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**Relations between maternal reflective  
functioning and psychological control on  
child's attachment in Poland, Turkey, and  
the Netherlands**

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## **Summary**

The constructs of parental psychological control (PPC) and parental reflective functioning (PRF) have previously been studied in accordance to their links with child attachment; however their relatedness has rarely been explored, particularly in a cross-cultural context. The present study investigates the relations between PRF, PPC, and attachment insecurity in a sample of mothers with children aged 8 through 12 years old from Poland, Turkey, and the Netherlands ( $N = 758$ ). Three scales assessed these constructs: Psychological Control Scale (PCS; Barber, 1996), Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017), and Experience in Close Relationships Scale – Revised for Child (ECR-RC; Brenning et al., 2011). Measurement invariance and factor analyses were used to analyze the structure and functioning of the scales. Structural equation modeling was used to test moderation and mediation hypotheses about PRF, PPC, and attachment insecurity in the total sample and across cultures. Results revealed differences in PRF across cultures. Links with attachment insecurity are moderated by culture in two paths related to attachment avoidance, firstly, PPC and secondly, pre-mentalizing (PRF subscale). Results highlight significant associations between PPC and attachment insecurity, as well as between PRF and attachment insecurity. These results partially support the tested hypotheses and are in tandem with attachment research. Furthermore, results also revealed the mediating role of PRF in the relation with PPC and attachment insecurity. The results emphasize the need for future research that explores the mediating role of PRF between PPC and attachment. Practical implications include the importance of incorporating PRF into future attachment-based interventions for parents.

## **Key words**

psychological control, reflective functioning, attachment, anxiety, avoidance, cross-cultural

## **The title of the thesis in Polish**

Relacje między funkcjonowaniem refleksyjnym i kontrolą psychologiczną matek i przywiązaniem dziecka w Polsce, Turcji i Niderlandach

## **Streszczenie**

Koncepcje rodzicielskiej kontroli psychologicznej (PPC) i funkcji refleksyjnej (PRF) były wcześniej badane w odniesieniu do przywiązania (unikanie i niepokój przywiązaniowy dzieci), jednak ich powiązanie uwzględniano rzadko szczególnie w kontekście analiz międzykulturowych. W niniejszej pracy zbadano relacje między PRF, PPC i przywiązaniem w grupie matek z dziećmi w wieku od 8 do 12 lat z Polski, Turcji i Niderlandów (N = 758). Do pomiaru analizowanych konstruktów użyto trzech skali: Skala Kontroli Psychologicznej (Luyten et al., 2017), Kwestionariusz Rodzicielskiej Funkcji Refleksyjnej (Luyten et al., 2017) oraz Skala Doświadczeń w Bliskich Związkach DBZ-R dla dzieci (Brenning et al., 2011). Struktura i funkcjonowanie skal zostało poddane analizie przy użyciu analizy równoważności pomiarowej i analizy czynnikowej. Do przetestowania hipotez dotyczących moderacji i mediacji w zakresie PRF, PPC i przywiązania w całej próbie i pomiędzy kulturami wykorzystano modelowanie równań strukturalnych. Wyniki wykazały różnice w poziomie PRF pomiędzy kulturami. Ponadto PPC a także PRF były moderowane przez kulturę w przypadku dwóch ścieżek z przywiązaniem (unikanie), między PPC, także pre-mentalizacją (subskala PRF). Wyniki wskazują również na istotne związki między PPC a przywiązaniem oraz między PRF a przywiązaniem. Wyniki te są częściowo zgodne z proponowanymi hipotezami oraz są zgodne z badaniami z zakresu psychologii rozwojowej. Ponadto, wyniki wykazały też, że PRF pełni rolę mediatora między PPC a przywiązaniem i wskazują na potrzebę przeprowadzenia w przyszłości badań, które zgłębią rolę PRF jako mediatora w związku pomiędzy przywiązaniem i kontroli psychologicznej. Praktyczne implikacje wskazują na konieczność włączenia PRF do przyszłych interwencji opartych na przywiązaniu w ramach programów skierowanych do rodziców.

