***	--	.14	.43***
Child Persistence	.01	-.05	-.13	-.29**
Mother Promotion	.05	.14	--	.39***
Mother Prevention	.17	.43***	.39***	--

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

Table 16
 Prediction of Child Promotion- and Prevention-Oriented Self-Regulation: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		
	F	B	F	B	F	B	F	B	F	B	
Dependent variable: Child Promotion											
Child age	2.03*	.19	2.05*	.19	2.01	.19	2.07*	.20	2.16*	.20	
	R ² = .04 Fch = 4.11*										
Child temperamental approach			<1	.06	<1	.06	<1	.10	1.17	.11	
Child temperamental avoidance			<1	-.02	<1	-.01	<1	-.06	<1	-.05	
			R ² = .04 Fch = .17								
Promotion regulatory-focus					<1	.10	<1	.06	<1	.04	
Prevention regulatory-focus					1.60	-.23	1.56	-.22	1.55	-.21	
					R ² = .07 Fch = 1.57						
Maternal promotion							1.77	.18	2.05*	.21	
Maternal prevention							2.43*	-.25	1.74	-.19	
							R ² = .12 Fch = 3.37*				
Maternal promotion x prevention interaction									1.66	-.17	
			Overall F(8, 112) = 2.20*							R ² = .15 Fch = 2.75	

Dependent variable: Child Prevention											
Child age	1.98*	-.19	1.90	-.18	1.85	.17	1.50	-.13	1.57	-.14	
	R ² = .03 Fch = 3.94*										
Child temperamental approach			1.24	.12	1.17	.11	<1	.05	<1	.03	
Child temperamental avoidance			<1	-.07	<1	-.07	<1	.04	<1	.03	
			R ² = .05 Fch = .87								
Promotion regulatory-focus					<1	.07	<1	.12	1.04	.14	
Prevention regulatory-focus					<1	.02	<1	.02	<1	.01	
					R ² = .06 Fch = .40						
Maternal promotion							<1	-.07	<1	-.09	
Maternal prevention							4.66***	.45	3.89***	.40	
							R ² = .23 Fch = 11.49***				
Maternal promotion x prevention interaction									1.53	.15	
			Overall F(8, 112) = 4.17*							R ² = .24 Fch = 2.35	

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

Table 17
Prediction of Child Persistence and Compliance: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		
	F	B	F	B	F	B	F	B	F	B	
Dependent variable: Child Persistence											
Child age	<1	.01	<1	.01	<1	.01	<1	-.02	<1	-.02	
	R ² = .00 Fch = .01										
Child temperamental approach			<1	-.05	<1	-.06	<1	-.02	<1	-.01	
Child temperamental avoidance			2.40*	.23	2.42*	.24	1.76	.17	1.84	.18	
			R ² = .05 Fch = 2.87*								
Promotion regulatory-focus					<1	.18	<1	.06	<1	.05	
Prevention regulatory-focus					<1	-.002	<1	-.004	<1	-.001	
					R ² = .06 Fch = .37						
Maternal promotion							<1	-.03	<1	-.02	
Maternal prevention							2.22*	-.23	1.75	-.19	
							R ² = .11 Fch = 3.27*				
Maternal promotion x prevention interaction									1.00	-.11	
			Overall F(8, 112) = 1.78 (ns)							R ² = .12 Fch = 1.00	

Dependent variable: Child Compliance											
Child age	1.05	-.10	1.02	-.10	<1	-.10	1.35	-.12	1.34	-.12	
	R ² = .01 Fch = 1.10										
Child temperamental approach			<1	-.05	<1	-.05	<1	-.01	<1	.01	
Child temperamental avoidance			2.54*	.24	2.54*	.24	1.60	.15	1.58	.15	
			R ² = .07 Fch = 3.23*								
Promotion regulatory-focus					<1	.004	<1	-.05	<1	-.05	
Prevention regulatory-focus					<1	.09	<1	.10	<1	.09	
					R ² = .07 Fch = .46						
Maternal promotion							1.08	.10	1.04	.10	
Maternal prevention							4.15***	-.41	3.91***	-.41	
							R ² = .21 Fch = 8.74***				
Maternal promotion x prevention interaction									<1	.01	
			Overall F(8, 112) = 3.36**							R ² = .21 Fch = .01	

