

MIND-MINDEDNESS AND CHILD COMPLIANCE: EXPLORING THE MEDIATING  
ROLE OF PARENTING PRACTICES IN CANADA AND CHINA

A Thesis Submitted to the Committee on Graduate Studies in Partial Fulfillment of the  
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## ABSTRACT

Mind-Mindedness and Child Compliance: Exploring the Mediating Role of Parenting Practices

in Canada and China

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The crucial role of parents in shaping child development has been widely recognized, with extensive research focusing on various aspects such as parenting styles, attachment relationships, and specific parenting practices. Mind-mindedness, defined as a parent's ability to recognize and understand their child's mental states, is emerging as an important factor in child development. The present study sought to investigate cross-cultural differences in maternal mind-mindedness, parenting practices, and their relationship to child compliance in China and Canada. The participants included 136 Chinese mother-child dyads and 83 Canadian mother-child dyads, with children ranging from ages 4 to 7. Maternal mind-mindedness, parenting practices, and child compliance were coded through observational method. Results suggest that while Canadian mothers were more mind-minded, Chinese mothers were more power assertive. Moreover, maternal parenting practices mediated the relationship between mind-mindedness and child compliance in China. This study cultivated a culturally sensitive understanding of the parent-child relationship.

Key Words: mind-mindedness, child compliance, power assertion, maternal involvement, culture.

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## Introduction

Previous research has extensively explored parenting through Baumrind's parenting style framework, which posits that parents can be categorized along two dimensions: responsiveness and demandingness. Responsiveness pertains to a parent's ability to sensitively and appropriately respond to their child's emotional and developmental needs (Maccoby & Martin, 1983). In contrast, demandingness refers to a mother's ability to regulate her child's behavior through the establishment of boundaries and rules (Maccoby & Martin, 1983). This capacity plays a pivotal role in shaping a child's socio-emotional development (Poon et al., 2017), cognitive growth (Tamis-LeMonda et al., 2014), and overall well-being (Fletcher et al., 2008). The significance of comprehending parental responsiveness becomes particularly pronounced when cross-cultural variations in parenting styles is considered. For instance, Chinese parents are often characterized as authoritarian, exhibiting low responsiveness and high demandingness, while Canadian parents tend to be more authoritative, demonstrating high responsiveness and high demandingness (Chuang & Su, 2009). The primary distinction between these styles lies in the dimension of responsiveness. However, defining what constitutes an "appropriate" response to children's needs can be complex and varies considerably, especially when cultural context is considered. One of the ways parents may be able to manifest their responsiveness is through demonstrations of parental warmth, such as affection expression (Roberts & Strayer, 1987). However, cultural norms may lead to varying degrees of emotional expressiveness, with evidence pointing to Chinese parents displaying lower levels of affection expression (Cheah et al., 2015).

It is worth noting that, for an appropriate response, acknowledgment of a child's thoughts and feelings is a prerequisite. This parental acknowledgment of a child's mental state can be encompassed by the term mind-mindedness, which refers to the extent to which a mother is a)

able to recognize her child as an independent being with their own mind and b) willing to follow her child's mind (Meins, 1997). A parent's acknowledgment of their child's mind can be manifested through parenting practices, ultimately influencing a child's development. This acknowledgment of children's mental states has been measured using indicators such as internal state talk, adaptive communication, and solicited child involvement (Fishburn et al., 2022). Therefore, the objectives of the present research were to investigate maternal mind-mindedness and its association with child outcomes in Canada and China, both from within- and cross-cultural perspectives. Specifically, the study aimed to determine whether these associations were mediated by parenting practices, such as maternal involvement and power assertion, within China and Canada. High levels of maternal involvement may be reflective of cultural norms within traditional Chinese parenting (Liu et al., 2021), while power-assertive parenting strategies may be considered harmful to children's development in both China and Canada (Louie et al., 2013). Therefore, a mother's identification and acknowledgment of her child's mind may be reflected in her involvement and her use of low power-assertive strategies. Overall, this research sought to shed light on how the understanding and acknowledgment of a child's mind by mothers impact their parenting approaches and, in turn, relate to the developmental outcomes of their children across cultures.

### **Research Context: Baumrind's Parenting Framework and its Cultural Applicability**

To create a comprehensive framework of parenting beliefs and practices, Baumrind (1967) established three different parenting styles and corresponding patterns of behavior found in both the parent and the child: authoritarian, authoritative, and permissive. The focus of this paper centers on the authoritative and authoritarian parenting styles, as these two parenting styles seem to vary the most across cultures (Lim & Lim, 2004). While parents who are authoritative tend to

emphasize both child autonomy and boundary setting, authoritarian parents tend to exhibit controlling behaviors and demand high levels of child obedience (Baumrind, 1967). Later, Maccoby and Martin (1983) expanded on the parenting style typology by conceptualizing a two-dimensional classification of parenting behaviors: responsiveness and demandingness.

Responsiveness refers to a parent's ability to sensitively and appropriately respond to their child whereas demandingness refers to a parent's ability to manage their child's behavior through rule enforcement. Though both authoritative and authoritarian parenting styles exhibit high demandingness, the expression of demandingness varies significantly when combined with different levels of responsiveness (Maccoby & Martin, 1983). For authoritative parents, high demandingness is balanced with high responsiveness, fostering a nurturing environment where rules are explained and enforced with warmth and understanding. In contrast, authoritarian parents also display high demandingness but with low responsiveness, emphasizing strict adherence to rules with limited emotional support or explanation (Maccoby & Martin, 1983). Within Western cultures, authoritative parenting has been found to foster children's cognitive development (Tamis-LeMonda et al., 2014), socio-emotional development (Poon et al., 2017), along with overall well-being (Tamis-LeMonda et al., 2014). As such, Western literature often emphasizes the authoritative parenting style as the 'ideal' formulation of parenting behaviors, practices, and beliefs (Klein & Kallentine, 2012; Tiwari, 2022).

While research on Baumrind's parenting styles within the Western context has found consistent results, applying these parenting styles across cultures has yielded conflicting findings. Some studies align with Western literature; for example, Pong et al. (2009) found that, for both Taiwanese and European-American students, parental authoritarianism was negatively associated with school achievement, and authoritativeness was positively associated with school

performance. In contrast, other researchers have found results that are inconclusive. For example, Leung et al. (1998) investigated how academic achievement was related to parenting styles within Hong Kong, Australia, and the United States. Leung et al. (1998) found that parental authoritativeness toward children's daily livings was positively related with academic achievement within Australia and the United States, but not within Hong Kong. Parental authoritarianism, on the other hand, was found to be positively related to academic achievement within Hong-Kong.

Lim and Lim (2004) suggested that this is due to the parenting style typology having been developed based on Western standards of parenting, where children are socialized to be independent, self-sufficient, and self-reliant. In contrast, Chinese parenting, which is developed based on Confucian ideals, emphasizes values such as filial piety, child obedience, and social cohesiveness (Camras et al., 2017). To instill these values in their children, Chinese parents often use parental control strategies which are viewed as restrictive and cold by Western researchers (Lim & Lim, 2004). However, these parental control strategies are used by Chinese parents because they care for their children and want to set them up for success (Chao, 1994). To gain a more nuanced understanding of this argument, it is necessary to discuss the Confucian ideologies that are central to Chinese parenting.

### ***Chinese Parenting Ideals: Maternal Involvement and Power Assertion***

According to Chao (1994), what is considered 'strictness' within Western cultures overlaps with parental concern and warmth in Chinese cultures. This is related to the emphasis placed on the conceptions of *chao shun*, which refers to the training and education of children, and *guan*, which concerns the governance and care of children, within Chinese cultures. Li (2021) argues that *guan* illustrates how parental warmth can be implicitly displayed through devotion to and

supervision of their children. To highlight their point, the research references a common Chinese saying: “Strictness is love, and leniency means harm” (pg. 502) suggesting that Chinese parents use rigid expectations to prepare their children for success and protect them from harm (Li, 2021). However, Baumrind’s (1967) parenting typology views demandingness as a dimension that excludes warmth when not combined with responsiveness. As such, when Chinese parents demonstrate *guan* or *chao shun*, they may be misunderstood as being authoritarian, restrictive, and cold.

Through the parenting dimension of *guan*, it can be seen that Chinese mothers tend to demonstrate their care for their children through maternal involvement, which is exemplified by being committed to and invested in their child’s development (Zhu et al., 2023). In this context, a mother’s commitment can be evidenced by dedicating time, energy, and money to ensure her child’s success (Grolnick et al., 1994). Past research suggests that Chinese mothers are highly involved in their children’s lives (Liu et al., 2010), which was then related to their children’s academic performance and socio-emotional development (Pan et al., 2006; Zhai & Chen, 2018). One such study found that Chinese mothers reported having more involvement in their 7-year-old children’s number learning when compared to American mothers and, in turn, Chinese children tended to perform better on mathematics tests than American children (Pan et al., 2006). Moreover, other researchers found that when Chinese children perceived their mothers to be highly involved in their leisure activities, these children exhibited better social and school adjustment later in life (Zhao & Chen, 2018). This indicates that instead of demonstrating parental sensitivity through the use of authoritative parenting (high demandingness and responsiveness), Chinese mothers may express their sensitivity through high levels of maternal involvement.

Along with manifesting sensitivity through maternal involvement, Chinese mothers may express their demandingness through the use of power, reflecting the cultural emphasis on parental authority. Power assertion comprises a parent's use of high-power strategies to coerce their child into compliance and obedience (Xu et al., 2019). For example, if a child refuses to complete their chores, a mother may use direct commands or criticism to compel their child to comply. One study found that poor academic performance among Chinese children was related to their mother's use of power-assertive parenting strategies, such as prohibition, direct commands, and criticism (Xu et al., 2019). The researchers argue that when mothers use high power assertion, their children may doubt their academic competence which then damages their self-efficacy and academic motivation (Xu et al., 2019). Overall, This research suggests that power assertive strategies may be used by parents to forcefully obtain obedience from their child, which can be detrimental to the child's developmental outcomes.

By examining past research on maternal involvement and power assertion, it can be seen that maternal involvement has been positively linked to academic achievement (Liu et al., 2021; Zen & Chen, 2018) whereas power-assertive parenting has been linked to poorer academic performance (Xu et al., 2019). As both parenting strategies (maternal involvement and power assertion) have been connected to contrasting developmental outcomes, it is crucial to investigate what factors facilitate parenting practices that are beneficial to the development of adaptive child behaviors. Through semi-structured interviews with urban Chinese mothers of middle-schoolers, Way et al. (2013) found that Chinese mothers tended to choose parenting strategies (such as emotional support, autonomy encouragement, boundary setting, and indulgence) based on their concerns for both their children's long-term and short-term happiness. One of the ways a mother may be able to manifest their concern for their child's emotional state (such as happiness) is

through the use of mind-mindedness, which captures a mother's ability to recognize her child's mind and her willingness to follow her child's mind (Meins, 1997).

### **Theoretical Foundations of Mind-Mindedness**

Meins (1997) coined the term *mind-mindedness* to measure parental concern for a child's mental state. Prior to the development of mind-mindedness as a construct, the parent-child relationship was mainly examined under the lens of attachment theory (Meins, 1998).

Attachment theory proposes that in order for a secure attachment to be developed between mother and child, a mother must demonstrate sensitivity towards her child's needs (Ainsworth et al., 1971). According to Ainsworth et al. (1971, 1978), maternal sensitivity encompasses two components: 1) the cognitive ability to sense her child's cues and 2) the behavioral capacity to respond effectively to her child's cues. For example, if a baby is crying, a sensitive mother would be able to 1) identify the cause of the crying (e. g., hunger or a need for a diaper change) and 2) respond appropriately (e.g., feeding the baby or changing the diaper). However, attachment researchers have often measured maternal sensitivity primarily through behavioral responsiveness (De Wolff & van Ijzendoor, 1997), often overlooking the cognitive aspect. To address this gap, Meins (1998) proposed mind-mindedness as a way to examine maternal sensitivity from a cognitive perspective. Mind-mindedness is suggested to be an effective predictor of secure attachment, as it captures the extent to which a mother considers her infant's mental states. Supporting this notion, Laranjo et al. (2008) found that maternal sensitivity mediated the relationship between mind-mindedness and infant attachment. This research indicates that mind-mindedness independently predicts both attachment and maternal sensitivity, and it also predicts child attachment through maternal sensitivity. Similarly, Schacht et al. (2017) found that mothers with severe mental illness (schizophrenia, depressive mood disorders with or

without psychosis, and mood disorders with or without mania), who participated in a mind-mindedness based intervention, were more likely to develop a secure attachment with their child and less likely to have an insecure-disorganized attachment compared to mothers who did not participate in the intervention. As such, mind-mindedness may be able to tap into the cognitive component of maternal sensitivity and facilitate a secure attachment between mother and child.