## **Słowa kluczowe**

kontrola psychologiczna, funkcja refleksyjna, przywiązanie, niepokój, unikanie,  
międzykulturowe

## **The title of the thesis in English**

Relations between maternal reflective functioning and psychological control on child's attachment security in Poland, Turkey, and the Netherlands

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## Theoretical Part

### 1.1 Introduction

A mother's bond with her child is an essential part of developing a secure and stable relationship with her offspring. An infant's security is determined by the caregiver's ability to provide an environment that enables developing this attachment relationship, a relationship that is necessary for survival in infancy (Fonagy et. al, 1991; Bowlby, 1973). The mother-child relationship may take many forms, nevertheless relies on forming an internal working model, or an expectation about the self and others, based on the relationship with the caregiver and the social environment (Bowlby, 1973). This relationship could be influenced by a caregiver's sensitivity, as well as wider socio-cultural expectations or beliefs about how this specific relationship should function.

Within the internal working model of a parent-child relationship, mothers use reflective functioning (RF), which is a competence, or capacity, to understand one's own or another's behavior (Fonagy, 1991). The concept of RF has been linked to parenting sensitivity and has established associations with infant's attachment security when RF is present (Kelly et al., 2005; Stacks et al., 2014). Although parents may reflect on their children's mental states through parental reflective functioning (PRF), they may also use parental psychological control (PPC). PPC is indicative of insensitive parenting that is intrusive and manipulative of children's thoughts, feelings, and attachment to parents (Barber, 1996). Both constructs of PRF and PPC rely on the use of cognition, however the mentalizing used in reflective functioning is the basis for psychological control. One must first understand the other person's mental state, in order to later be able to manipulate the thoughts or feelings associated with it.

An essential part to understanding the concepts of PRF and PPC is their relationship to children's developmental outcomes, particularly attachment security (Fonagy et al., 1998;

Barber, 1996). Although both concepts may seem closely related, they have rarely been studied together, especially from the cross-cultural perspective. Moreover, PPC has been proposed to be a universally negative parenting tactic triggering developmentally detrimental outcomes (Barber, 1996; Soenens & Vansteenkiste, 2010). Meanwhile, PRF, or parental mentalizing, has been reviewed with initial findings supporting cultural variations in mentalizing (Aival-Naveh et al., 2019).

However, the universal negativity of PPC and the generalizability of parental mentalizing may be questioned in cross-cultural study. Past results from cross-cultural research have been contradicting and typically only study two cultures. Further examining these relations may bring clarity to future research. In particular, investigating the roles of PRF and PPC in middle childhood may be of great relevance given the changing parent-child relationship, especially when children go to school and socialize more outside of the household.

## **1.2 Parental reflective functioning**

According to Fonagy and his colleagues (1991), reflective functioning (RF) is a capacity that is used to understand and reflect about one's own or another's behavior in terms of underlying mental states. In the context of parent-child relations, there is parental RF (PRF) in which a parent can have the capacity to view their child as a psychological entity, or a psychological agent, and attune to the child's mental states (Fonagy, 1991; Sharp & Fonagy, 2008).

In Adult-Attachment Interview transcripts the ratings of Reflective-Self Function correlated significantly with infant security classifications that are based on Strange Situation assessments (Fonagy et al., 1991). Furthermore, in the London Parent-Child project there was a strong correlation between the capacity to reflect upon one's history and child's attachment



security (Fonagy et al., 1991). Although Fonagy and colleagues (1991) conducted their work on a U.K. sample of infants, the significant findings between PRF and secure infant attachment highlight a crucial role in the intergenerational transmission of attachment (Slade et al., 2005).