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

Table 18
 Prediction of Child Distress and Mother-Reported Problems: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		
	F	B	F	B	F	B	F	B	F	B	
Dependent variable: Child Distress											
Child age	1.51	.14	1.71	.16	1.67	.13	2.27*	.20	2.23*	.20	
	R ² = .02 Fch = 2.29										
Child temperamental approach			2.66**	.25	2.67**	.25	2.26*	.21	2.03	.18	
Child temperamental avoidance			2.09	-.20	2.08	-.20	1.24	-.12	1.47	-.13	
			R ² = .10 Fch = 4.70								
Promotion regulatory-focus					<1	.01	<1	.03	<1	.06	
Prevention regulatory-focus					<1	-.08	<1	-.07	<1	-.08	
					R ² = .10 Fch = .30						
Maternal promotion							<1	.07	<1	.03	
Maternal prevention							2.96**	.29	1.98*	.20	
							R ² = .20 Fch = 6.36**				
Maternal promotion x prevention interaction									2.56	.25	
			Overall F(8, 112) = 4.27***								R ² = .25 Fch = 6.53*

Dependent variable: Child Problems											
Child age	<1	.01	<1	.03	<1	.04	<1	.02	<1	.01	
	R ² = .00 Fch = .01										
Child temperamental approach			1.23	.11	1.07	.10	1.17	.11	1.08	.10	
Child temperamental avoidance			3.20**	.30	3.39**	.31	3.03**	.29	2.95*	.28	
			R ² = .12 Fch = 7.16***								
Promotion regulatory-focus					1.66	.22	1.63	.22	1.69	.23	
Prevention regulatory-focus					<1	-.01	<1	-.01	<1	-.02	
					R ² = .16 Fch = 2.93						
Maternal promotion							<1	-.06	<1	-.07	
Maternal prevention							<1	-.07	<1	-.10	
							R ² = .17 Fch = .67				
Maternal promotion x prevention interaction									<1	.08	
			Overall F(8, 112) = 2.80**								R ² = .17 Fch = .62

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

Table 19

Descriptive Statistics for Self-Reported Maternal and Observed Child Promotion- and Prevention-Relevant Emotions

	<u>Total (n = 113)</u>		<u>3 years (n = 55)</u>		<u>4 years (n = 58)</u>	
	Mean	SD	Mean	SD	Mean	SD
Mother Promotion (delighted, happy, pleased, disappointed, discouraged, sad)	10.74	4.09	10.95	4.11	10.55	4.10
Mother Prevention (calm, relaxed, relieved, anxious, tense, nervous)	13.37	3.61	13.60	3.48	13.16	3.75
Child Promotion (happy, sad)	136.33	69.42	137.83	67.74	134.92	71.54
Child Prevention (anxious, neutral)	482.81	78.27	479.24	78.22	486.19	78.85

Table 20
 Zero-Order Correlations Between Maternal and Child Promotion- and Prevention-Related Emotions

	Mother Promotion Emotions	Mother Prevention Emotions	Child Promotion Emotions	Child Prevention Emotions
Mother Promotion Emotions	--	.41***	.18	-.23*
Mother Prevention Emotions	.41***	---	.00	.00
Child Promotion Emotions	.18	.00	--	-.90***
Child Prevention Emotions	-.23*	.00	-.90***	---

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

Table 21

Zero-Order Correlations Between Maternal and Child Promotion and Prevention Behaviors and Maternal Promotion- and Prevention-Relevant Emotions

	Mother Promotion Emotions	Mother Prevention Emotions
Mother Promotion Behaviors	-.10	.09
Mother Prevention Behaviors	-.10	.02
Child Promotion Behaviors	.05	-.13
Child Prevention Behaviors	.05	.04

All correlations non-significant

Table 22

Zero Order Correlations Between Maternal and Child Promotion and Prevention Behaviors and Child Promotion- and Prevention-
Relevant Emotions

	Child Promotion Emotions	Child Prevention Emotions
Mother Promotion Behaviors	.04	.01
Mother Prevention Behaviors	.00	-.06
Child Promotion Behaviors	.26**	-.18
Child Prevention Behaviors	-.12	.20