More recently, Fishburn and colleagues (2022) have operationalized mind-mindedness by considering three aspects: 1) whether the parent more frequently acknowledged rather than rejected their child (with-holding factual corrections), 2) whether the parent was inclined to use questions or suggestions more than direct commands (with-holding safety concerns), and 3) whether the parent referred to mental states (their own, their child's, or others) during parent-child interactions. With the logic being that parents who are more mind-minded will acknowledge their child more to facilitate adaptive communication, display more solicited child involvement by using questions or suggestions, and will use more internal state talk when compared to less mind-minded parents. For example, Fishburn et al. (2022) found that solicited child involvement, adaptive communication, and internal state talk were all highly and positively related to each other. This supports the idea that these measures (solicited child involvement, adaptive communication, and internal state talk) can be considered as indicators of mind-mindedness (Fishburn et al., 2022). Moreover, the researchers found that the indicators of mind-mindedness (solicited child involvement, adaptive communication, and mental state talk) were related to maternal sensitivity, yet distinct in terms of predictive abilities. Mind-mindedness was found to uniquely predict children's later mentalization skills, after controlling for maternal sensitivity (Fishburn et al., 2022). This research highlights a new perspective on mind-mindedness and further confirms mind-mindedness as a concept related to but distinct from

maternal sensitivity. However, adaptive communication has not yet been tested as an indicator of mind-minded parenting outside of Western cultures. As such, the present study seeks to shed light on how both mental state talk and adaptive communication relate to other parenting practices and child compliance across cultures.

### ***Cross-Cultural Exploration of Mind-Mindedness***

In order to examine mind-mindedness across cultures, it must first be understood how culture is related to a parent's ability to a) cognitively identify their child's mental states and b) behaviourally manifest the value they place on their child's mental states. This capacity for mind-mindedness may be influenced by the extent to which their culture emphasizes child independence as a socialization goal. Liu et al. (2005) observed that Canadian mothers more frequently encouraged their child's autonomy (child initiation and exploration) whereas Chinese mothers more frequently encouraged their child's connectedness (child cooperation, emotional closeness, and physical proximity). This research indicates that, compared with Western parents, Chinese parents are less autonomy and independence oriented. As such, Chinese mothers may not value their children's unique mind to the same extent as Western parents.

Indeed, past research has consistently found that Asian parents have lower overall frequencies of mental state talk and lower frequencies of appropriate mental state talk when compared to their Western counterparts (Dai et al., 2019; Fujita & Hughes, 2020). In one study, it was found that Japanese mothers used significantly less mental state talk describing their child's attributes when compared to their British counterparts (Fujita & Hughes, 2020). Other researchers have also found cross-cultural differences in the quality of mental state talk used. To that end, Dai et al. (2019) investigated mind-mindedness in terms of how attuned a parent is to their child's mental state, with parental attunement being assessed based on whether the parent

used appropriate or non-attuned mental state talk. Appropriate mental state talk occurred when mothers accurately described their children's thoughts and emotions, whereas non-attuned mental state talk occurred when mothers were unable to correctly describe their children's thoughts and emotions. A comment may be considered accurate according to displays of interest/intention made by the infants. For example, if a mother said "You like playing with dolls," and the child was observed consistently focusing on the dolls, then the comment would be considered appropriate. The researchers found that Australian mothers tended to use appropriate mental state talk whereas Chinese mothers tended to use non-attuned mental state talk more often (Dai et al., 2019). Thus, highlighting the cross-cultural variations in parental expression of mind-mindedness.

However, these cross-cultural differences in the frequency of mental state talk may be related to cultural variations in the social acceptability of emotional and self-expression. For example, it was found that Japanese emotional display rules were less likely to permit the expression of powerful emotions (anger, contempt, and disgust) when compared to both their American and Canadian counterparts (Safdar et al., 2009). Moreover, Japanese display rules were less likely to permit the expression of positive emotions (happiness and surprise) when compared to Canadian display rules (Safdar et al., 2019). Due to the cross-cultural differences in the acceptability of emotional expression, it is crucial to consider how this may influence the frequency of mental state talk. That is to say, a Canadian mother may use more emotional mental state talk than an Asian mother because of differing cultural beliefs around emotion expression. Moreover, these cross-cultural variations in mental state talk may be related to children's developmental outcomes. As such, the present study seeks to conduct an exploratory analysis

that examines how these indicators of mind-mindedness differ cross-culturally and relate to parenting strategies and child behavior in both China and Canada.

### **Mind-Mindedness and Child Compliance**

One specific aspect of child behavior under consideration in the present study is child compliance. Compliance has been described as children's prompt obedience to parental directives such as "Stop That" or "No" (Stayton et al., 2017). According to Kochanska (2002), when children exhibit compliant behavior, they are demonstrating their ability to internalize the norms and values relevant to the society. The absence of this ability to conform to cultural norms and values might hinder children from effectively integrating as functional individuals within their respective societies (Kochanska, 1993). Other Researchers have posed child compliance as an important stepping stone in children's development of self-regulation skills. In one such study, Feng et al. (2017) found that children's use of committed compliance at 36 months old was positively related to the children's use of self-regulation at 54 months old, indicating a progression from the ability to comply to the ability to self-regulate. Stayton et al. (1971) argue that there may be an evolutionary basis for children's willingness to comply, as a child's ability to obey their attachment figure's demands and warnings would keep the child safe in dangerous situations. Therefore, it is crucial to investigate the parenting behaviors that can enhance or diminish adaptive child behaviors, such as child compliance.

One of the parenting behaviors that have been implicated in child compliance is maternal sensitivity, with higher levels of maternal sensitivity being related to higher levels of children's compliance (Becher et al., 2023). Although limited research has looked into the connection between maternal mind-mindedness and child compliance, d However, the present study seeks to

further examine this connection by investigating both the direct and indirect relationship between mind-mindedness and child compliance across culture.

### **Parenting as a Mediator**

In order to better understand the process through which mind-mindedness and child compliance are related, the present study aims to examine whether maternal involvement and power assertion act as mediators. In the past, researchers have identified that mind-mindedness acts as an effective means for parents to foster other beneficial parenting practices, thereby facilitating their child's healthy development. One such study found that mothers who were high in mind-mindedness were more likely to demonstrate improved parenting skills after completing Parent-Child Interaction Therapy (PCIT), which then fostered positive parent-child interactions (Laranjo et al., 2008). However, researchers have yet to investigate how parenting strategies mediate the relationship between mind-mindedness and child compliance.

As mind-mindedness was introduced as conceptual alternative to maternal sensitivity (Meins, 1997) and has been found to foster healthy mother child attachment (Planalp et al., 2019; Schacht et al., 2017), the present posits that mind-mindedness may be able to facilitate a parent's ability to discern sensitive and effective responses to their child's emotional and behavioral cues. If a mother is able demonstrate her authoritative parenting by appropriately responding to her child, she may then be able to foster her child's compliance. In support of this argument, researchers found that when mothers were responsive to their child's behavior during mother-child interactions, her children were more likely to demonstrate their compliance (Wahler & Meginnis, 1997). Therefore, it is possible that, when a mother is sensitive to her child's thoughts and feelings (mind-mindedness), she may then be able to use an effective combination of

responsiveness and demandingness (authoritative parenting), ultimately leading to an increase in child compliance.

However, within the Chinese sample, authoritative and authoritarian parenting may not be sufficient in explaining the process through which mind-mindedness is related to child compliance. As stated previously, there is an ongoing debate regarding the applicability of Baumrind's framework to Chinese parenting practices (Chao, 1994; Lim & Lim, 2003). Therefore, in order to better capture Chinese parenting ideals (such as *guan* and *chao shun*), the present study seeks to examine whether maternal involvement and power assertion mediate the relationship between mind-mindedness and child compliance in China and Canada. Maternal involvement may act as a mother's outward expression of their responsiveness and warmth, as demonstrated by the concept of *guan* which captures the overlap between maternal governance and care of one's child (Chao, 1994; Li, 2021). In contrast, power assertion may encompass a mother's willingness to engage in demandingness and parental control, as demonstrated by the mother's use of coercive (eg., prohibition, direct commands) rather than collaborative (eg., positive reinforcement, suggestions) parenting strategies. Past research on maternal involvement has found that Chinese mothers are highly involved in their children's lives, to the benefit of their children's academic performance (Pan et al., 2006). However, these studies are limited in that they tend to focus on self-report and academic performance (Pan et al., 2006; Zen & Chen, 2018). If a study relied on maternal and child report rather than observation, it may be that the study measured how the mother and child think the mother behaved rather than how the mother has actually behaved. Moreover, it is important to look beyond academic performance and look at other aspects of child development. For example, how does a mother's involvement benefit her child's social development?

In order to resolve these limitations, the present study operationalized maternal involvement by examining the frequency in which a mother initiated mother-child interactions using high power, low power, and neutral strategies throughout an observed free-play session. Power assertion, on the other hand, examined the extent to which a mother used high power parenting strategies rather than low power parenting strategies throughout the free-play session. It is posited that when a mother is considerate of her child's unique mind (mind-mindedness), she would more frequently initiate mother-child interactions (maternal involvement) and use less power assertion, which would then foster higher levels of child compliance.

### **The Present Study**

The present study has three main purposes. The first is to examine cross-cultural differences in the indicators of mind-mindedness (mental state talk and adaptive communication) and parenting practices (maternal involvement and power assertion). The second is to examine the relationship between mind-mindedness, parenting practices, and child behavior within each culture. The final purpose is to a) examine the direct relationship between mind-mindedness and child behavior and b) determine whether parenting practices mediate this relationship across cultures.

### **Cross-Cultural Comparisons**

#### ***Hypothesis 1a***

For the purpose of the present study, mind-mindedness was measured using two indicators: mental state talk and adaptive communication. Solicited child involvement, on the other hand, was not further examined due to the indicator's conceptual overlap with low-power parenting strategies. It is expected that mind-mindedness will differ across cultures, as research has found that Western mothers tend to exhibit higher levels of mind-related comments (a

measure of mind-mindedness) when compared to their Asian counterparts (Dai et al., 2019; Fujita & Hughes., 2020). Along with mental state talk, the present study also aims to examine cross-cultural differences in a more recent measure of mind-mindedness, that is adaptive communication (acknowledgment of child).

Similarly to mental state talk, it is predicted that Canadian mothers will use adaptive communication more frequently than their Chinese counterparts. Since adaptive communication has only recently been introduced as a measure of mind-mindedness, it has yet to be explored across cultures. Therefore, predictions regarding adaptive communication were developed based on cross-cultural differences in the parent-child relationship. In Canada, the parent-child relationship may be more egalitarian, with parents utilizing a give-and-take approach. In contrast, the Chinese parent-child relationship may be more hierarchical, with parenting practices centering around Confucian ideology such as filial piety (Chao, 1994; Luo et al., 2013). As adaptive communication may tap into a mother's willingness to engage in child-centered parenting and follow her child's lead, these cross-cultural differences suggest that Canadian mothers may utilize adaptive communication more frequently than Chinese mothers. In sum, it is predicted that Canadian mothers will be more mind-minded, as demonstrated through adaptive communication and mental state talk, when compared to their Chinese counterparts (hypothesis 1a).

### ***Hypothesis 1b***

It is predicted Chinese mothers will display higher levels of power assertion and maternal involvement when compared to the Canadian mothers. This is in line with research which has found that Chinese mothers are more likely to use parenting strategies that are more psychologically controlling (Fei-Yin et al., 2013) and higher in maternal involvement (Liu et al.,

2005) when compared to their Western counterparts. In contrast, Canadian mothers tend to more frequently use parenting strategies that encourage child autonomy and independence when compared to Chinese mothers (Liu et al., 2005). These cross-cultural differences in parenting behaviours may be due to contrasting parenting beliefs, socialization goals, and cultural values. For example, Chinese parenting practices may utilize Confucian ideology and parental control to a greater extent than European Americans (Padmawidjaja & Chao, 2010). Confucian parenting ideals tends to endorse the use of *guan* (supervision of and care for one's child) and *chiao shun* (child training), in order to ensure one's child upholds societal values such as filial piety and social harmony (Chao, 1994). As expressed through the conception of *guan*, Chinese mothers may express their concern for their child by being highly dedicated to and involved with their child (Chao 1994; Li, 2021). Moreover, as seen by *chiao shun*, Chinese mothers may use parental control strategies to ensure their child adheres to societal norms and becomes a successful member of their society (Li, 2021). As such, the present study proposes that Chinese mothers may be more more involved and power-assertive when compared to their Canadian counterparts.

### **Direct Association between Maternal Mind-Mindedness and Child Compliance**

#### ***Hypothesis 2***

In both the Canadian and Chinese samples, higher maternal mind-mindedness (MM) will be positively associated with better child developmental outcomes, such as greater child compliance. The relationship between mind-mindedness and adaptive child behaviors, such as child compliance, may be explained by Darling and Steinberg's (1993) parenting model. This integrative model outlines a parent-child dynamic where parental consideration for their child's perspective positively influences the child's inclination to be socialized and comply (Darling &

Steinberg, 1993). Therefore, the present study proposed that when a mother identified (mental state talk) and acknowledged (adaptive communication) her child's unique thoughts and feelings, her child would be more compliant.

### **Indirect Association Between Maternal Mind-Mindedness and Child Compliance**

#### ***Hypothesis 3***

Along with it being predicted that there is a direct relationship between mind-mindedness and child compliance across culture, it is also predicted that this relationship will be mediated by various aspects of parenting in both China and Canada. The dimensions of parenting that are of interest as mediators include: maternal involvement and power assertion.