### **1.2.1 Reflective functioning and other forms of mentalizing**

Though the findings between PRF and attachment in infancy are clear, RF is not conceptually straightforward. RF has also been called mentalizing and has a basis in theory of mind (TOM) (Slade, 2005). Meins (1997) also introduced maternal mind-mindedness (MMM) to understand the mothers' role in her child's TOM development as well as a means of explaining attachment security across generations. When speaking about the mother-child relationship, it was found that PRF (examined through mind-related comments of MMM during mother-infant play) was a predictor of attachment security at 12 months (Meins et al., 2001). Despite the fact that MMM, PRF, and parental mentalization are separate, the concepts overlap with an underlying message that parental mentalizing contributes to the development of child's attachment security.

Furthermore, RF can be differentiated from empathy and TOM. While RF is an emotional process that requires the capacity to hold, regulate, and experience emotion; it is different than empathy which does not imply regulation of these emotions (Slade, 2005). In PRF it is implied that the caregiver helps the child learn how to regulate emotions in order to establish a secure relationship (Sharp, & Fonagy, 2008). Thus, when parents use empathy it may counterbalance negative affect toward their child, establishing security in the parent-child relationship. On the contrary, when a parent is under increased negative emotions it may be difficult to use empathy, resulting in low empathy and the potential use of psychological control (Walling, Mills, & Freeman, 2007). Additionally, empathy has both cognitive and affective components in response

to seeing an individual in distress and through experiencing similar feelings as the distressed individual, but at the same time differentiates between the self and the other individual (Batson et al., 1987; Decety & Lamm, 2006; Kern et al., 2001).

Unlike the emotional and cognitive nature of RF and empathy, TOM implies a larger cognitive role as it affords an individual the ability to understand and predict others' behavior (Premack & Woodruff, 1978). TOM has also been researched more thoroughly using Baron-Cohen, Leslie, and Frith's (1985) classic Sally-Anne task based on children's beliefs about where a doll is located. Although mentalizing constructs may be distinguished from one another, all these constructs might actually be part of a similar socio-cognitive system (Sharp & Fonagy, 2008). Furthermore, mentalizing constructs have also been called "conceptual cousins" and mentalizing could be an umbrella term for these variations (Choi-Kain & Gunderson, 2008; Luyten et al., 2017). Cortina and Liotti (2010) have also directed the literature by referring to mentalization phenomena such as TOM, mentalization, and metacognitive monitoring as directing to similar phenomena, but with a different research basis.

### **1.2.2 Reflective functioning in parents of older children**

Moreover, there are a multitude of studies on PRF and attachment links during infancy, but the exploration of PRF in older children has been limited. While reflective functioning is understudied in adolescents, it may be of great importance to follow the trajectory through this developmental stage as well (Borelli et al., 2017). Notably, Borelli et al. (2016) undertook one of few studies about PRF in school age children finding a link between RF and child attachment security, highlighting that older children may have many experiences outside of the home that still involve PRF. An example is noted by Borelli and colleagues (2016) when a 10 year old boy is being dropped off at school by his mother and instead of responding with his usual "I love

you” the boy leaves quickly and returns to his friends. In this situation, a mother could use PRF to understand that her child is rushing to see friends and not that he is intentionally trying to reject the mother. PRF would allow the mother to understand her son’s behaviors, yet also recognize her own emotions. After school the mother could use her awareness of the situation to show interest in her son’s needs. Rather than rejecting or withdrawing from her son for not mutually responding with “I love you”, the mother can understand that her son wants to feel connected with friends his age.

Therefore PRF can be used in daily interactions between a caregiver and a child, especially when communicating or playing with a child. However, another study outside the scope of attachment revealed that lower PRF in mothers was associated with more instances of aggressive and rule-breaking behaviors in school-age boys (Dejko–Wańczyk, Janusz, & Józefik, 2020). While this study is unrelated to attachment relationships, it underlines the sensitive nature of PRF and the potential consequences of lower PRF. Additionally, a child who is approaching school-age may have an increased need for autonomy and this could raise possible difficulties in PRF (Borelli, St John, Cho, & Suchman, 2016).