** = $p < .01$

Table 23
 Prediction of Maternal Promotion-Related Emotions: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6		Step 7		
	F	B	F	B	F	B	F	B	F	B	F	B	F	B	
Dependent variable: Maternal Promotion Emotions															
Child age	<1	-.05	<1	-.04	<1	-.05	<1	-.07	<1	-.07	<1	-.07	<1	-.09	
	R ² = .00 Fch = .26														
Child temperamental approach			2.01*	.19	1.99*	.19	2.20*	.19	1.99*	.20	1.95	.20	1.76	.18	
Child temperamental avoidance			1.16	-.11	1.15	-.11	1.53	-.15	1.53	-.15	1.53	-.16	1.53	-.08	
			R ² = .04 Fch = 2.28												
Actual:ideal discrepancy score					<1	-.02	<1	-.03	<1	-.05	<1	-.05	<1	-.05	
Actual:ought discrepancy score					<1	.03	<1	.03	<1	.05	<1	.05	<1	.05	
			R ² = .04 Fch = .02												
Maternal promotion					<1	-.07	<1	-.08	<1	-.08	<1	-.09	<1	-.10	
Maternal prevention					1.27	-.14	1.53	-.18	1.51	-.18	1.51	-.19	2.23*	-.30	
			R ² = .07 Fch = 1.63												
Child promotion					<1	.12	1.04	.13	<1	.12	1.04	.13	<1	.09	
Child prevention					1.31	.16	1.23	.18	1.23	.18	1.23	.18	1.39	.20	
			R ² = .09 Fch = .94												
Maternal promotion x prevention interaction									<1	.03	<1	.03	<1	.01	
Child promotion x prevention interaction									<1	.04	<1	.04	1.06	.14	
			R ² = .09 Fch = .08												
Maternal promotion x child promotion interaction													<1	-.02	
Maternal promotion x child prevention interaction													<1	.01	
Maternal prevention x child promotion interaction													2.01*	-.39	
Maternal prevention x child prevention interaction													<1	-.10	
			Overall F(15, 112) = 1.16 (ns)												
			R ² = .15 Fch = 1.78												

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

Table 24
 Prediction of Maternal Prevention-Related Emotions: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6		Step 7	
	F	B	F	B	F	B	F	B	F	B	F	B	F	B
Dependent variable: Maternal Prevention Emotions														
Child age	<1	-.06	<1	-.05	<1	-.04	<1	-.03	<1	-.00	<1	.02	<1	.02
	R ² = .00 Fch = .43													
Child temperamental approach			2.13*	.21	2.08*	.20	2.08*	.21	2.29*	.23	2.53*	.25	2.44*	.25
Child temperamental avoidance			<1	-.01	<1	-.01	<1	-.01	<1	-.02	<1	-.03	<1	.00
			R ² = .05 Fch = 2.36											
Actual:ideal discrepancy score					<1	-.04	<1	-.05	<1	-.03	<1	.01	<1	-.01
Actual:ought discrepancy score					<1	.12	<1	.12	<1	.08	<1	.10	<1	.12
					R ² = .05 Fch = .49									
Maternal promotion							<1	.09	1.09	.12	<1	.05	<1	.05
Maternal prevention							<1	-.03	<1	-.04	<1	-.06	<1	-.08
							R ² = .06 Fch = .36							
Child promotion									1.62	-.19	<1	-.07	<1	-.11
Child prevention									<1	-.10	<1	.06	<1	.05
									R ² = .08 Fch = 1.31					
Maternal promotion x prevention interaction											1.40	.15	1.41	.17
Child promotion x prevention interaction											2.14*	.26	2.22*	.29
											R ² = .14 Fch = 3.29*			
Maternal promotion x child promotion interaction													<1	-.02
Maternal promotion x child prevention interaction													<1	-.00
Maternal prevention x child promotion interaction													1.23	-.24
Maternal prevention x child prevention interaction													<1	-.18
													Overall F(15, 112) = 1.19 (ns)	
														R ² = .16 Fch = .45