It is expected that when mothers are mind-minded they may demonstrate high levels of maternal involvement and use lower levels of power assertion, which would then relate to increased child compliance in both China and Canada. To understand how maternal involvement may mediate the relationship between mind-mindedness and child compliance, the conception of *guan* must first be understood. This dimension arises from traditional Chinese parenting practices and illustrates how care for one's child can be manifested through involvement, governance, and training (Chao, 1994). For example, past researchers have found that Chinese mothers tend to more frequently use high power strategies than their Canadian counterparts (Liu & Guo, 2010), while also being more highly involved (Liu et al., 2010). This research further supports the notion that Chinese mothers may demonstrate their warmth and love for their child through governance and involvement, which may seem 'strict' or 'rigid' without consideration for cultural context. Due to the overlap between care for one's child and maternal governance in traditional Chinese parenting, high levels of maternal involvement may be able to explain the process through which mind-mindedness is related to child compliance.

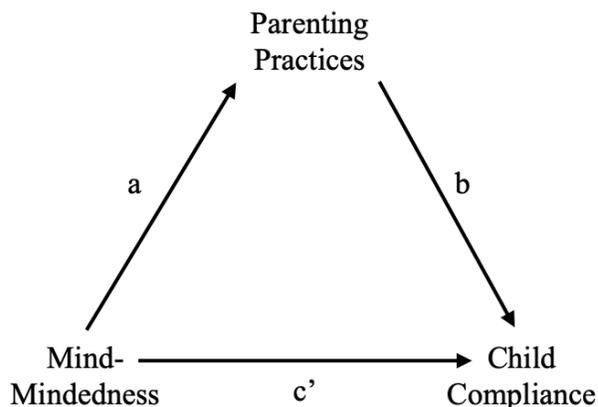
However, when it comes to power assertion, it is predicted that mind-minded mothers will use low levels of power assertion which will then foster child compliance in both China and Canada. To expand, when a mother is sensitive to her child's mind and takes her child's thoughts into account, she may be less likely to use high power parenting strategies in order to coerce her child into compliance. In the past, researchers have found that Chinese parents' warmth was associated with lower levels of parental control (Lau et al., 1990). Moreover, Lau et al. (1990) found that when Chinese parents demonstrated more warmth and used lower levels of parental control, family harmony was perceived to be greater. This research demonstrates that a parent's care and concern for their child is manifested through the parental strategies they use, which then has the capability to influence the parent-child relationship. As such, the present study posits that if a mother's warmth for her child is expressed through mind-mindedness, she may use low power assertion, which would then positively relate to her child's compliance.

In summary, the hypotheses are listed as follows:

- Canadian mothers will use adaptive communication and mental state talk more frequently than Chinese mothers (1a).
- Chinese mothers will have higher levels of maternal involvement and power assertion when compared to their Canadian counterparts (1b).
- Mind-mindedness will be positively related to child compliance in both China and Canada (2).
- The relationship between mind-mindedness and child compliance will be mediated by power assertion and maternal involvement in China and Canada (3).

## Figure 1

*Proposed Mediation Model*



## Methods

### Participants

The data analyzed in the present study is part of a larger cross-cultural project. The sample being used for this study consists of 136 Chinese children (67 boys, 69 girls) and their mothers from Changchun, P. R. China, along with 83 Canadian children (44 boys, 39 girls). The children ranged from 4 to 7 years old. Within the Chinese sample, the mothers ranged from ages 28 to 39 years ( $M = 33.20$ ,  $SD = 2.70$ ). A large portion of the Chinese mothers have achieved a bachelor's degree (31.62%) or honors degree (14.71%), completed high school (13.97%), or attended vocational school (11.76%). The reported annual income for the Chinese sample ranged from RMB 1,800 to 80,000 ( $M = 40,439.47$ ,  $SD = 20,101.07$ ). The Canadian mothers ranged from ages 26 to 45 years ( $M = 35.9$ ,  $SD = .63$ ). When it came to education, the majority of Canadian mothers either went to college (34.94%), had achieved an honors degree (27.71%), or completed a bachelor's degree (20.48%). The Canadian reported annual family income ranged from \$11,000 to \$160,000 ( $M = \$76,500$ ,  $SD = \$32,253.79$ ). Both the Chinese and Canadian samples are representative of a typical urban middle-class population.

## **Procedure**

The study was conducted using two different university campuses: Northeast Normal University in Changchun, Jilin, China, and Trent University in Peterborough, Ontario, Canada. The Chinese participants were recruited using local birth registration offices, while the Canadian participants were recruited using birth announcements in the local newspaper. Prior to the study, participants were contacted by phone to provide them with information regarding the purposes of the study. After initial contact and agreement to participate, letters of information and consent were sent to the mothers. After mothers returned the consent forms, they were provided with questionnaires inquiring about demographic information and child rearing practices. Finally, the mother-child interactions during lab sessions were recorded. During the interactions, the mother-child dyads participated in two 15 minute free-play sessions where they were given toys and no instructions. For the purposes of the present study, only data from the first 15 minute free-play sessions were used

### ***Mind-Mindedness Coding System***

Data regarding mind-mindedness was coded from recorded mother-child free-play sessions. Moreover, the coding system used two different indicators, mental state talk and adaptive communication, to measure mind-mindedness. Mental state talk is defined as any verbal reference to emotions or cognition made by the mother or child about the mother, the child, both the mother and child, or another person. Examples of mental state talk include statements such as “are you *sad*?”, “I *like* this”, “what do you *think*?”. Verbal remarks that do not qualify as mental state talk are referred to as non-mental state talk. Adaptive communication occurs when a mother acknowledges her child rather than rejecting or ignoring them. Scores of adaptive

communication were calculated by subtracting the frequencies of rejection and ignoring from the frequency of acknowledgment.

The initial coding training involved a bilingual graduate student, two senior undergraduate students from the Psychology department of a Canadian university, and their bilingual faculty supervisor. Inter-rater reliability was established using data from a random 20% of each sample (China and Canada). Any disagreements were addressed through discussions until resolved. After achieving an inter-rater reliability, the bilingual graduate student coded the Chinese data while two senior undergraduates coded the Canadian data. Cohen's  $k$  was calculated to determine reliability, with the inter-coder reliability being  $k = 0.95$  for the Canadian sample and  $k = 0.93$  for the Chinese sample.

### ***Observed Child Compliance***

Child compliance was coded from recorded mother-child free play sessions. An observed child behavior was considered compliant when a child promptly responded to and followed any commands or directions given by their mother (Liu, 2006). To record instances and the total frequency of child compliance, an event sampling technique was used. Under this technique, any instance of child compliance was recorded to determine the overall frequency of child compliance. The inter-coder reliability, calculated using Cohen's  $k$ , was  $k = 0.84$  for the Canadian sample and  $k = 0.83$  for the Chinese sample.

### ***Observed Parenting Strategies***

All three observed parenting strategies (low-power, neutral, and high-power) were coded using the mother-child free play interaction coding scheme developed by Liu (2006). This coding scheme involves an event sampling technique, where any instance of low-power, neutral, or high-power strategy use is recorded and then further coded for content. For example, high-power

parenting strategies included any instances of direct commands with force (directing the child's behavior with impatience, criticism, or coerciveness), intrusiveness (interrupting or taking over the child's ongoing activity), criticism (negative critiques or comments regarding the child's behavior), and prohibition (stopping the child from engaging in an activity without further clarification, when it is not related to safety concerns). Neutral strategies consisted of direct commands that were made without the use of force (giving the child requests without asserting power over the child). In contrast, low-power parenting strategies consisted of polite requests (giving suggestions to the child while respecting the child's decision), positive reinforcement (praising, encouraging, commenting on how well a child is doing), and explanation (patiently providing detailed reasoning and instructions for rules or activities). These observed parenting strategies were used to calculate two different measures of parenting: maternal involvement and power assertion. Maternal involvement was calculated by summing any instance of high-power, low-power, and neutral parenting strategies (high-power + low-power + neutral = maternal involvement). Power assertion, on the other hand, was calculated by subtracting the use of low-power parenting strategies from the use of high-power parenting strategies. This was done to determine the tendency of the mother to use high-power parenting strategies rather than low-power parenting strategies. For 20% of each sample (China and Canada), Cohen's Kappa was used to determine the inter-rater reliability for the observed maternal practices, which was  $k = 0.91$  in the Canadian sample and  $k = 0.92$  in the Chinese sample.

## **Results**

### **Statistical Analysis**

Prior to the main statistical analyses, box plots were used to identify significant outliers which were controlled for through winsorization at the 10% (Blaine, 2018). After controlling for

outliers, normality was tested using skewness and kurtosis. This analysis revealed that the distribution of data was non-normal and non-homogenous for the relative frequency of adaptive communication and mental state talk. Therefore, the study proceeded by using Spearman's Correlation to identify any confounding variables, such as maternal level of education, family income, child's age, and mother's age. These extraneous variables were controlled for in the main statistical analyses.

After the preliminary analyses, MANCOVA was used to examine between-subject differences in the variables that did not violate homogeneity of variance. For the variables that did violate homogeneity of variance, non-parametric independent t-tests were used to determine cross-cultural differences. Next, Spearman's Correlation was performed in each country to examine whether mind-mindedness and parenting were related to child compliance. Finally, to test whether parenting mediates the relationship between mind-mindedness and child behavior, a hierarchical linear regression was conducted for both samples.

### **Between Culture Analysis of Maternal Behaviors**

To analyze cross-cultural differences in mind-mindedness and parenting strategies, a one-way MANCOVA was used while controlling for child's age, mother's age, education level, and annual income. For variables that violated normality and homogeneity of variance, a non-parametric independent samples t-test was used. Mind-mindedness was examined using observed adaptive communication and mental state talk as indicators. Maternal involvement and power assertion were used for parenting strategies. In order to control for the total number of mother-child interactions, relative scores of both adaptive communication and mental state talk were used. The relative frequency of mental state talk was calculated by dividing the total amount of mental state talk by the total number of maternal comments (both mental and non-mental). The

relative frequency of adaptive communication, on the other hand, was calculated by dividing overall maternal adaptive communication by the total number of child initiations.

When examining cross-cultural differences in indicators of mind-mindedness, a non-parametric independent samples t-test revealed significant cross-cultural differences. Canadian mothers ( $M = .92$ ,  $SD = .11$ ) used a significantly higher relative frequency of adaptive communication when compared to their Chinese counterparts ( $M = .74$ ,  $SD = .18$ ),  $t(157) = 7.43$ ,  $p < .001$ . The cross cultural difference had a small effect size,  $d = .16$ . Moreover, Canadian mothers ( $M = .20$ ,  $SD = .07$ ) had a higher relative frequency of mental state talk when compared to the Chinese mothers ( $M = .06$ ,  $SD = .03$ ),  $t(157) = 13.81$ ,  $p < .001$ . This cross-cultural difference in mental state talk had a minor effect size,  $d = .05$ . All between culture analyses can be seen in Table 1.

When it came to the MANCOVA, a significant main effect was found for country,  $Pillai = .673$ ,  $F(12, 73) = 12.51$ ,  $p < .001$ . It was further revealed that Canadian mothers ( $M = -20.38$ ,  $SD = 1.57$ ) used significantly less power assertion than Chinese mothers ( $M = -15.86$ ,  $SD = 10.22$ ),  $F(1, 132) = 6.22$ ,  $p = .01$ . The cross-cultural difference in power assertion had a medium effect size,  $\eta^2 = .05$ . However, there were no significant cross-cultural differences in mother's use of maternal involvement.

### **Between Culture Analysis of Child Behaviors**

A preliminary one-way MANCOVA was conducted to determine whether child compliance differed across cultures. However, as the research purpose focused on the relationship between parenting and child compliance, cross-cultural differences in child compliance alone will not be discussed further. Throughout the analysis, extraneous variables such as child age, mother age, education, and income were controlled for. It was revealed that

Chinese children were significantly more compliant than Canadian children ( $M = 26$ ,  $SD = 14.82$ ),  $F(1, 89) = 5.55$ ,  $p = .02$ . The cross-cultural difference in child compliance was found to have a large effect size,  $\eta^2 = .17$ . All between-culture analyses can be seen in Table 1.

**Table 1**

*Cross-Cultural Comparison of Mind-Mindedness, Parenting Strategies, and Child Behavior in China and Canada.*

Variable	Canada				China				<i>t</i>	<i>F</i>
	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>		
Observed Parenting										
MI	24.60	11.49	7.00	56.00	24.37	12.79	4.00	80.00		0.17
PA	-20.38	11.57	-53.00	-3.00	-15.86	10.22	-44.00	0.00		6.22*
Mind-Mindedness										
MST	23.63	10.46	4.00	52.00	10.95	7.34	1.00	31.00		46.73***
AC	50.71	16.36	9.00	88.00	52.09	23.51	0.00	135.00		0.93
MSTrf	0.20	0.07	0.04	0.44	0.06	0.03	0.01	0.16	13.81***	
ACrf	0.92	0.11	0.41	1.00	0.74	0.18	0.00	1.00	7.43***	
Child Behavior										
COM	26.00	14.82	6.00	93.00	35.11	15.03	6.00	70.00		5.55*

*Note.* MI = maternal involvement; MST = mental state talk; AC = adaptive communication; MSTrf = mental state talk relative

frequency ; ACrf = adaptive communication relative frequency; COM = compliance.

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

### **Within Cultural Analysis of Maternal Parenting Behaviors**

To determine whether the indicators of mind-mindedness were related to the indicators of parenting practices, Spearman's Correlations were conducted within both samples. This preliminary analysis aimed to determine how mind-mindedness, parenting strategies, and child compliance relate to one another. Within the Chinese sample, mental state talk was negatively related to power assertion,  $r(93) = -.34, p < .001$ , and positively related to maternal involvement,  $r(93) = .23, p = .03$ . Within the Canadian sample, no significant relationships were found between parenting strategies and child compliance. All relations can be seen in Table 2 and Table 3.