### **1.3 Parental psychological control**

Parental psychological control (PPC), similar to PRF, also relies greatly on the use of cognition, however psychological control is a parenting strategy that aims to manipulate, invalidate, or inhibit a child’s thoughts, feelings, and attachment to parents (Barber, 1996). Schaefer’s (1959, 1965) works were of the first to note psychological control in the context of parental behaviors. Analysis of child and parent reports indicated dimensions of love versus hostility and autonomy versus control (Schaefer, 1959), as well factors such as acceptance versus rejection, firm control versus lax control, and psychological autonomy versus psychological

control (Schaefer, 1965). Notably, PPC often uses intrusive and manipulative parenting strategies, such as guilt or love withdrawal (Barber, 1996). In the study of parental control there is also a key differentiation between psychological control and behavioral control, the latter referring to parental behaviors that attempt to control child's behaviors (Barber, 1996). Thus, behavioral control is a more overt means of control that uses directives such as rules and limit setting, whereas psychological control utilizes other techniques, such as interrupting or blaming.

Both PPC and PRF can be applied to Borelli and colleagues' (2016) example of the mother and son during school drop-off. In this example when the mother leaves her son at school he does not respond to her. This situation can be further extended to reveal a mother's PPC and specifically love withdrawal. When picking her son up from school the mother could be hostile or silent. This reaction would be the mother's way of showing her son that she is upset at her son for not responding to her. From another perspective it could also be that the mother is using PRF to control her child psychologically; however given the effect of PRF in early trauma or abuse, this may rather not be the case (Borelli et al., 2015).

In another example of PPC, Walling et al.'s (2007) study found the cognitions of sensitivity to hurt and parents' disapproval of negative emotions of the child were most frequently associated with parental self reports of psychological control. The parents' cognitions of sensitivity to hurt were assessed through examples of situations that are hurtful and rejecting, thus devaluing the parent as an individual, whereas the parents' disapproval of negative emotions were assessed by measuring parental attitudes and beliefs towards negative emotions in themselves and their children. These factors are both noted to emphasize a parent's own personal concerns, especially feeling rejected or underappreciated in their parenting role.

Furthermore, according to Barber's (1996) measure of PPC, 6 factors of psychological control were relevant during observations including: constraining verbal expressions, invalidating feelings, personal attack on child, guilt induction, love withdrawal, and lastly erratic emotional behavior. Thus, it is noted that the parenting behaviors involved in PPC explore parenting from a negative position and it is a perspective that is held throughout PPC research. The negativity that is often associated with PPC may also be an important viewpoint to consider when distinguishing cross-cultural similarities and differences in PPC.

Additionally, PPC is an important concept to account for in older children as they transition into a more autonomous lifestyle. During the transition from home to school there are changes, such as cognitive, socioemotional, physical, and behavioral, that a child must encounter in order to develop independence from parents and their own sense of self (Barber 1996).

#### **1.4 Parental psychological control and parental reflective functioning as precursors of child attachment security**

Strong correlations have been found between PPC and attachment (Barber, 1996) meanwhile there are also strong correlations between PRF and attachment security (Fonagy et al., 1991). While both PPC and PRF show correlations with attachment, there is no clear evidence linking the concepts of PPC and PRF. However, the concepts of PPC and PRF should be distinguished as they likely lead to opposite outcomes. Unlike PFC, which may help teach the child how to regulate emotions (Sharp & Fonagy, 2008; Slade, 2005), PPC is linked with decline in self-regulation (Rogers et al., 2019). The distinct relationships of PRF and PPC toward attachment suggest that these concepts may be interconnected; however the paths have not been extensively explored together. Past theoretical knowledge also implies that one must first

understand a mental state in order to be able to manipulate it, thus the implications for the PRF, PPC, and attachment connection may be valuable.