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

Table 25
 Prediction of Child Promotion-Related Emotions: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6		Step 7	
	F	B	F	B	F	B	F	B	F	B	F	B	F	B
Dependent variable: Child Promotion Emotions														
Child age	<1	-.02	<1	-.01	<1	-.01	<1	-.00	<1	-.06	<1	-.08	<1	-.08
	R ² = .00 Fch = .05													
Child temperamental approach			<1	.05	<1	.05	<1	.04	<1	.02	<1	-.00	<1	-.02
Child temperamental avoidance			<1	.08	<1	.08	<1	.09	<1	.11	<1	.11	1.89	.19
			R ² = .01 Fch = .57											
Actual:ideal discrepancy score					1.18	.17	1.14	.17	1.09	.16	<1	.14	<1	.11
Actual:ought discrepancy score					<1	-.11	<1	-.10	<1	-.04	<1	-.05	<1	-.02
			R ² = .02 Fch = .72											
Maternal promotion							<1	.04	<1	-.01	<1	.01	<1	.01
Maternal prevention							<1	.00	<1	.09	<1	.09	<1	-.03
			R ² = .03 Fch = .08											
Child promotion									2.38*	.27	1.66	.21	1.27	.16
Child prevention									<1	-.04	<1	-.13	<1	-.10
			R ² = .10 Fch = 4.30*											
Maternal promotion x prevention interaction											<1	-.03	<1	-.01
Child promotion x prevention interaction											1.25	-.15	<1	-.04
			R ² = .12 Fch = .82											
Maternal promotion x child promotion interaction													2.15*	-.25
Maternal promotion x child prevention interaction													1.51	-.20
Maternal prevention x child promotion interaction													1.58	-.29
Maternal prevention x child prevention interaction													<1	-.03
			Overall F(15, 112) = 1.75*											R ² = .21 Fch = 3.03*

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

Table 26
 Prediction of Child Prevention-Related Emotions: Multiple Regressions

Predictors Added	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6		Step 7	
	F	B	F	B	F	B	F	B	F	B	F	B	F	B
Dependent variable: Child Prevention Emotions														
Child age	<1	.05	<1	.04	<1	.04	<1	.04	<1	.08	<1	.09	<1	.09
	R ² = .00 Fch = .22													
Child temperamental approach			<1	-.07	<1	-.07	<1	-.06	<1	-.03	<1	-.01	<1	.01
Child temperamental avoidance			<1	-.01	<1	-.02	<1	-.03	<1	-.05	<1	-.05	1.38	-.14
			R ² = .01 Fch = .31											
Actual:ideal discrepancy score					<1	-.08	<1	-.10	<1	-.07	<1	-.05	<1	-.02
Actual:ought discrepancy score					<1	.05	<1	.05	<1	-.00	<1	.01	<1	-.03
			R ² = .01 Fch = .17											
Maternal promotion							<1	.06	<1	.10	<1	.07	<1	.07
Maternal prevention							<1	-.08	<1	-.10	<1	-.11	<1	.02
							R ² = .02 Fch = .29							
Child promotion									2.33*	-.27	1.63	-.21	1.10	-.14
Child prevention									<1	-.10	<1	-.01	<1	-.05
									R ² = .07 Fch = 2.80					
Maternal promotion x prevention interaction										<1	.07	<1	.07	
Child promotion x prevention interaction										1.16	.14	<1	.05	
									R ² = .08 Fch = .86					
Maternal promotion x child promotion interaction													2.42*	.29
Maternal promotion x child prevention interaction													1.05	.14
Maternal prevention x child promotion interaction													1.55	.29
Maternal prevention x child prevention interaction													<1	.05
							Overall F(15, 112) = 1.55 (ns)						R ² = .19 Fch = 3.31*	

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

APPENDIX B

Procedures:

- 1) Child familiarization period and mother consent
- 2) Impossibly Perfect Circles (mother questionnaire)
- 3) Puppet task (mother questionnaire)
- 4) Mishap with research assistant (mother questionnaire)
- 5) Free-play with mother
- 6) Waiting task
- 7) Snack (mother questionnaire)
- 8) Transparent Box task (mother questionnaire)
- 9) Reunion and mishap with mother
- 10) Debriefing

APPENDIX C

MANUAL FOR CODING MATERNAL PROMOTION- AND PREVENTION-ORIENTED
PARENTING BEHAVIORSPromotion-Focused – Promoting positive child behavior**1. Encouraging competence and pro-social behavior**

- a) Eliciting competent action and knowledge (e.g., “Can you catch the fish?”; “Tell me your ABC’s”).
- b) Scaffolding and explaining task demands (e.g., “I think you need to pick up the fishing pole”; “They’re gonna bring your snack in just a minute”; “You want my shoe, take my shoelace instead”).
- c) Giving positive reasons to comply with directives (e.g., “If you wait, you can open the present”).

2. Commenting on the positive

- a) Talking about positive aspects of the task or the dyad’s behavior (e.g., “I got a fish!”; “We’re doing this really quickly”).
- b) Maternal affection and appreciation for child behavior (e.g., showing physical affection; “Great job”; “You’re being such a good girl”).

3. Expressing disappointment

- a) Expressing disappointment or discouragement in the child’s behavior or an activity (e.g., “I thought you would be a good boy and wait”; “I’m sad that you’re not listening to me”).
- b) Wishing things to be different (e.g., “I wish you would let me do my work”).