### ***Correlation Between Maternal and Child Behaviors***

To test hypothesis 2, Spearman's Correlations were conducted to determine whether the maternal variables (mind-mindedness and parenting strategies) were related to child compliance. In the Canadian sample, child compliance was negatively related to power assertion,  $r(64) = -.51^{**}, p < .001$ , and positively related to maternal involvement,  $r(65) = .49, p < .001$ . Similarly, Chinese children's compliance was positively associated with power assertion,  $r(93) = .54, p < .001$ , and positively associated with maternal involvement,  $r(93) = .65, p < .001$ . Moreover, in the Chinese sample, child compliance was only positively related to mental state talk,  $r(93) = .41, p < .001$ , and adaptive communication,  $r(93) = .46, p < .001$ . No other significant correlations were found between maternal and child behaviors. All correlations can be seen in Table 2 and Table 3.

**Table 2**

*Correlation Among Maternal Parenting Strategies, Mind-Mindedness, and Child Behavior in China*

Variable	1	2	3	4	5
1. Mental State Talk	-	.54***	.23*	-.34***	.41***
2. Adaptive Communication		-	.31**	-.44***	.46***
3. Maternal Involvement			-	-.67***	.65***
4. Power Assertion				-	.54***
5. Compliance					-

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

**Table 3**

*Correlation Among Maternal Parenting Strategies, Mind-Mindedness, and Child Behavior in Canada*

Variables	1	2	3	4	5
1. Mental State Talk	-	.28*	.06	-.14	.05
2. Adaptive Communication		-	.03	-.04	-.13
3. Maternal Involvement			-	-.91	.49***
4. Power Assertion				-	-.51***
5. Compliance					-

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

## Parenting as a Mediator

Prior to conducting the mediation analysis, all statistical assumptions were met (linearity, independent of errors, homoscedasticity, multicollinearity). PROCESS Macro (Version: 29) was then employed to examine whether maternal involvement and power assertion mediate the relationship between mind-mindedness and child behavior in Canada and China after controlling for the influence of extraneous variables (e.g., family income, child age, mother age and education). This analysis aimed to test hypothesis 3 which focused on whether mind-mindedness was related to child behavior directly or indirectly through the use of various parenting strategies in China and Canada.

### *Direct Effects*

Within the Chinese sample, the direct effect of mental state talk was positive and significant,  $B = .44$ ,  $SE = .11$ ,  $t = 4.01$ ,  $p < .001$ , 95% CI [.22, .66]. The results for adaptive communication were similar, with a significant and direct effect being found for child compliance,  $B = .40$ ,  $SE = .11$ ,  $t = 3.74$ ,  $p < .001$ , 95% CI [.19, .62]. Within the Canadian sample, the results suggest that both adaptive communication and mental state talk did not directly affect child compliance. Direct effects can be visualized below in Table 4.

### *Indirect Effects*

In this section, a Hierarchical Linear Regression was used to determine the indirect effects of mind-mindedness (adaptive communication and mental state talk) on child compliance when parenting variables (maternal involvement, and power assertion) acted as a mediator in China and Canada.

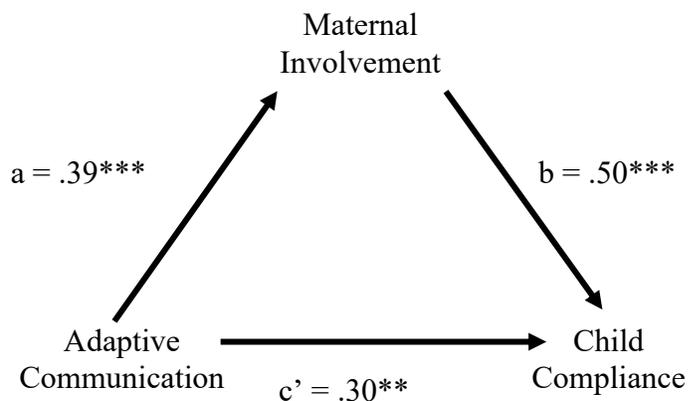
**Adaptive Communication as a Predictor.** For the Chinese sample, a significant indirect effect between adaptive communication and child compliance was found when both maternal

involvement,  $B = .19$ ,  $SE = .08$ , 95%CI [.06, .38], and power assertion,  $B = .12$ ,  $SE = .07$ , 95% CI [.01, .29], acted as a mediator. As a significant total and direct effect were also found for the relationship between mind-mindedness and child compliance, this indicates that both maternal involvement and power assertion partially mediate the relationship between mind-mindedness and child compliance. Further confirming the mediation, a Sobel Test revealed that the effect size was significant when maternal involvement,  $z = 2.89$ ,  $p < .005$ , and power assertion,  $z = 2.20$ ,  $p < .05$ , acted as mediators. The significant partial mediations can be visualized in Figure 2 and the indirect effects for all model paths can be seen in Table 5 and 6.

**Mental State Talk as a Predictor.** Within the Chinese sample, A significant indirect effect was also found for the relationship between mental state talk and child compliance when maternal involvement acted as a mediator,  $B = .1163$ ,  $SE = .0679$ , 95%CI [.0085, .2707]. However, the a pathway was insignificant, meaning that no mediation took place. Moreover, there was no indirect effect of mental state talk on child compliance through the use of power assertion. The indirect effects for all model paths can be seen in Table 5 and Table 6.

**Figure 2**

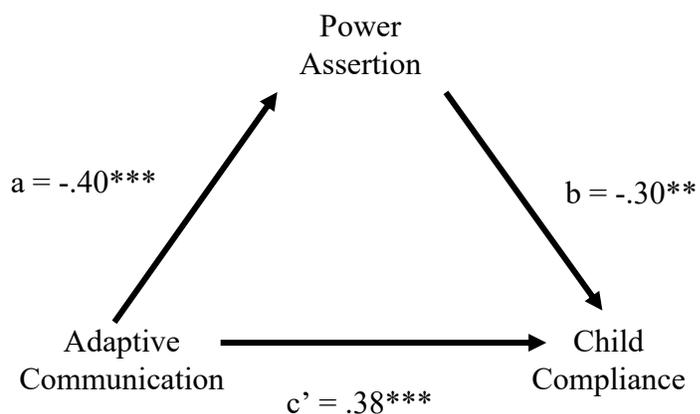
*Significant Partial Mediation where Maternal Involvement Mediates the Relationship Between Adaptive Communication and Child Compliance in China*



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

**Figure 3**

*Significant Partial Mediation where Power Assertion Mediates the Relationship Between Adaptive Communication and Child Compliance in China*



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

**Table 4***Direct Model Effects of Mind-Mindedness on Child Behavior in China and Canada*

Model Path	Effects	SE	95% CI
China			
AC→COM	.40	.11	[.19, .62]
MST→COM	.44	.11	[.22, .66]
Canada			
AC→COM	.10	.12	[-.14, .34]
MST→COM	.01	.12	[-.24, .25]

*Note.* AC = adaptive communication; MST = mental state talk; IP = internalizing behavior problems; EP = externalizing behavior problems; COM = child compliance.

**Table 5i***Indirect Effects of Mind-Mindedness on Child Behaviour via Parenting Strategies in China*

Model Path	Effects	SE	95% CI
The mediating effect of maternal involvement (MI)			
AC→MI→COM	.19	.08	[.06, .37]
MST→MI→COM	.12	.07	[.01, .27]
The mediating effect of power assertion (PA)			
AC→PA→COM	.12	.07	[.01, .29]
MST→PA→COM	.08	.05	[-.01, .20]

*Note.* AC = adaptive communication; MST = mental state talk; MI = maternal involvement; PA = power assertion; COM = child compliance.

**Table 6***Indirect Effects of Mind-Mindedness on Child Behaviour via Parenting Strategies in Canada*

Model Path	Effects	SE	95% CI
The mediating effect of maternal involvement (MI)			
AC→MI→COM	-.09	.07	[-.16, .14]
MST→MI→COM	.07	.08	[-.10, .21]
The mediating effect of observed power assertion (PA)			
AC→PA→COM	-.03	.07	[-.18, .13]
MST→PA→COM	.09	.08	[-.08, .24]

*Note.* AC = adaptive communication; MST = mental state talk; MI = maternal involvement; PA = power assertion; COM = child compliance.

## **Discussion**

Baumrind's parenting typology has been used extensively by developmental researchers to examine and classify parenting styles. Within this framework, there are two key dimensions where parents can align: responsiveness and demandingness. Responsiveness measures the extent to which a parent appropriately responds to their child's emotional and developmental needs (Maccoby & Martin, 1983). One way a parent may better determine how to respond appropriately to their child's behavior is through recognizing and acknowledging their child as a unique individual with their own thoughts and feelings. This parental consideration of a child as an independent being rather than an extension of the parent can be classified as mind-mindedness (Meins, 1997). Mind-mindedness has been found to play a crucial role in mother's ability to develop a healthy and secure attachment with their children (Laranjo et al., 2008; Meins, 1998; Schacht et al., 2017). As such, the over-arching purpose of the present study was to shed light on cross-cultural differences in the mother-child relationship by examining whether maternal parenting strategies mediated the relationship between mind-mindedness and child compliance. To achieve this goal, the study first examined cross-cultural differences in mind-mindedness and parenting strategies, then examined the direct relationship between maternal parenting behaviors and compliance, and finally examined the indirect relationship between mind-mindedness and compliance.

### **Cross-Cultural Differences in Parenting Behavior**

The following predictions focus on two aspects of parenting: mind-mindedness and parenting strategies. Hypothesis 1a predicted that Canadian mothers would more frequently utilize mind-mindedness compared to their Chinese counterparts. Hypothesis 1b predicted that

Chinese mothers would more frequently use power assertion and maternal involvement compared to Canadian mothers.

### *Mind-Mindedness*

In line with hypothesis 1a, it was found that Canadian mothers had higher relative frequencies of both indicators of mind-mindedness (mental state talk and adaptive communication). The results regarding mental state talk are consistent with past research, which found that British mothers had significantly more child-focused and mind-related comments compared to their Japanese counterparts (Fujita & Hughes, 2020). Similarly, Australian mothers used more appropriate mental state talk, less non-attuned mental state, and more references to desires and preferences compared to Chinese mothers (Dai et al., 2019). Researchers have identified that these differences in mind-mindedness occur due to cultural variations in parental beliefs and values surrounding child-rearing goals (Dai et al., 2019). Indeed, Chen-Bouck (2019) argued that Chinese mother's collectivist socialization goals and training beliefs directly impact mainland Chinese mothers' parenting styles and behaviors, with an emphasis on the use of parental control to obtain child obedience and conformity. As such, the recognition of a child's unique thoughts and opinions may not be viewed as the 'optimal' parenting practice if a critical child-rearing goal is to socialize one's child to uphold social cohesion through conformity to cultural norms.

The construct of adaptive communication has only recently been introduced as an indicator of parental mind-mindedness. While the use of mental state talk captures a mother's recognition of her child's mental states, adaptive communication demonstrates a mother's willingness to follow her child's lead. Indeed, Fishburn et al. (2022) argue that parents high in mind-mindedness may provide guidance while also valuing and taking into account their child's

opinions. In contrast, parents who are low in mind-mindedness may take the lead and reject or ignore their child's input. As such, Chinese mothers may utilize adaptive communication less frequently than their Canadian counterparts due to the emphasis on filial piety and family hierarchy within Chinese parenting practices. For example, one study found that Hong Kong-Chinese mothers embraced traditional Chinese parenting beliefs (eg., *guan*) and socialization goals such as filial piety and harmonious social relationships (Chan & Wyver, 2009). Therefore, in order to maintain the family hierarchy, Chinese mothers may take the lead and utilize parent-centered strategies rather than following and collaborating with their child. The present study highlights the importance of examining parenting practices through a cultural lens, paving the way for future researchers to further examine adaptive communication and mental state talk across cultures.

### ***Parenting Strategies***

Hypothesis 1b was partially supported as Chinese mothers used higher levels of power assertion than Canadian mothers. In contrast to what was predicted, no significant cross-cultural differences were found in maternal involvement. In line with Chinese mothers being more power-assertive than Canadian mothers, past researchers have found that Chinese mothers tend to utilize high-power parenting strategies to a greater extent than their Canadian counterparts (Liu & Guo, 2010). However, these findings do not indicate that Chinese parents are uncaring or cold with their children. Chinese parenting practices and child socialization goals are rooted in Confucian ideology, where filial piety and child obedience are valued. In contrast, Canadian parenting behaviors are grounded in Western individualism, where values such as child autonomy and independence are emphasized (Chao, 1994; Chao & Sue, 1996). As a result of these cross-cultural variations in parenting norms, using power-assertive parenting strategies

may not mean the same thing in China as it does in Canada. Zhu and Chang (2019) argue that that due to the value placed on social harmony within Chinese culture, it is necessary to emphasize social learning (learning through observation or imitation rather than through independent experimentation) in parenting and education. Therefore, in order to ensure their children grow into successful members of society, Chinese parents may utilize high power-assertion and other parenting practices that seem authoritarian.