#### **1.4.1 Reflective functioning as a mediator and resiliency factor in adversity**

In addition to the relation with attachment and PRF, there is also an emphasis on studying the positive impact of PRF in psychological interventions as well as the role of PRF under traumatic or adverse conditions. In one mentalization based intervention, called Mothering from the Inside Out (MIO), Suchman and colleagues (2016) focused on mentalization-based therapy for parents with mental illnesses. This is a key group for a mentalization intervention as emotion regulation difficulties due to mental illness can be addressed; otherwise the parent's emotion regulation difficulties could lead to parenting insensitivities. The implications of such an intervention are two-fold as it targets parents' difficulties, but also focuses on the child's development of skills such as holding, regulating, and experiencing emotions through PRF (Slade, 2005).

Other studies highlighting psychopathology and RF include Gershy and Gray's (2018) research on families with ADHD. The researchers found that parental mentalization acts as a buffer for developing a hostile parent-child relationship even if there are emotion regulation difficulties in parents (Gershy & Gray, 2018). A similar mediation effect of PRF is also present in the contexts of abuse, maltreatment, and neglect throughout other preliminary research (Tessier et al., 2016; Borelli et al., 2015).

While PRF, in the form of a psychological intervention, can aid a parent in establishing a grasp on understanding emotions, the concept of psychological control also has links to difficulties with regulating emotions (Cui et al., 2014). In particular, psychological control was negatively associated with adolescent adjustment. Therefore, adolescents who perceived higher

psychological control in their parents were more likely to develop emotional and behavioral disorders (Cui et al., 2014; León-del-Barco et al., 2019). In another notable study Taubner et al. (2016) found RF, but not attachment, to be a mediator between early maltreatment and aggression in adolescence. These findings, although limited, are groundwork in understanding the “protective” nature of PRF.

The protectiveness of PRF has also been researched in Borelli and colleagues’ (2017) exploration of relationships between RF, physiological reactivity, and overcontrol. For example, it was found that PRF aids parents in understanding their child’s needs rather than reacting emotionally during parent-child interactions, therefore encouraging sensitive parenting (Borelli, et al., 2017). Though overcontrol is beyond the scope of the PPC that is studied in the current paper, there are preliminary implications from their research. In particular, the value of incorporating PRF into intervention programs is underlined, which may pave the way for further novelties.

### **1.5 Parenting from a cross-cultural perspective**

Child-rearing involves multiple facets, and from a cross-cultural perspective there are various social norms, socialization goals, practices, and differences that could be emphasized. A common approach to cross-cultural psychology, that has been popularized in the media and can be applied to parenting, is individualism-collectivism. The distinction of individualistic and collectivistic societies has led researchers to approach topics, such as mentalization or psychological control, from universalist and relativist approaches (Aival-Naveh et al., 2019; Deci & Ryan, 2000). In the universalist approach, which can also be labeled as the etic approach, cultures are viewed to have general and universal commonalities. On the opposite end of this

continuum, the relativist approach, also considered the emic approach, is dependent and takes into account each unique culture.

Additionally, cultural norms can play a large role in parenting practices. Such cultural distinctions in the family have been characterized through Kağıtçıbaşı's (2002) models of family change with interdependence and independence. On one hand, interdependence is common in traditional and rural societies where the family places the child in a functional role. This means that the child helps with the daily work and continues to be there for family members in old age, leaving little room for own personal autonomy aside from the family life. In the interdependent model, socialization strategies are heavily dependent and reliant on the family and their joint harmony. On the other hand, independence, what could be more commonly seen in Western middle class societies, focuses on developing an independent and self-sufficient autonomous self. These models distinguish independent and interdependent selves and emphasize the different needs for autonomy that are in individualistic and collectivistic cultures and can be utilized in the socialization context of parenting.

### **1.5.1 Cross-cultural perspectives of mentalizing**

The mentalizing capacities of individuals can vary based on a wide array of factors; for one, this could be the presence of cross-cultural differences. A distinct approach to mentalizing does not mean that one way is better or worse, rather from the cultural perspective there could be a different emphasis of norms for the individual. For example, Hong Kong parents offered fewer descriptions of their children's attributes than U.K. parents, and the variation may be present because the Asian culture has strict social norms that children must conform to and "reading" another's mind is not demanded in these norms (Hughes et al., 2018). This difference can also be accounted for by Friedman et al.'s (2010) cultural fit hypothesis because a misfit between



individual differences should be associated with relationship problems if the pattern that is encouraged does not align with cultural norms. Thus, if a culture did not encourage PRF, there may be more attachment insecurity where this is not the norm.