Prevention-focused – Preventing negative child behavior

1. Eliciting regulatory control and safety

- d) Encouraging the child to obey rules, social conventions and standards for safety (e.g., “The rule is that you have to wait until I finish”; “That’s not very safe”; “Say please”).
- e) Prohibitions (e.g., Physical restraint; “Don’t play with that”; “Stop talking to me, please”).
- f) Citing rules or giving negative reasons to comply with directives (e.g., “If you don’t wait, you can’t open the present”; “Stop it, or when we get home, you’re gonna get it”; “You have to wait because the lady said that was the rule”).

2. Commenting on the negative/approval for compliance

- c) Talking about negative aspects of the task (e.g., “Oh, no, the horse broke it’s leg- it’s so sad”; “You’re not following the rules”).
- d) Maternal approval for compliance with rules and for inhibition (e.g., “You did a good job waiting”; “Thank you for not opening the present”).

3. Criticizing

- c) Criticizes the child’s behavior directly (e.g., “You’re being bad!”; “You’re not following the rules”).

APPENDIX D

MANUAL FOR CODING CHILD PROMOTION- AND PREVENTION-ORIENTED SELF-REGULATION

Coding Scale:

No prom/prev	Minimal prom/prev	Moderate prom/prev	Mostly prom/prev	High prom/prev
0	1	2	3	4

No: No signs of promotion or prevention OR Very slight, listless, ambiguous, or brief signs of prom/prev.

Minimal: There are very occasional signs of promotion or prevention behaviors. They are of low intensity (no gusto) and seem quite limited. Essentially, you are just beginning to see aspects of promotion or prevention, but intensity is low and there are no strong signs of the orientation. That is, it seems like the child is trying to be promotion/prevention, but isn't quite there. (E.g., a child playing listlessly for a while with the horse; a child clinging just a bit to the mother).

Moderate: There are clear signs of promotion or prevention, but they are inconsistent. Intensity and enthusiasm are moderate, and there may be a little more variety of behaviors.

Mostly: There is more of promotion/prevention than not. There is no or negligible inconsistency in behavior. Intensity and enthusiasm is strong– the child shows solid investment and enthusiasm in the orientation. You see this child as a “promotion” or “prevention” type of person more so than not.

High: There is no doubt that this child is behaving in a promotion or prevention oriented way, and does so very intensely and persistently. Intensity has to be high AND behaviors have to be very frequent or long-lasting, too. Behaviors clearly reflect promotion/prevention for most of the interval being coded.

Non-codable items (NC): Includes chatting, unfinished sentences, just answering mother's question in a short unelaborated way.

Examples of behaviors comprising the global scores:

Promotion-focused – child is active and engages with mother in a problem solving way

1. **Seeking information about the task** (e.g., “Can I open the present now?”; “How long before you're done with your work?”; “How did the toy get broken?”)
2. **Actively distracting him or herself by engaging in an alternative activity** (e.g., child plays with the toy; child engages in pretend play; child explores the room)
3. **Asking for directions from mother** (e.g., “Mom, what should I do now?”; “Can we fix the toy?”).
4. **Focusing on the positive** (e.g., “If I wait, then I can open the present”; “Good job, mom!”).

Prevention-focused - child withdraws from activity, passively distracts, vents feelings

In general, child withdraws from activity, passively distracts, vents feelings

1. **Asking or attempting to leave the room** (e.g., child tries to open the door; “I want to go home”).
2. **Seeking comfort, attention, or caretaking from the mother** (e.g., child sits on mother's lap; child sucks thumb; child hits the mother; “Mom, help me blow my nose”).
3. **Passively distracting or self-soothing** (e.g., child just sits still; child sucks thumb; child paces up and down; child makes repetitive non-sensical noises)
4. **Focusing on the negative** (e.g., “Mom, I hate waiting”; “I'm so tired”; “The toy is broken”)

APPENDIX E

MANUAL FOR CODING CHILD APPROACH/AVOIDANCE, PERSISTENCE, AND COMPLIANCE

Child approach and avoidance behaviors during the familiarization period (see LabTAB-preschool version, Goldsmith & Rothbart, 1996).