While Chinese mothers tended to more frequently use power-assertive parenting strategies compared to the Canadian mothers, they demonstrated similar levels of maternal involvement. This finding is inconsistent with past research, which has found that Chinese mothers tend to demonstrate higher overall levels of maternal involvement when compared to their Canadian counterparts (Liu et al., 2005). However, the data in Liu et al. (2005)'s study was collected using 2-year-old children whereas the data from the present study was collected using children ranging from 4 to 7 years old. It may be that Chinese mother's level of involvement was influenced by their child's age. For example, Pan et al. (2006) found that when their children were 5 years old, American and Chinese mothers reported similar levels of involvement in their child's number learning. In contrast, Chinese mothers of 7-year-old children reported more frequent involvement in mathematics learning than their American counterparts (Pan et al., 2006). This may occur because Chinese parents tend to be more involved in their children's academic learning after they begin school while American parents tend to be more involved in their children's academic learning prior to them enrolling in school (Stevenson & Stigler, 1992). While this suggests that child age may play a role in the extent to which mothers initiate involvement through mother-child interactions, future researchers should further examine and confirm the dynamic between child age and maternal involvement.

In summary, results from the present study suggest that while Chinese mothers tend to exhibit more power-assertion than Canadian mothers, they demonstrate similar levels of maternal involvement. Through the observation of mother-child interactions, this research sheds light on cross-cultural differences and similarities in maternal parenting practices.

### **Association Between Mind-Mindedness and Child Behavior**

#### ***China***

Hypothesis 2 predicted that the use of maternal mind-mindedness would be positively related to child compliance. This hypothesis was supported for the Chinese sample, as both indicators of mind-mindedness (mental state talk and adaptive communication) were found to foster child compliance. According to Darling and Steinberg's (1993) integrative parenting model, parenting practices are the tools through which parents assist their child in achieving socialization goals. Moreover, children may be more willing to be socialized (eg., to be compliant) when their parents recognize and accept their children's perspectives. It was argued that this reciprocal dynamic occurs because the parenting style or practices used convey the parental attitude towards their child (Darling & Steinberg, 1993). In essence, if a parent demonstrates consideration for their child's thoughts and feelings by using adaptive communication and mental state talk, the child may notice and reciprocate by being compliant. This demonstration of high compliance is a crucial milestone in child development, as it shows the child's ability to internalize the social rules, norms, and values needed to become a successful member of society (Kochanska, 2002). The present study's findings not only fill a significant gap in research, but also informs parents about effective parenting strategies that can foster adaptive child behavior and a healthy parent-child relationship.

### *Canada*

In Canada, hypothesis 2 was not supported as none of the indicators of mind-mindedness were related to child compliance. Previous research has found that Canadian mothers tend to utilize authoritative parenting to a greater extent than Chinese mothers, with authoritative parenting involving placing emphasis on child-focused practices and child autonomy (Liu & Guo, 2010). As Canadian child-rearing practices already involve an equal give-and-take between mother and child, Canadian children may not be as sensitive to the maternal recognition and acknowledgement of their mental state states (mind-mindedness). This may explain why mind-mindedness was related to child compliance in China but not in Canada.

### **Parenting Style as a Mediator**

Hypothesis 3 focused on whether parenting practices would mediate the relationship between maternal mind-mindedness and child compliance in China and Canada. Specifically, Hypothesis 3 predicted that mothers high in mind-mindedness would exhibit greater maternal involvement and use less power-assertion, which would then lead to increased child compliance.

### *China*

Within the Chinese sample, only hypothesis 3b was supported, revealing two different partial mediations. For the first partial mediation, it was found that when Chinese mothers used adaptive communication, they were more involved, which, in turn, facilitated child compliance. In the second mediation, it was found that when Chinese mothers used more adaptive communication, they employed less power-assertion, which was then related to increased child compliance. Moreover, maternal adaptive communication was directly and positively related to child compliance in both mediation models. This research is pioneering for two reasons: 1) adaptive communication has yet to be examined across cultures, and 2) power-assertion and

maternal involvement have not been tested as mediators in the relationship between mind-mindedness and child compliance. As such, arguments supporting these findings are largely based on the theoretical foundations of mind-mindedness and parenting behaviors.

The indicators of mind-mindedness of interest to the present study were mental state talk (“think” or “want”) and adaptive communication (maternal acknowledgment). The study proposed that, for Chinese mothers, concern for their child’s mental states might manifest through high levels of maternal involvement and low power assertion due to the overlap between supervision/governance and care in traditional Chinese parenting (Li, 2021). It was expected that when Chinese mothers exemplify their mind-mindedness through maternal involvement or low power assertion, their children would be more compliant. The results supported this notion, as when Chinese mothers used more adaptive communication, they were more involved in mother-child interactions and less power assertive, which then facilitated their child’s compliance. This interaction may be explained by the integrative model of parenting proposed by Darling and Steinberg (1993). According to this model, parenting goals and values are behaviorally manifested through parenting practices, which then influences adolescent outcomes. In terms of the present study, the value parents have for their child’s mental states (mind-mindedness) was manifested through their parenting practices (maternal involvement and power assertion), which then influenced their child’s outcomes (compliance).

However, these significant mediations were found for adaptive communication but not for mental state talk, possibly because adaptive communication goes beyond simple recognition of a child’s mental states. Instead, adaptive communication taps into the extent to which a mother actively acknowledges and values her child’s unique thoughts and feelings (Fishburn et al., 2022). Therefore, when a mother demonstrates her willingness to follow and value her

child's mind, rather than merely recognizing it, she may be more engaged and less power-assertive, thereby fostering compliance.

This research not only gives empirical evidence that mind-mindedness is manifested through maternal involvement and low power assertion, but also underscores the importance of acknowledging a child's mental states to promote adaptive behaviors. Compliance is a crucial aspect of children's development, as it reflects their ability to internalize societal norms (Kochanska, 2002). Without the ability to adhere to societal norms and rules, children may struggle to integrate fully into their society as functioning members (Kochanska, 2002). By demonstrating that mind-mindedness is related to child compliance both directly and indirectly through maternal involvement and power assertion, the present study offers a deeper understanding of how parents can support their children in developing adaptive behaviors essential for them to integrate into society successfully.

### *Canada*

Within the Canadian sample, Hypothesis 3 was not supported, as none of the measures of parenting acted as a mediator for the relationship between mind-mindedness and child behavior. Unlike the Chinese sample, the results in the Canadian sample did not lend support to the notion that parenting practices mediate the relationship between mind-mindedness and child compliance. This difference may occur due to cross-cultural variations in parental socialization goals. For example, it was found that while Canadian mothers tend to emphasize their child's autonomy, Chinese mothers tend to encourage their child's connectedness (Liu et al., 2005). Moreover, Western parents were found to use mental state talk and appropriate mental state talk more frequently than Chinese parents (Dai et al., 2019; Fujita & Hughes, 2020). Therefore, Chinese children might be more likely to be affected by maternal mind-mindedness due to the

lack of emphasis on it at the cultural level. In comparison, Canadian children are less likely to be affected because maternal mind-mindedness is considered normative, and children are accustomed to it. Therefore, the mediation model was only found in China but not in Canada.

The present study made several unique contributions to current research by providing a new understanding of parenting across cultures. This study not only utilized observational measures of maternal and child behaviors, but also focused on parenting practices (maternal involvement and power assertion) that are closely aligned with traditional Chinese parenting ideals. This approach contrasts with past research, which has largely focused on Baumrind's parenting typology. By going beyond Baumrind's Western parenting framework and instead emphasizing maternal involvement and power assertion, the present study may have provided a comprehensive and culturally sensitive understanding of the mother-child relationship.

This research was also the first to investigate adaptive communication across cultures, a concept only recently introduced by Fishburn et al. (2022). Before the introduction of the measure, mind-mindedness was primarily assessed using mental state talk and the quality of mental state talk. Therefore, the current research provides a unique perspective on the use of adaptive communication as an indicator of mind-mindedness in both China and Canada.

In addition to its unique contributions to research, the present study may also have practical applications. The significant mediation models in China show that maternal mind-mindedness impacted the parenting practices mothers used, which then influenced their child's developmental outcomes. Since adaptive communication fosters a reciprocal dynamic between mother and child, where there is equal give-and-take, mind-mindedness could be used as an early intervention point for the mother-child relationship.

## Conclusion

The present study is not only the first to examine Fishburn et al.'s (2022) interactional measure of mind-mindedness across cultures but is also the first to examine whether parenting style mediates the relationship between mind-mindedness and child behavior in both China and Canada. The results highlight that (1) Canadian mothers used significantly more mind-mindedness whereas Chinese mothers were more power assertive; (2) both measures of mind-mindedness were significantly and positively related to child compliance in China; and (3) maternal involvement and power assertion partially mediated the relationship between mind-mindedness and child compliance in China. This research emphasizes the importance of taking cultural context into account by illuminating the cross-cultural variations that exist in parenting practices such as mind-mindedness. Moreover, the present study demonstrated that Chinese mother's tendency to acknowledge their child rather than reject or ignore them positively impacted their ability to utilize involvement and low power assertion and, in turn, enhanced their child's compliance. In sum, this research advances developmental psychology's understanding of the application of mind-mindedness in relation to other parenting practices across culture while creating a foundation for future researchers to further examine novel measures of mind-mindedness.

One of the main limitations for the present study was the way in which mental state talk was measured. While the present study operationalized mental state talk as occurring when references were made to emotions (eg., "I'm happy" or "are you sad?") or cognition (eg., "I think" or "I want"), other researchers have identified the importance of coding for the quality of maternal mind-related comments. This has been done by using Meins and Fernyhoughs (2015) coding scheme for appropriate mind-related comments (accurate descriptions of child's mental

states) and non-attuned mind-related comments (inaccurate descriptions of child's mental states). Research has found that appropriate mind-related comments are associated with better child development outcomes and non-attuned mind-related comments are associated with poorer child development outcomes (Colonnesi et al., 2019; Dai et al., 2019). As such, future research should take into account the accuracy in which a mother is able to describe her child's thoughts and feelings when measuring mind-mindedness.

Another limitation of the present study was that only maternal parenting practices and maternal mind-mindedness was examined. Research has found that combined maternal and paternal parenting practices matter when it comes to child development, with child delinquency being lowest when at least one parent was authoritative and child delinquency being highest when both parents were neglectful (Hoeve et al., 2011). Other studies have found that paternal authoritarian practices significantly predicted externalizing behavior problems whereas authoritative paternal practices were positively related to adaptive social behaviors (Rinaldi & Howe, 2012). As such, it may be beneficial for future researchers to investigate the unique effect of paternal parenting practices along with the combined effect of paternal and maternal parenting practices.

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## Appendix A

**Table 12**

*Total Model Effects of Mind-Mindedness on Child Behavior through Parenting Style in Canada and China*

Model Path	Effects	SE	95% CI
<b>Canada</b>			
AC→COM	.07	.14	[-.21, .35]
MST→COM	.09	.14	[-.20, .38]
<b>China</b>			
AC→COM	.52	.11	[.31, .73]
MST→COM	.43	.11	[.21, .65]

*Note.* AC = adaptive communication; MST = mental state talk; COM = child compliance.

## Appendix B

### Telephone Script for Initial Contact with Participants

#### First Call

- the purpose of the first call is to give the parents a brief description of the study and procedures and to see whether or not they would be interested in participating

- “Hello. May I please speak to [*parent’s first and last name*]?”
- [*If parent is not home*]  
“Okay, that’s alright. Do you know when he/she will be in so that I could speak to them? [*If asked*] “I am calling about a study that we are conducting at Trent University that we would like him/her to participate in.”
- [*If parent is home*]  
“Hi, my name is \_\_\_\_\_. I am a research assistant in Dr. Mowei Liu’s lab at Trent University. We are conducting a study regarding parental achievement orientation and children’s beliefs about learning. You qualify for the study and we would like to invite you to participate.
- [*If parent asks why they qualify*]  
“We are conducting research based on children of preschool or kindergarten age. We are aware that you have a child at this age.”
- [*If parent asks about how we got this information*]  
- birth announcements in the local newspaper from 4-6 years ago  
- specify which issue (all listed next to the child’s name)
- [*If parent does not agree to participate*]  
“Okay. That’s alright. Thank you for your time. Bye”
- [*If parent asks about the purpose of the study*]  
“The purpose of this study is to see how parents influence their children’s learning. We will collect same information from China and make comparisons as well. ”  
The purpose of the study is to:
  1. Examine the cross cultural similarities and differences in parental academic-related beliefs and practices
  2. Examine the cross cultural similarities and differences in children’s beliefs about learning
  3. To investigate how parental achievement-related beliefs and practices and linked to children’s academic performance in both Canada and China
- [*If parent does agree to participate*]  
“That’s great! Participation will involve answering some questionnaires and a

short visit to the university lab. You will be receiving \$30 for your participation and compensation for your time. So what will happen first is we will send you some questionnaires regarding general information about family background, child-rearing practices, and parental beliefs about academic performance as well as a consent form stating that you agree to participate. We will be mailing these to you so we will need your contact information [*e-mail, address, postal code, etc.*] How would you prefer we contact you?

The package will contain an addressed, stamped envelope for you to mail the information back to us. Or, you can bring everything with you when you come to visit the university. Next, we will invite you and your child to visit our research lab at Trent University. You and your child will be spending some time engaging in fun play activities. This visit will be video-taped in order to address the research question. Do you have any questions regarding the study?