However, the capacity of PRF has rarely been researched in a cross-cultural comparison. Rather there are various studies outlining mixed findings for several similar, yet slightly different, domains of mentalizing including TOM, empathy, perspective taking, and mindfulness. Of importance is Aival-Naveh, Rothschild-Yakar, and Kurman's (2019) systematic review of mentalizing from a cross-cultural perspective. This analysis went beyond the scope of PRF; though notable cultural distinctions about other overlapping forms of mentalizing are described, highlighting a potential collectivism-individualism difference. Researchers undertook the cross-cultural review of mentalizing through the universalist (an etic approach, or that all individuals in different cultures will have a similar capacity to mentalize) and relativist (an emic approach or culture dependent) perspectives (Aival-Naveh, Rothschild-Yakar, & Kurman, 2019). However, distinguishing mentalizing through this binary assumption may be too dichotomous, and rather an intermediate perspective is recommended. Placing mentalizing capacities on a continuum, ranging from being culturally universal to being culturally dependent, would assume that basic psychological processes are similar across cultures, yet that culture can heavily influence their development and presentation (Aival-Naveh, Rothschild-Yakar, & Kurman, 2019).

Moreover, an example of culture influencing development and presentation of basic psychological processes involving mentalizing is in a study on Iranian and Australian children and TOM mastery (Shahaeian, Peterson, Slaughter, & Wellman, 2011). This study revealed that there was a lack of cross-cultural differences in TOM mastery (both groups developing just as rapidly in TOM tasks), but the differences were related with the developmental route that was

taken. Additionally, the Iranian children were more consistent with the collectivistic culture's emphasis on filial respect, dispute avoidance, and acquiring knowledge, which are characteristics that parents in Iran may be emphasizing more (such as family harmony) rather than children having their own independent opinions (Shahaeian, Peterson, Slaughter, & Wellman, 2011).

While there are select studies that reveal differences in how mentalizing capacities are acquired, studies analyzing cross-cultural differences in mentalizing capacities are still incomplete. In one study Hughes and colleagues (2018) compared a sample of children from Hong Kong and from the U.K., in which the children from the U.K. showed greater TOM performance and U.K. parents showed higher levels of mind-mindedness than from Hong Kong. The differences in parental mind-mindedness in Hughes and colleagues (2018) study was not accounted for by differing levels of education, thus the differences were explained by the distinct socialization norms in the cultures, such as Asian cultures expecting children to conform to the norm regardless of their own views (Hughes et al., 2018). However there were only two cultures in this study, therefore caution must be taken with the generalizability of results.

Recalling Aival-Naveh, Rothschild-Yakar, and Kurman's (2019) systematic review of mentalizing, the authors indicate findings supportive of the intermediate perspective, thus viewing mentalizing as a universal across cultures; however there could be variations present in different cultures. Additionally, after their review of studies it was revealed that in individualistic cultures there may be higher mentalizing capacities, but the focus of the reflections could be what distinguishes the mentalizing. Therefore, collectivistic cultures may have less self-mentalizing or attribute to external factors, as opposed to the individualistic cultures where mentalizing may be more valued (Aival-Naveh et al., 2019). Generally speaking, the

discrepancies and inconsistencies in cross-cultural mentalizing studies call for further research into this topic.