Approach: Code peak intensity of approach behaviors (behaviors initiated by child to decrease the distance from child to the stranger). Note them for each 10-second epoch and rate on the following scale:

- 0 – stands in place, no initiation of conversation, no eye contact
- 1- very briefly turns, leans, or looks in strangers direction – the child appears to be subtly engaging the stranger
- 2- takes one or two hesitant steps towards the stranger, neutral or hesitant response to questions with no initiation of conversation, moderate eye contact or looking in the stranger's direction
- 3- takes one or more non-hesitant steps towards the stranger, or initiates play with the stranger, or eager initiation of conversation, or substantial eye contact

Avoidance: Code peak intensity of avoidance behaviors (behaviors initiated by child to maintain or increase the distance from child to the stranger). Note for each 10-second epoch and rate on the following scale:

- 0 – no avoidance, stands in place, no gaze aversion or verbal hesitancy
- 1- low avoidance, turns or leans away from the stranger, briefly (1-2 seconds) averts gaze (this can happen several times), or makes a small step or ½ step away from the stranger

- 2- medium avoidance, takes one or two steps away from the stranger, focuses mostly on the toys, glances at the ground for several seconds, or responds hesitatingly to stranger; maintains proximity to stranger, but just plays with toys
- 3- goes to the far corner or to the parent, or no response to questions, or just stays with mother.

PERSISTENCE/RESIGNATION

(A) Persistence and resignation will be coded when the child, without help from mother, is participating in achievement tasks (the Impossibly Perfect Circle and Transparent Box tasks). Persistence is coded based on the quality of the child's focus on the task, participation, and the frequency, nature, and duration of interruptions. Higher scores indicate more persistence.

Persistence on the Impossibly Perfect Circles:

- 1 – *minimally persists*: gives up totally, clear resignation. Refuses to do the task for a significant amount of time and doesn't return to it, even with prompting. Does not work on the task for half the time or more.
- 2 – *inconsistently persists*: mixed behavior – sometimes works, but without interest; often averting gaze away from task, stopping, or opening the door. That is, the child stops working, then comes back. These interruptions must interfere with completing the task.
- 3 – *mostly persists*: continues to work, keeps focused on task, but gaze averts or just pauses briefly to stop working a few times (no more than 3 or 4). That is, the child hesitates or stalls a bit.
- 4 – *totally persists*: is totally focused on task, expresses interest. Is engaged with the task with almost no interruptions.

Persistence on the Transparent Box:

- 1 – *minimally persists*: gives up totally at some point before the end of the task (must be more than just a few seconds); clear resignation. Does not work on the task for half the time or more.
- 2 – *inconsistently persists*: mixed behavior – sometimes works, but without interest; often averting gaze away from task, stopping, or opening the door. That is, the child stops working, then comes back. These interruptions must interfere with completing the task.
- 3 – *mostly persists*: continues to work, keeps focused on task, but gaze averts or just pauses to stop working a few times (no more than 3 or 4). That is, the child hesitates or stalls a bit.
- 4 – *totally persists*: is totally focused on task, expresses interest. Is engaged with the task with almost no interruptions.

(B) Number of seconds before interrupting activity to protest or hesitating or resisting drawing circles (may say “I can't do it” but continue to draw circles)

(C) Total number of seconds working on task (Total amount of seconds for PC = 210; for TB = 180)

FRUSTRATION/DISTRESS

Rate the peak amount of frustration. Higher scores indicate more frustration.

- 1- Does not appear frustrated or distressed
- 2- Appears slightly frustrated or distressed (sighs, talks to self – “this is hard”; makes a frustrated or sad looking face; makes a slightly irritated comment)
- 3- Becomes visibly upset (clear emotional distress, but isn’t overwhelmed; whines strongly)
- 4- Loses it (cries, whines loudly, tries to leave or leaves)

COMPLIANCE

Compliance will be coded on the following continuum during the WT. Children will receive a single global score. Higher scores indicate more compliance.

- 1- Defiance/resistance – overt rejection of maternal/adult agenda, either aversively or non-aversively. May also include refusal with some negotiation (note that Kochanska’s “overt resistance not coded because very rare). Refusal with uncontrolled affect.
- 2- Passive non-compliance – reluctance to accept maternal/adult agenda as shown by non-compliance by ignoring, frequent interruptions even after mother says to stop.
- 3- Situational compliance – generally cooperative, but requires maternal/adult prompting. That is, no non-compliance, but child stops complying when mother stops encouraging. Child may interrupt mother several times, but not very frequently.
- 4- Committed compliance- full endorsement of maternal/adult agenda (e.g., fully following mother directives not to interrupt her while she does her work, waiting until mother is finished with work to open present). One or two brief interruptions may occur.