- [*If asked, more specifically about the sessions*]  
These sessions will include free play, building a “castle” with lego blocks, completing simple math problems together, reading a book together and your child will be invited to play with the experimenter for a while and asked to complete a story. [*If asked about the story*] “The story is about a little bird who is learning how to fly and your child’s answers will be recorded .”
- [*If asked about confidentiality*]  
“All information collected will be stored in secure places and confidential. The information will be identified by a subject number only not by name. If the results are published, your name will not be used and no information that discloses your identity will be released or published.
- [*If asked about how long it will take*]  
“The questionnaires should take about one hour to complete.  
The visit will last a total of about 90 minutes.”
- [*If asked about the results/ follow up studies*]  
“When we have tabulated the results of the study we will send out a newsletter with the general preliminary results.”  
“We may invite you to come in again in 2-3 years.”
- [*If asked about dropping out*]  
“There is no obligation to complete the study once you begin. You are free to drop out at any time.”
- [*Wrap up*]  
“Thank you very much for your interest. You will be receiving the questionnaires in the mail shortly and I will call you again in the next couple of days to make arrangements for a visit to the university or I can e-mail you if you prefer. Bye.”

### Second Call

- the purpose of the second call is to remind parents to complete the questionnaires that they have been given and to schedule a time for the lab visit

- “Hi, may I please speak to [*parent’s first and last name*]
- [*If parent is not at home*]  
 “Okay, that’s alright. Do you know she will be in so that I would speak with her?”  
 [*If asked*] “I am calling about a study that she is participating in at Trent University. I will call back later. Thanks. Bye.”
- [*If parent is at home*]  
 “Hi my name is \_\_\_\_\_, a research assistant in Dr. Liu’s lab at Trent University. We spoke a few days ago and I am calling to do a follow up. I was just checking to make sure that you have received the questionnaires alright and to make arrangements for a visit to the university.”

[*come up with a tentative time for a visit*]

“Okay, when would be a good time for you to come to visit the lab? We will be starting anytime in January and after.”

- “Do you know how to get to the university?” and “How did you plan on coming (bus, drive, etc.)?”
- [*If mother does not know how to get to the university, provide detailed instructions using a map*]
- [*If driving*] “Go North on Water Street; continue north for 6.5 km; turn right on Nassau Mills Road; continue straight (Nassau Mills Road becomes River Road) and then turn right at East Bank Drive. You will be parking in the OC lot and someone will meet you at the entrance of the building next to the cafeteria.”
- [*If taking the bus*] “Take the Trent Express (East Bank Bus) from the bus terminal down town. This will bring you right in between Gzowski and Otonabee Colleges. You’ll want to walk towards the building on your right. Someone will be there to meet you at the front entrance.”
- [*If mother does know*]  
 “Great! Do you have any questions? Alright, we will see you \_\_\_\_\_. Have a great day!”

## Appendix C

### Letter of Information and Consent (English)

Dear Parents:

We would like to invite you and your child to participate in a cross-cultural project concerning the role that parents play in children's academic achievement. This research project will help us to understand how parents influence their children's learning beliefs and behaviors.

The participation involves completion of some questionnaires by mothers and a visit of the mother and the child to our research laboratory, located in the Dept. of Psychology, Trent University. During the visit to the laboratory, we will be observing and videotaping each participating mother and child following a specific procedure.

The mother and the child will be in a room with many toys. For the first 15 minutes, the mother and the child will be free to play with a variety of toys present in the room. The experimenter will then enter the room and ask the child to pick up the toys and put them into baskets. In the next session, the experimenter will ask the child to build a "castle" with lego blocks (10 minutes). Next, mother and the child will be asked to complete a booklet of simple math problems (e.g., 1+1) together (10 minutes). When they are finished, the experimenter will ask the mother and the child to read a book together (10 minutes). The whole session will be ended with another 15 minutes of free play. Following the whole session, each child will be invited to play with the experimenter and then be asked to complete a story to assess his/her beliefs about learning. The visit will last for about a total of 90 minutes. Some of the videotaped mother-child interaction will be coded by the researcher in order to answer the research question.

Parents of the child who are interested in the study will complete a set of questionnaires at home concerning general information on family background, child behaviors, child-rearing practices and parental beliefs about academic performance. It will take about an hour to complete these questionnaires. In appreciation for your contribution to the study and to compensate you for research-related expenses, you will be receiving \$30 for participation when both the visit to our research laboratory and the questionnaires are completed.

All information collected during the course of this study will be stored in secure places and remain confidential. The information will be identified by subject number only, and not by name. If the results of the study are published, your name will **not** be used and **no** information that discloses your identity will be released or published. Only the researcher and the research assistants will have access to the data for research purpose. Data from this study, including the videotapes, may be used for further studies by the research team. All of the data will be kept in secure places without identifying information when this project and the follow-up studies are completed.

We expect participation will be enjoyable. There are no known risks to participating in this study. Participation in this study is completely voluntary. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time.

## Appendix D

### Letter of Information and Consent (Chinese)

#### 给家长的信

亲爱的家长：

我们诚挚地邀请您和您的孩子参加我们的“家长对孩子的学业成就的影响”的研究。这项研究是由加拿大社会科学人文研究理事会资助的跨文化研究课题。项目由加拿大川特大学（Trent University）心理学系教授刘漠威和东北师范大学心理学系教授康静梅负责。我们的中加合作小组希望通过这一研究，进一步了解在中国和加拿大，父母对孩子的学习有怎样的影响。

我们将邀请您和您的孩子到我们东北师范大学心理学系的实验室来。实验室里放了很多玩具。我们为您和您的孩子准备了一系列的活动。在前十五分钟里，您和您的孩子可以在房间里自由活动。之后，实验人员将会请您的孩子把所有的玩具收拾到一个篮子里。然后，实验人员将请您的孩子用乐高积木照着模型搭一个一样的房子（10分钟）。接下来，您和您的孩子将一起做一些简单的数学题目，如1+1等（10分钟）。然后，我们会请您和您的孩子一起读一本书（10分钟），最后你们将会有15分钟在房间内自由活动。在完成整个环节后，我们会给您的孩子讲两个小故事，我们只讲个开头，请您的孩子帮我们来接一个结尾。我们会对您和您的孩子进行录像，以便进一步分析。整个录像大约持续一个半小时。

另外，我们还将请您填一些关于家庭背景，孩子行为，孩子教养方式以及家长对学习态度的问卷。填写这些问卷大约需要1个小时的时间。

我们会将实验的录像和问卷妥善保管。除了实验项目小组，任何其他个人和群体都无权动用。在此项目基础上发表的文章或者书籍中，都不会披露您的身份和姓名。

参与实验与否是完全自愿的，您可以拒绝参加，可以拒绝回答任何问题，也可以在任何时候退出研究。

本研究已经由加拿大川特大学（Trent University）科研伦理道德委员会审核通过，对参与实验者没有人身或者心理上的不良影响。如果你有什么问题或者不清楚的地方，请打电话给\_\_\_\_\_或者写信给她\_\_\_\_\_或者发邮件至\_\_\_\_\_

谢谢。

\_\_\_\_\_  
\_\_\_\_\_

### 协议书

我已经读过“家长对孩子的学业成就的影响”项目组给家长的信。

我已经了解信中所述的实验目的和过程。

据我所知，这一项目已经由加拿大川特大学（Trent University）科研伦理道德委员会审批通过。

我已经收到了协议书的复印版。

我\_\_\_\_\_，作为孩子的母亲，同意我的孩子\_\_\_\_\_，参与这项研究

\_\_\_\_\_  
签名

\_\_\_\_\_  
日期

我\_\_\_\_\_，作为孩子的母亲，同意参加这项研究

\_\_\_\_\_  
签名

\_\_\_\_\_  
日期

## Appendix E

### Observation Protocol

#### Preparation:

- Clean up the room, vacuum the carpet if necessary. Wipe the one-way mirror, move unnecessary desks, chairs and two purple boards out of the room(I am afraid it is not safe leaving them there while the child is playing)
- Make sure the equipments are connected correctly. DVDs are ready and placed in 3 DVD recorders.
- Snack (cookies) and drink (juice box) for the child.
- Get ready to make coffee for parents.

#### Materials:

- Toys spread out in the playroom
- Toys:
  - 1) 2 stacking and sorting toys (in the box labeled as "stacking & sorting")
  - 2) 2 large vehicles (in the box labeled as "large vehicles")
  - 3) 2 blocks and Lego (in the box labeled as "blocks")
  - 4) 2 dinosaurs, 1 tigger puppet (in the box labeled as "stuffed toys")
  - 5) 2 puzzles
  - 6) Remote control car
  - 7) dolly nursing set (including the doll, a face towel, shampoo, baby bath, a diaper, a bottle and a toilet)
  - 8) coloring board
  - 9) 5 hot wheels
- Basket for clean-up sessions, books for reading session, math book and flash cards for math session (make sure the marker is inside), castle for castle building session (build two same castles beforehand incase one is broken), pictures for story completing session (child interview)

#### Meet the child and the parent at the parking lot

- The completed questionnaires will be collected before the experiment begins (ask information about mother's age, name of children's daycare or school if attending one)
- Be sure to have the signed informed consent before starting the observation. If mothers forget to bring the questionnaires and consent forms back, make sure to give them two forms to sign before starting the observation. One copy will be kept by us, the other will be kept by mothers.)
- Mothers will be briefly explained about the observational concept
- Mothers will be instructed that this is not an assessment of the children's cognitive and social skills and the interest of the researcher is in their interactions
- Double check the name to whom the cheque can be issued (usually mother's name) and the mailing address.

- Inform mothers that the cheque will be issued to them upon receiving the completed questionnaires if they forget to bring them back.
- Snacks will be prepared for the children and mothers in the lab prior to the experiment (check with parents if the child is allergic to any food before offering any snack.)
- Children will be asked if they need to use the washroom before we begin

At the beginning of each observation, record the date of the observation, the child's name and ID number (Subject number, start from 001). Put questionnaire for one child in one file folder.

***Free Play (15 minutes)***

- The mother and the child will be free to play with a variety of toys present in the room

**Experimenter:** Hello. My name is \_\_\_\_\_. Welcome to the playroom. (To child) \_\_\_\_\_ (child's name), all of these toys are for you to play with! You can play with whatever you want to but please stay in this room. I have to go out now but I'll be back soon with another fun activity for you to do with your mom. Are you ready? Ok, have fun. (Toys are already in room) (Instruction to parents: Please make yourself comfortable. You can watch your child play or play with him/her together. It is totally up to you. I will be back in 15 minutes.)

***Clean Up (3 minutes)***

- The experimenter will re-enter the room and ask the child to pick up the toys and put them into a basket

**Experimenter:** (bring basket(s) in) Did you have fun playing? (pause for response) Now it's time to clean up! I want you to put all of the toys into the basket ok? (then leaves the room, no instruction will be given to the mother)

(enter the room when the clean up is done or when it is the end of the 3<sup>rd</sup> minute. If the clean-up is not done, the experimenter should do the rest clean up and get ready for the next session. Remember, acknowledge the child's work even if it is not completed)

***"Castle Building" (10 minutes)***

- the experimenter will ask the child to build a "castle" same as the model

**Experimenter:** Wow, thank you for cleaning up the toys. Good job. The next thing that you are going to do is to build a castle! (Show the castle). Do you like Lego? (waiting for response from the child). Here is a castle built with Lego. Can you please build a castle just like this one! Ok, go ahead! (instruction to mother: You can help him/her to build it if you want.) (then leave the room with the full basket, make sure all the toys are cleaned up and there is no toy remained in the room)

This session will be finished in 10 minutes or when the castle is built up, whichever comes first.

***Math (10 minutes)***

- the mother and the child will be asked to complete a booklet of simple math problems (e.g., 1+1) together

**Experimenter:** Wow, that castle looks great. Now, I have a math book here. Do you have this book at home? (If the child has it at home, check with the mother and see if she wants to use the book or use flash cards instead) Can you try to do the math please? (If child says no, "why don't you give it a try, it should be fun")(instruction to the mother " You can help if you want"(remove the castle materials and leave the room)

This session will be finished in 10 minutes or when the child and the mother finish the math book and are not doing anything about math, whichever comes first.

**Reading (10 minutes)**

- when they are finished completing the math problems, the mother and child will read a book together

**Experimenter:** Ok, did you have fun? I have some story books here for you and your mom to read. (Explain to mom that the books are of different levels. Ask mom about children's level of reading. "How well can he/she read?") The next thing you can do with your mom is reading together. We have a few books here for you to read. You can pick one to start with. You don't have to finish all of these books. I will be back with you shortly. (Instruction to the mother: "Do you read to him/her at home? (waiting for response from the mother) You can read with him/her together if you like. Just do what you do at home) (collect the math book and leave the room)

This session will be ended in 10 minutes

**Final Free Play (15 minutes)**

- the whole session will be ended with another free play session

**Experimenter:** Wow! You guys did a great job today. Now, you can play with these toys again! (bring basket of toys back into the room and empty them out in the center of the room). Ok, here you go. Have fun! I'll be back soon.

**Cookies and juice box will be provided to the child after the 2<sup>nd</sup> free play.**

*"Did you have fun? Would you like some cookies or something to drink?"*

*The experimenter can use this time to warm up the child, talk to the mother about the child interview and explore the possibility of spending time with the child only for the child interview*

**Child Assessment (Do we need to have a tape recorder for this?)**

- following the whole session, each child will be invited to play with the experimenter and then be asked to complete a story about his/her beliefs about learning

**Experimenter:** \_\_\_\_\_ (child's name), would you like to play with me now for a little while? I have something special for you and me to do.