### **1.5.2 Cross-cultural perspectives of psychological control**

In cross-cultural studies, PPC has also been explored from relativist (culture dependent) and universalist (underlining self-determination theory and the universal need for autonomy) perspectives (Deci & Ryan, 2000; Soenens & Vansteenkiste, 2010; Gargurevich & Soenens, 2016). However, the results in a study with Hong Kong Chinese and European Americans were in line with collectivistic cultural norms revealing a negative association between PPC and child adjustment more strongly in European American families than Hong Kong Chinese families (Fung & Lau, 2012). This opposing result could underscore that parents who are more controlling in the Chinese culture are working toward collectivistic goals (such as harmony and loyalty to family) thus it may be less harmful to children to experience PPC (Fung & Lau, 2012). In Scharf and Goldner's (2018) review about PPC, the authors found that PPC was associated with negative outcomes across cultural contexts; however the PPC in collectivistic cultures resulted in decreased maladjustment as opposed to individualistic cultures. Thus, there may be a culturally-dependent variation on the expression of psychological control.

More recently PPC has also been theoretically driven by the self-determination theory (Soenens & Vansteenkiste, 2010). The basis of self-determination theory is that autonomy, competence, and relatedness are universal, innate needs for humans (Deci & Ryan, 2000). The bases of self-determination theory lead to the question of cross-cultural differences that are being examined in the current paper. Is PPC "universally negative" for a child's development as proposed by previous research (Barber, 1996; Soenens & Vansteenkiste, 2010) or could there be cross-cultural differences present? Meanwhile, it is also important to consider a frequent

limitation in cross-cultural research where researchers seek to find differences in functioning, but perhaps these differences are not as large as presumed (Poortinga, 2015). Additionally, while differences may be labeled as universal, this notion is also limited and the universality is highly questionable since studies include just a few cultures.

### **1.6 Cultural contexts of parenting in Turkey, Poland, and the Netherlands**

Poland, Turkey, and the Netherlands differ in their cultural orientations based on Hofstede's (2011) dimensions of cultures, tightness scores (Gelfand et al., 2011), and relational mobility scores (Thomson, et al., 2018). Additionally there have been many societal and socialization changes that could have an impact on cultural norms and parenting practices in these countries.

According to Hofstede's (2011) dimensions of culture, Poland has an individualism score of 60, found between the Netherlands (score of 80) and Turkey (score of 37). This reveals that the Netherlands is the most individualistic country in this group, thus the people are likely to value their own expressions of self. This is opposed to countries low on individualism, such as Turkey, in which people are likely maintaining family harmony and integrating with the in-group in order to sustain the collectivistic society's expectations.

From the perspective of tight (strong norms and low tolerance of deviating behavior) and loose (weak social norms and high tolerance of deviant behavior) classification of cultures, the Netherlands has the lowest tightness score of 3.3, followed by Poland with a score of 6, and lastly Turkey with a tightness score of 9.2 (Gelfand et al., 2011). This implies that those cultures with higher tightness scores, such as Turkey, more likely enforce a higher frequency of social regulation, needing structure, law, order, and strong rules to guide people's behavior (Gelfand et al., 2011). Turkey has the highest tightness score in this perspective, as opposed to the

Netherlands with the lowest tightness score, signifying that the Dutch culture is looser and likely has rather low conformity and more lenient child-rearing practices (Gelfand et al., 2011).

Poland's tightness score is moderate and this may indicate that there are many social norms that must be followed, but it is perhaps not as rigid as in other cultures.

Relational mobility scores also vary among the countries with higher scores indicating individual choice and autonomy with relationships as well as lower relational mobility scores signifying more stable relationships that place less value in retaining those relationships (Thomson, et al., 2018). The Netherlands is highest in relational mobility (score of 4.448), followed by Poland (score of 4.415), and the lowest score in this group is Turkey's score of 4.122 (Thomson, et al., 2018). These distinctions, especially between the scores of the Netherlands and Turkey, reveal that Dutch individuals may have more personal say in the relationships that they are in, whereas in Turkey it may be expected that certain relationships do not change.