APPENDIX F

MANUAL FOR CODING OBSERVED CHILD EMOTION**Happy**

Vocal Quality: voice is light and lilting*, pitch often becomes higher and/or louder than during previous vocalizations, includes laughing, giggling, humming in a singsong manner.

*lilting = to speak rhythmically and with fluctuating pitch; rhythmical swing or cadence.

Facial Action: mouth characterized by slight or broad smiling in which the corners of the mouth are turning upwards, smile may or may not be accompanied by crinkling around the eyes; crinkling around eyes often appears as brightness in the eyes; forehead is smooth, brows may be raised.

Posture/Gesture: there is usually enough tension in the body (i.e., it is not slumped) but the person's shoulders and chest appear relaxed; children may jump up or raise their arms in glee, clap their hands with delight.

Sad

Vocal Quality: voice is lowered without intention to whisper, often dropping off at the end of the utterance; if whining, with no protesting quality, code sad or anxious (see below).

Facial Action: lip corners may resemble or begin to pull down, bottom lip in a put (note: pouty lips may also appear in anger expressions), eyes may droop, brow may form an oblique shape (^).

Posture/Gesture: head may drop down and to the side, shoulder and/or body may slump, eye rubbing masks tears.

Angry

Vocal Quality: voice is harsh or whiny, conveys protest, irritation, frustration, anger, hostility; pitch is often louder and deeper, explosive quality to words spoken, can include a contemptuous tone. If whining has a protest quality, code as angry.

Facial Action: brow may be furrowed (but there should be addition cues to code anger), eyes can be narrowed as in a “hard stare,” jaw clenched or set, mouth squared off if open, lips pressed or tightened if mouth is closed.

Posture/Gesture: arms akimbo (fists placed on each hip), finger wagging or jabbing.

*Note: Just a brow furrow is not codable as anger because it must be accompanied by another cue. Also, aggressive behaviors (e.g., punching) are not codable without other cues.

Anxious

Vocal Quality: voice is strained and conveys stress, tension in the vocal chords makes them constrict in a way that disrupts smoothness of typical speech, sounds fearful, whining has no protesting quality

Facial Action: brow may be furrowed (but there must be another cue), eyelids may be raised making eyes appear widened, lip-biting may occur; darting glances; mouth may be pressed tightly or closed.

Posture/Gesture: hand or foot may move in repeated, fidgeting fashion; shoulders may appear raised or body held stiffly.

*Note: the facial expressions associated with anxiety are similar to fear expression.

Neutral

No signs of vocal, facial, or postural cues of emotion. Voice sounds “matter of fact.”

Mixed Emotion Codes/Blends:

Sometimes two different emotions will be present simultaneously or will occur in such close proximity as to seem to be all part of the same emotional episode (e.g., in the same second).

When this occurs you can double-code (e.g., ANG/ANX). However, you cannot triple-code emotion. When three or more emotions co-occur, use the following hierarchy to determine which 2 are coded: Happy>Angry>Anxious>Sad.

APPENDIX G

MATERNAL SELF-REPORT OF APPRAISALS OF CHILD, PARENTING STRATEGIES,
AND EMOTIONAL EXPERIENCES

These questions are provided to the mother during the wait task and they constitute her work assignment during that task.

Instructions:

During this time, we would like you to answer the following questions in your own words.

There are 9 questions and you have about 8 minutes, so you can keep your answers relatively brief.

1. How does your child usually handle a wait? That is, what skills does your son or daughter already have for waiting and what difficulties does he or she have?
2. How does your child's behavior during today's wait compare with how your child usually handles a wait?
3. What do you usually do when you need your child to wait?
4. How do you feel about your child's handling of today's wait? (For this question, circle the number that corresponds to the degree that you feel each feeling.)

	Not at All	Slightly	Moderately	Considerably	Strongly
Annoyed	1	2	3	4	5
Anxious	1	2	3	4	5
Calm	1	2	3	4	5
Delighted	1	2	3	4	5
Disappointed	1	2	3	4	5
Discouraged	1	2	3	4	5
Happy	1	2	3	4	5
Impatient	1	2	3	4	5
Irritated	1	2	3	4	5
Nervous	1	2	3	4	5
Pleased	1	2	3	4	5
Relaxed	1	2	3	4	5
Relieved	1	2	3	4	5
Sad	1	2	3	4	5
Tense	1	2	3	4	5

5. How do you think your child feels during today's wait?

Same format for endorsing feelings

6. At other times, when your child does not handle a wait well, how do you usually feel about it?

Same format for endorsing feelings

7. At those other times, when your child does not handle a wait well, how do you think your child feels?

Same format for endorsing feelings

8. Place an X next to the phrase that best captures your thinking in setting goals for raising your child:

I keep in my mind how I think my child ought to turn out

I keep in my mind how I hope my child will turn out?