(If child hesitates)

**Experimenter:** Your mom will wait for you in the next room and she'll come back soon. This is

something just for you and me.

(Mother can stay if they feel not comfortable about the separation.)

**Experimenter:** I have a story to tell you. Here, you can look at these pictures (the pictures are used to help the child understand the story and complete the task)

Tell the story with the pictures.

The interviewer will then ask standard prompting questions:

**Prompt 1:** What do you think happens next in the story? (If child says "I don't know", further prompt: Do you think little bird will learn how to fly eventually?)

**Prompt 2:** It's a neat story, can you tell me more?

Possible Responses:

The child may answer any of the following to your questions. Ask a follow-up question such as the ones provided.

"When the little bird gets bigger, then he/she will be able to fly"

- How does being bigger help the little bird?

"Mommy bird will stay with him and help him until he learns how"

- How does the mommy bird help him?

"The little bird is too little! He is not ready to fly. When the little bird gets stronger then he will be able to fly"

- What's good about being bigger?

"The little bird will keep trying and then he will get it"

- Why will he keep trying? How does this help the little bird?

**Story 2: Nemo learns to swim**

**Nemo has a dream. He wants to join the school swim team. But Nemo has a little fin. He thinks that he will never win. "I will never win. I have a bad fin." Nemo tries... and tries ... and tries.**

**Prompt 1:** What do you think happens next in the story? (If child says "I don't know", further prompt: Do you think Nemo will make the team eventually?)

**Prompt 2:** It's a neat story, can you tell me more?

**When the team part is completed, ask the child to complete the second part of the story. "If Nemo makes the team, do you think Nemo can win the first-place prize"**

**Further prompts and follow up questions are similar to story 1.**

**Experimenter:** Thank you \_\_\_\_\_. You did a great job. Now we can go to get your mommy and go home.

*Experiment ends (the length of the experiment is approximately 90 minutes)*

*When the dyad leaves, tidy up everything, wash the coffee maker, store the equipment, put the questionnaires into a folder and store it in the lab. (Anything else you can think of?)*

## Appendix F

### Observation Protocol (Chinese)

#### “家长成就定向与儿童学习信念的跨文化比较研究”

#### 实验程序

##### 实验材料包括:

除录像中所展示的各种玩具、读书阶段要读的书、数学题书和数学卡片、搭积木时需要的城堡模型(事先已由实验员做好两个一样的城堡模型)、儿童完成故事需要的图片外,还有收拾玩具时候需要的装玩具的大纸箱子。

##### 实验准备:

- 1、打扫房间,地毯,擦干净单向玻璃和监控器,把不需要的桌椅、家具,以及对孩子可能有潜在危险的物品挪出游戏室。
- 2、检查设备工作是否正常,连接是否正确,准备好录制程序。
- 3、将玩具均匀的散放在房间的地上,以便观察孩子能否积极的到房间各个位置去玩。
- 4、准备好写有孩子的姓名、被试号及实验日期的纸版作为录像标签。

##### 实验进程:

##### 一、在接待室会见孩子与家长

- 1、孩子与家长将乘出租车来,实验员随时与家长保持联系以便他们准时到达正确实验地点。
- 2、为家长和孩子提供饮料、茶水、小吃等,并向家长解释观察实验的概念和目的(其中包括此研究不是对孩子智能、社会技能等的评估,而侧重于孩子与家长的互动)。
- 3、回收给家长的问卷(已填写完整的,由家长带来),并签署实验同意书两份(一份备案,一份由家长保留)。
- 4、在实验前问孩子要不要先上厕所。

##### 二、录制实验过程

每一次录制实验前,将孩子的姓名、被试号及实验日期标在纸版上作为录像开头。

##### (一) 自由游戏(15分钟)

孩子与妈妈在放满玩具的观察室自由活动。

[主试指导语:你好,我是……。欢迎……(孩子小名)到阿姨这儿来玩儿。这里这么多玩具你都可以玩儿,但只能在这个屋里,不能出去。阿姨现在有事要出去一下,一会儿再回来给你带其他好玩儿的东西,好吗?那好,你就好好玩儿吧。(转向妈妈:您可以随意一些,就象平时一样,您看着孩子玩儿或是和他一起玩儿都行,您自己看着办,我15分钟后就会回来。)]

##### (二) 收拾(3分钟)

实验者回来并要求孩子把玩具都收拾到箱子里。

[主试指导语：(带着箱子进来)玩儿得高兴吗?……好,现在得收拾一下了。来,把所有这些玩具都装进这些箱子里,好吗?(不对妈妈说指导语,离开。)]

3 分钟后(或不到三分钟,但是已经收拾完后)主试进来,并感谢孩子的劳动,不管其是否完成了收拾玩具的活动。如果任务尚未完成,实验者就完成它。

### (三)“搭城堡”游戏(10分钟)

实验者要求孩子搭一个与提供的模型一样的“城堡”。

[主试指导语:啊,玩具都收拾完了,好样的!那么下面你的伟大任务就是建造一座象这样的城堡(展示带来的城堡模型)。喜欢这样的玩具吗?……那么你要建一个跟它一模一样的城堡,好吗?(或者:不喜欢?可建个城堡也不容易的,来,试试看,能不能建个和它一模一样的。)加油!(转向妈妈:如果你想帮孩子那就帮。)]

实验者抱着装满玩具的箱子离开,确保屋子里没有留下一点刚才的玩具。当孩子搭成积木或是10分钟到了,实验者再进来。(如果妈妈或者孩子问是否颜色都要一样,说明颜色也要一样)

(如果10分钟到了,孩子就差最后一两块就搭好了,可以多给孩子点时间,让她(他)弄完再进去,这样孩子会有一定的成就感。如果差很多,10分钟的时候结束)

### (四)作数学题(10分钟)

要求妈妈和孩子一块儿做一些简单算术题。

[主试指导语:呀,这城堡真好看。阿姨这儿现在有本儿算术书,你家里有没有?(如果孩子说有~~~)要不作几道题试试?(如果孩子拒绝,就说:为什么不试试呢,其实挺有意思的)(转向妈妈:你觉得需要的话,可以帮他)]

实验者离开,带走城堡玩具,10分钟后、或是母子作完了算术书又不再做跟算术有关的事情时再进来。

(如果孩子家里有同样的书,或者以前做过同样的书,孩子或者妈妈可以挑选还做这本书或者做数学卡片。这一个程序的主要目的是看家长和孩子在做数学时候的互动情况。要求家长平时在家怎么做的,在实验室也随意就可以了。如果家长和给孩子另外出题,也不要打断。做足10分钟)

### (五)阅读(10分钟)

算术后,母子共同读一本书。

[主试指导语:怎么样,做算术题挺有意思吧?我这儿还有一些故事书,你可以和妈妈一起读。(向妈妈解释故事书分不同水平,向妈妈询问孩子的阅读水平“他阅读怎么样。”)接下来你要和妈妈一块儿读书,这儿有好几本书,你可以自己先挑一本开始,也不用非要把所有的书读完。一会儿我就回来陪你。(转向妈妈:你在家给他读书吗?……,要是觉得好,你也可以和她一块儿读,你在家怎么做的现在还怎么做。)]

实验者离开,带走算术书。整个过程持续10分钟。

### (六)最后的自由游戏(15分钟)

母子完全自由游戏。

[主试指导语:啊,今天你可真了不起。现在你又可以玩儿这些玩具了。(将装满玩具的箱

## Appendix G

### Mother-Child Free-Play Interaction Coding Scheme

#### **Maternal Behaviors**

Polite request/ Suggestion / Indirect command = mother actively provides general suggestion or guidance while allowing the child to direct/ structure the activity (example – mother might say “how about drawing a picture on the board?”)

Direct command or request without force (neutral) = mother provides clear and direct command without obvious emotional expression or power assertion. Tone is typically plain. Direction is clear but not fully explained (example – “Play with the blocks.”)

Direct command or request with force = mother directs child’s behavior with impatience, criticism or coerciveness. Physical index such as asking the child to go back to playing or ending the activity by grabbing the toy the child is playing with. NOTE that it is very important to listen to the tone of the mother’s vocalization to determine whether the command is given forcefully. The tone and emotion the mother is communicating is more informative than content (example – Pick a toy to play with! What is taking so long?!”)

Explanation / reasoning = mother actively provides detailed interpretation or reasons about an activity with patience (example – child asks how a toy works and mother explains or she teaches the child to play with a specific toy) or mother attempts to set limit by explaining the rules.

Positive reinforcement (reactive) / encouragement = mother actively comments on how well the child is doing to help him/her progress to the next step (example – “What do you think comes next? A smart boy like you can figure this out.) or to encourage the child to continue with an activity (example – “That is such a beautiful picture. Keep working at it)

Criticism/ reprimand and punishment = mother uses negative comments toward the child showing disapproval or that she is upset by the child’s performance (example – “You are so stupid. You won’t finish this.)

Intrusiveness = mother interrupts or takes over the child’s activity, distracts the child from an ongoing activity (examples – grabbing objects the child is using, shoving objects into the child’s space, dragging the child away from toys, acting on child’s toy in a way that disrupts the child’s activity such as if a child is busy playing with a toy and the mother directs his/ her attention to something else)

Prohibition = mother does not allow the child to engage in a particular activity (example – “Don’t touch that doll.”)

Threatening = mother attempts to stop the child from engaging in an activity by intimidating him / her (example – “If you don’t be good you’re not getting dessert later”)

## **Child Behaviors**

Compliance = child responds and follows directions given by mother either immediately or within hearing the direction several seconds previously

Negotiating = child compromising or provides an alternative to the mother's request (example – the child suggests other ways that they can do the task together such as “You build the pet store with the blocks and I'll be the driver who comes to buy them.”).  
Can be double coded with assertiveness.

Defiance = child does not follow direction, is disobedient and refuses to comply with strong emotion such as anger (example – child whines and says “I don't want to do it!”)

Refusal to comply = the child does not follow the direction of mother but does so without strong emotion (example – child may simply say no)

NOTE refusal to comply can be doubled with assertiveness because refusal to comply itself is an indication of assertiveness from the child, therefore, when the child refuses to comply with the mother's request or command by clearly saying no we code this as refusal to comply plus assertiveness. However, when the child demonstrates assertiveness, it may not be refusal to comply. The child's refusal to comply sufficiently but not necessarily associates with assertiveness)

Ignorance = it is clear that the child does hear the mother's request or direction (because the room is quiet or they are sitting close to each other) but the child does not respond

## Appendix H

## Maternal Mind-Mindedness Coding Sceme (English &amp; Chinese)

Variable	Variable Definitions for Maternal Mind-mindedness Coding Scheme
<p data-bbox="302 877 391 940">Initiator 发起人</p> <p data-bbox="315 1325 380 1430">子(C) 母(M)</p>	<p data-bbox="443 411 1320 569">A conversation is defined as one speaker's utterance (or utterances) bounded by the vocal response of the other speaker. Each conversation is coded for the initiator. 一段对话被定义为:一位发言者的言论(或提问)伴随着另一个发言者的口头答复. 每段对话及其对话发起人都需输入编码.</p> <p data-bbox="443 604 1320 940">The initiation of a conversation must be verbally clear, and the speaker of the utterance is coded as the initiator, ex., child holds up puzzle and Mom says 'Do you want to play with that?', Child responds 'Yes please' Even though the child's behaviour initiated a response from the mother, the mother was the first to speak, therefore she is the initiator of the conversation. 一段对话的开端必须要言辞清晰,并对进行对话的发言者以“发起人”的名义进行编码,例如,当孩子拿起拼图时,母亲问 TA:“你想玩这个?”,然后孩子回答:“想(玩)”.在这种情况下,虽然母亲的提问(言论)是被孩子的行为触发的,但母亲作为第一个说话的人,她仍应被记录为这段对话的最初“发起人”.</p> <p data-bbox="443 976 1320 1276">A new conversation is considered initiated following a sufficient lull in the conversation prior (i.e., at least 3 seconds). Extended or rambling talking, in which there is no lull in conversation (i.e., at least 3 seconds) is considered one utterance and coded one time. For example, self speech, puppet play, or mother's explanations to child. 当一段对话拥有足够长的间歇时间时(至少3秒),这段对话将作为一段新的对话进行编辑.但对于在对话中没有停顿(至少3秒)的长时间谈话或喃喃自语则被视为一次发言并被编码一次。例如,自言自语,拇指玩偶或母亲给孩子的讲解。</p> <p data-bbox="443 1312 751 1375">Child initiates conversation 由孩子发起的对话</p> <p data-bbox="443 1411 773 1474">Mother initiates conversation 由母亲发起的对话</p>
<p data-bbox="293 1518 402 1581">Response 反应</p>	<p data-bbox="443 1518 1320 1644">Following Fishburn et al. (20??) mother's responses to their child's utterances were assessed and coded for response, form and content: 根据 Fishburn et al. (20??), 母亲对其孩子发言(或提问)的回复应在仔细评估后从“反应”,“形式”和“内容”的层面进行编码:</p> <p data-bbox="443 1686 610 1709">Acknowledge:</p>