9. If there is time remaining, please tell us anything else that you would like to add.

APPENDIX H THE SELVES QUESTIONNAIRE

In this questionnaire, you will be asked to list the attributes of the type of person that you believe you actually are, ideally would like to be, and ought to be:

- Your actual self: Your beliefs concerning the attributes or characteristics you think you Actually possess now. This might include positive attributes as well as no-so-positive attributes.
- Your ideal self: Your beliefs concerning the attributes or characteristics you would ideally like to possess: The type of person you wish, desire, or hope to be.
- Your ought self: Your beliefs concerning the attributes or characteristics you believe you should or ought to possess: The type of person you believe it is your duty, obligation, or responsibility to be.

You will be asked about the extent to which each attribute is part of your particular self. You can make these ratings after you have listed the attribute. There is room in each section to list up to 10 attributes for each “self”. Try to list as many as you can, but don’t worry if you can’t think of 10 attributes for each question.

The first part of the questionnaire deals with your own beliefs about yourself. The second part deals with your parents’ beliefs about you.

Part I: Your Own Beliefs About Yourself

Please list the 10 attributes of the type of person you believe you actually are:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which you believe you actually possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 – extremely

Please list the 10 attributes of the type of person you believe you ideally would like to be:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which you ideally would like to possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 - extremely

Please list the 10 attributes of the type of person you believe you ought to be:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which you ought to possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 – extremely

Part II: Your Parents' Beliefs About You

Please list the 10 attributes of the type of person your parents believe you actually are:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which your parents believe you actually possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 – extremely

Please list the 10 attributes of the type of person your parents believe you ideally would like to be:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which your parents ideally would like you to possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 - extremely

Please list the 10 attributes of the type of person your parents believe you ought to be:

- | | Extent |
|-----------|--------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| . | |
| 10. _____ | _____ |

For each of the attributes you listed, please rate the extent to which your parents believe you ought to possess the attribute on the small blanks to the right of each word. Use the following scale:

1 - slightly 2- moderately 3 - a great deal 4 – extremely

VITA
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EDUCATION

The Pennsylvania State University, University Park, PA
Doctor of Philosophy, Child Clinical Psychology, December, 2001
Dissertation Thesis: The self, views of the world, and the socialization of self-regulation.
Minor, Developmental Psychology

UMDNJ, Robert Wood Johnson Medical School, Piscataway, NJ
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The Pennsylvania State University, University Park, PA
Master of Science, Child Clinical Psychology, May, 1999.
Master's Thesis: Socialization in Japanese and U.S. mother-child dyads during play and an emotional challenge.

The University of Rochester, Rochester, NY
Bachelor of Arts, Psychology, May 1995.
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GRANTS

2001	Dissertation Support Grant, The Society for the Psychological Study of Social Issues
2000	Dissertation Research Award, American Psychological Association
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SELECTED PAPERS AND PUBLICATIONS

Cole, P.M., & Dennis, T.A. (1998). Variations on a theme: Culture and the meaning of socialization practices and child competence. Psychological Review, 9, 276-278.

Dennis, T.A., Cole, P.M., Mizuta, I., & Zahn-Waxler, C. (2001). Self in context: Social exchanges of Japanese and U.S. mother-preschooler dyads. Manuscript under review.

Dennis, T.A., & Kelemen, D.A. (2001). Can I feel happy when I feel bad: Children's understanding of the intentional control of emotion. Manuscript under review.

SELECTED PRESENTATIONS

Cole, P.M., Dennis, T.A., & Cohen, L.H. (2001, April). Emotion regulation and understanding in 3- and 4-year-olds. Poster session presented at the biennial meeting of the Society for Research in Child Development, Minneapolis, MN.

Dennis, T.A., Cole, P.M., Zahn-Waxler, C., Mizuta, I. (2000, July). Self in context: Social exchanges of Japanese and U.S. mother-preschooler dyads. Poster session presented at the biennial meeting of the International Society for the Study of Behavioural Development, Beijing, China.