<p><i>ACK</i> 答</p>	<p>承认/作答 Utterances in which the mother acknowledges the child's comment during a conversational turn or responds to a question they have asked, e.g. 'C: I've seen that movie' 'M: Yup, you watched it at Tracy's' or 'C: I'll be the teacher you be the student' 'M: What class are we in?' or 'C: Eleven' 'M: No, it's nine' 母亲对孩子的发言给予回话或回答, 例如, "子:我以前看过这个电影了", "母:对,你在 Tracy 家看过" 或 "子:我来当老师,你来当学生", "母:那我们要上什么课呢?" 或 "子:这是十一", "母:不对,这是九"</p>
<p><i>IGN</i> 无</p>	<p>Ignore: 无视/忽略 Comments which are not a response to the child's statements or questions, although the mother recognized her child was speaking to her, e.g., 'C: look at that toy over there mummy' 'M: pass me that marker', or 'C: Mummy can we play with the puzzle?' 'M: If I put the bottle in he dolls mouth then she is eating' <i>Note.</i> It must be clear that the mother heard the child, and chose not to reply 尽管母亲意识到孩子正在和她说话, 但并没有对孩子的言论或问题给予话题有关的回复, 例如, "子:妈妈你快看那个玩具!", "母:给我递一下那只马克笔" 或 "子:妈妈我们来玩这个拼图", "母:如果我把这个瓶子放在洋娃娃嘴边,那她就是在吃东西啦" 注意: 必须明确的是:母亲听到了孩子的声音, 但选择去无视 TA</p>
<p><i>REJ</i> 拒</p>	<p>Reject: 拒绝/否决 Comments which deny the child's prior suggestion, idea or input, without making a factual correction, e.g. 'C: Let's play with the puppets mummy' 'M: No, we are writing on the chalkboard right now' or 'C: can we play on the chalkboard?' 'M: No, I think we should try playing with the puzzle' 母亲的回复否认了孩子提出的建议和想法,且未给出事实性的纠正, 例如 "子:妈妈我们一起玩这个拼图吧!", "母:不行,我们现在要在黑板上写东西" 或 "子:我们可以在这个黑板上玩吗?", "母:不行,我觉得我们应该玩拼图" <i>Note.</i> Responses in which the mother factually corrects the child are coded as acknowledgements not rejections, e.g. 'M: What is five plus four?' 'C: Eleven' 'M: No, it's nine' or 'C: I've seen that movie, it's called Sky' 'M: no, it's called Sky High' 注意: 如果母亲的回答实际上纠正了孩子的错误言论,则该回复被编码为 "承认/作答" 而不是"拒绝", 例如 "母:五加四等于几?", "子:十一", "母:不对,等于九" 或 "子:我看过那部电影,叫 Sky", "母:不是 Sky, 是 Sky High"</p>

<p>Form 形式</p>	<p>Should a mother initiate a conversation, the first maternal utterance is coded for form and content only (i.e., she is not responding to the child, so response need not be coded). A secondary maternal utterance, which follows a response to the child (i.e., child speaks, mom answers, mom then asks a question or makes her own comment) is coded for form and content only.</p> <p>当母亲是对话的发起人时,则只需针对母亲的言论进行“形式”和“内容”上的编码(母亲未曾回复孩子的言论,因此无需对母亲的“反应”进行编码)。母亲续孩子的发言或提问后进行的二次发言(即孩子说话,母亲回答后又问一个问题或发表自己的评论)仅被编码为“形式”和“内容”。</p>
<p>QST 问</p>	<p>Question: 提问:</p> <p>An utterance in which the child is expected to respond, and through which there is no attempt to scaffold the child's behaviour e.g. 'What toy do you want to play with?' 'How many puppets are there?' 'Have you seen that movie?' 'What is your favourite puppet' 'Do you remember when we went to the zoo and you saw the penguins?' 'What game should we play on the chalkboard?'</p> <p>刺激孩子做出回应的发言,且不企图搭建(影响)孩子的行为,例如“你想玩什么玩具?”“那里有多少人偶啊?”,“你有没有看过那部电影?”,“你最喜欢哪个人偶?”,“你还记得我们去动物园时看到的企鹅吗?”“我们应该在黑板上玩什么?”</p> <p><i>Note.</i> Questions which were descriptions phrased as questions or rhetorical in nature are coded as statements, not questions e.g. 'That's a lion, isn't it?' or 'That characters name is Ron eh?' or 'Polar bears tend to like the cold better than the heat wouldn't you say?'. (反问/设问)</p> <p>注意:如果问题带有描述或措辞性质则被编码为“陈述”,而不是“提问”,例如“那是一头狮子,对不对呀?”或“那个角色的名字是不是叫罗恩·埃赫?”或“北极熊比冷热更喜欢冷酷,对不对?”</p> <p><i>Note.</i> Questions which attempt to scaffold the child's behaviour are coded as suggestions, e.g. 'Do you think we should set the corner pieces of the puzzle first?' or 'Do you think the alligator might like it better in the water?' or 'What happens if you turn the controller left, does the car go that way too?'</p> <p>注意:如果问题企图搭建(影响)孩子的行为或活动,则被编码为“建议”,而不是“提问”,例如“我们是不是应该从拼图的最边缘开始呢?”或“(你觉得)鳄鱼会不会更喜欢待在水里呢?”或“你试试把遥控器向左转,看看小汽车会不会跟着你的手一起左转?”</p>

<p><i>DIR</i> 指</p>	<p>Directive: 指向性</p> <p>Maternal directives which may be stated as clear requests, orders, rules, or suggestions, of which there is no option for the child to refute, e.g. 'Put the toys away', 'We are not writing on the chalkboard until you clean up the other toys', 'Grab that puzzle over there', 'Hand me the tiger puppet', 'Don't do that', 'Wait your turn'</p> <p>母亲的指向性言论被定义为孩子无权反驳的明确要求, 命令, 规则或建议。例如 “把玩具放下”, “等你把玩具收拾干净了才可以玩黑板”, “把那块拼图放这边”, “把老虎布偶给我”, “不可以这样”, “轮到你了再玩”。</p>
<p><i>SUG</i> 建</p>	<p>Suggestion: 建议:</p> <p>An utterance in which the mother attempts to scaffold or influence the current play scenario, or in which she attempts to stimulate play in an indirect manner, e.g. 'Maybe we should put the other toys away before we draw on the chalkboard' or 'I think the doll is probably hungry, do you think she would want a bottle?', 'try sounding the word out when you spell it', 'how about we do the corner pieces of the puzzle first', 'should we try putting the lion in the savannah habitat?'</p> <p>母亲试图搭建或影响当前游戏场景的言论, 或者试图以间接方式刺激游戏进行的言论, 例如 “要不我们先把玩具收拾起来再来玩黑板?” 或 “洋娃娃可能饿了哦, 她会不会想要吃饭了?”, “拼写时把这个词说出来试试”, “我们从最边缘开始拼拼图怎么样?”, “要不然我们把狮子放到热草原栖息地看看?”</p>
<p><i>STA</i></p>	<p>Statement: 陈述:</p> <p>General remarks, narrative related to instructions for play, what is happening or will happen, or responses which make an expansion on the child's utterances, e.g. 'We'll put the toys in here, and then grab this one', 'you're funny', 'that's silly', 'you're right', 'If we put the lion in the water he probably won't be very happy', 'If the dolly doesn't get burped she might have an upset stomach', 'I liked that movie too'</p> <p>一般性评语, 对游戏规则的解说, 正在或将要发生的事情有关的叙述, 或使孩子的话语进行扩展的回答, 例如 “我们先把玩具放到这里, 然后拿着一个”, “你真是个宝藏男孩(女孩)/你真有意思”, “这也太奇怪了/这也太蠢了”, “你说的对”, “如果我们把狮子放在水里的话它可能会不高兴”, “如果洋娃娃没办法打出这个嗝, 她可能会肚子痛”, “我也喜欢那部电影”</p> <p>Minimal content:</p>

MIN	<p>微内容 Comments of little content, e.g., 'Oh', 'Mhmm', 'Uh-oh' or self speech 只具备少量内容的言论,例如, "哦", "嗯", "哎呀" 或自言自语</p>
<p>Content 内容</p> <p>Mental 心理相关</p>	<p>Comments relating to metacognitive capacity including thoughts, beliefs, desires, emotion and knowledge in which a clear metacognitive term was used (e.g. think, like, want, know, clever, sneaky, remember) were divided into four exclusive categories of mental-state talk: 与元认知能力有关的发言将分为四个心理状态的互斥类别, 其中包括思想, 信念, 欲望, 情感和包含明确的元认知术语的有关知识 (例如, 想法, 喜好, 想要, 知道, 聪明, 鬼鬼祟祟, 记忆):</p> <p><i>C</i> 子 Child: 孩子 Comments relating to the mental state of the child, e.g. 'What do you <u>want</u> to do?' 'What do you <u>think</u> we should do next?' 'Where do you <u>want</u> to put the doll?', 'Do you <u>know</u> what that is?' 与孩子的心理状态有关的言论,例如, "你想要做些什么呢?" "我们接下来要怎么做?" "你想要把这个娃娃放在哪里?" "你知道这是什么吗?"</p> <p><i>M</i> 母 Mother: 母亲 Comments relating to the mother's own mental state, e.g. 'I <u>want</u> to play with the doll' 'I don't <u>remember</u> your teacher's name', 'I <u>think</u> we should put the toys away' 与母亲自己的心理状态有关的言论,例如, "我想要玩这个娃娃" "我不记得你老师的名字了" "我觉得我们可以把玩具收起来了"</p> <p><i>B</i> 双 Both: 双方 Comments relating to the mental state of both the mother and child, e.g. 'We mustn't <u>forget</u> to put the toys away', 'We <u>love</u> to play puzzles, right?' 与母子(女)双方的心理状态有关的言论,例如, "我们不能忘了把玩具收起来", "我们最喜欢玩拼图了,对不对呀?"</p> <p><i>O</i> 另 Other: 其他 Comments relating to the mental state of someone other than the child or mother, e.g. 'Your sister really <u>loves</u> to play with dolls too' 'Daddy doesn't <u>like</u> to read either does he?', 'Your little brother <u>knows</u> how to spell his name too'</p>

<p>Non-mental 非心理相关</p>	<p>除母子(女)外他人的心理状态的有关言论,例如,“姐姐也喜欢玩这个娃娃”,“爸爸也不喜欢读书,是不是呀?”,“弟弟也知道怎么拼自己的名字了”</p> <p>All remaining comments which did not relate to mental state activity or contain mental state terms including descriptions (e.g. ‘the doll’s hair is very fluffy’), bids for the child’s attention (e.g. ‘watch mommy do it, are you paying attention?’), affect expressions and feedback on the child’s ongoing activity (e.g. ‘Good Job!’ ‘Well done’) and comments which relate to the child’s everyday life or past experience (e.g. ‘This looks like the doll you have at home’) were coded as non-mental state talk.</p> <p>其余所有无关心理活动的评论或与心理状态术语的注释,其中包括描述(例如“洋娃娃的头发好蓬松呀”),引起孩子的注意(例如“来看看妈妈是怎么做的,你在看吗?”),对孩子正在做的活动进行的感想和反馈(例如,“真棒!”,“很好”)以及与孩子的日常生活或过去的经历有关的言论(例如,“这个洋娃娃和家里的那个一模一样”),这些将作为非心理相关言论进行编码。</p>
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## Appendix I

### Participant Feedback Sheet

#### Participant Feedback Sheet

Thank you very much for participating in our research. We hope you have found the participation enjoyable. This feedback sheet has been designed to provide you with further information of the research project.

For the past thirty years, many cross-cultural studies have been conducted to examine the academic achievement in Chinese and Western children and adolescents. It has been found Chinese children outperform North-American children in certain academic subjects, most notably mathematics and science. Because the ethnic differences are evident as early as first grade, it has been argued that cultural and family factors such as parental involvement may contribute significantly to the ethnic differences.

In order to understand the cultural and family factors, our research will investigate (1) the cross-cultural similarities and differences in parental achievement-related beliefs and practices; (2) the cross-cultural similarities and differences in children's beliefs about learning; and (3) how parental achievement-related beliefs and practices are linked to children's academic performance in both Canada and China.

The research is funded by Social Sciences and Humanities Research Council of Canada. To make the cross-cultural comparisons, children at 4-6 years of age and their mothers in Canada and China are invited to participate in the study. Same research materials and procedures are used for both Canada and China. The research will contribute to the further understanding of the roles that parents play in children's academic achievement in both cultures.

If you would like to know more about the role that parents play in children's academic achievement, the following is a useful list of articles.

Campbell, J. R., & Mandel, F. (1990). Connecting math achievement to parental influences. *Contemporary Educational Psychology, 15*, 64-74.

Dornbusch, S., Ritter, P., Leiderman, R., Roberts, D., & Fraleigh, M. (1987). The relation of parenting style to adolescent school performance. *Child Development, 58*, 1244-1257.

Kinlaw, C.R., Kurtz-Costes, B. & Goldman-Fraser, J. (2001). Mothers' achievement beliefs and behaviors and their children's school readiness: A cultural comparison. *Journal of Applied Developmental Psychology, 22*, 493-506.

Li, J. (2004). Learning as a task or a virtue: U.S. and Chinese preschoolers explain learning. *Developmental Psychology, 40*, 595-605.

Thank you very much again for your participation. Best wishes to you and your child.