Additionally in Hofstede's (2011) dimensions of culture, the power distance in the Netherlands is the lowest (score of 38), whereas Poland (score of 68) and Turkey (score of 66) have a similar, higher power distance. A lower power distance, such as in the Netherlands, would mean that the structure of the society is distributed more evenly, for instance that parents treat their children as equals and education is student-centered (Hofstede, 2011). Poland has the highest power distance at 68, even higher than the typically more hierarchical structure of Turkey, thus from Hofstede's (2011) interpretation the society would be more structured and the extent to which power is distributed unevenly would be greater, such as with parents teaching obedience and institutions functioning with a strict hierarchy. This large power distance in Poland may be at the foot of change, and as a nation, Poland could be evolving in this sphere.

Interestingly, Poland scores lowest on the indulgence dimension (score of 29), implying that the Polish culture may have a tendency to control desires and impulses, with cynicism and pessimism being more typical and not indulging in their own desires (Hofstede, 2011). On the contrary the Netherlands has the highest indulgence (score of 68), and Turkey is found in between (score of 49). This may also show that the Dutch culture values spending their free time in ways which make them happy and optimistic (Hofstede, 2011). Poland's low indulgence score may be of similar nature to the high power distance, with the society changing in spite of this cultural contextualization.

### **1.6.1 Parenting in Poland**

Poland has a long history of war, communism, and fast 21<sup>st</sup> century economic development. Thus although Poland had long been characterized as a collectivistic society, it is now changing towards an individualistic one through sociopolitical transformations (Delvecchio et al., 2020). Poland also has roots in the traditional Catholic religion; however this connection is also altering with an emphasis on democratization and equal parenting roles in the Polish family (Wejnert & Djumabaeva, 2005). Since communist times fathers' have increased involvement in child-rearing and domestic duties in the Polish household. Although the gap between maternal and paternal parenting responsibilities is closing, Polish adolescents continue to report stronger attachment to mothers and are able to trust and communicate with mothers at a more comfortable level than with fathers (Delvecchio et al., 2020). Additionally, Polish social campaigns in 2010, before a law banned corporal punishment in the country, worked toward spreading information about the unfavorable consequences to such punishment, consequently promoting a more humane parent-child relationship (Dominiak-Kochanek, 2018).

### **1.6.2 Parenting in Turkey**

From the Turkish context, it has also been noted that parenting has undergone some changes, notably an increase in the psychological value, as opposed to utilitarian value, of children in the family (Kağıtçıbaşı, Ataca, 2005). The context of parenting in Turkey is traditionally seen as hierarchical and focuses heavily on the patriarchal patterns of family life (Kağıtçıbaşı, Ataca, 2005). However, in a review on the changing values in Turkish society, findings also reveal increases in self-respect for women, individual autonomy, and a decrease in parent authoritarian control (Akyil et al., 2016).

Autonomy, on one hand, has been seen as greatly valuable in Western society, and on the other hand the implications of this for non-Western societies may be different, especially as the Western view has often taken forefront (Rothbaum & Trommsdorff, 2007; Kağıtçıbaşı, 2013). It is important to note that autonomy for a child does not connote a lack of parental control, rather in a society such as Turkey, parental control is valued and seen as a way to maintain interconnectedness while also being able to discipline the child (Kağıtçıbaşı, 2013). For example, in Güngör and Bornstein's (2010) study, attachment avoidance was associated psychological control in Belgian, but not in Turkish adolescents. Thus, in the Turkish society aspects of PPC, such as love withdrawal, intrusion, and guilt induction may not have such negative impacts on the child, rather they are expected of parents (Sümer & Kağıtçıbaşı, 2010).

### **1.6.3 Parenting in the Netherlands**

The Netherlands, as compared to Poland and Turkey, is the culture with the highest individualism score and the individualistic culture supports autonomous parenting, a myriad of choices, and independence for children (Yaman et al., 2010). In a report on Dutch parenting, it was emphasized that parents in the Netherlands have their own say in how they want to raise

their children and it is assumed that Dutch parents have scientific knowledge of parenting (Knijn & Hopman, 2015). While this approach keeps parents informed and encourages “self-strength” in Dutch parents, there is also a large responsibility on the parents. This could mean that experts have only a minor role in comparison, as Dutch parents are likely already guiding themselves with scientific evidence even if a professional is not present (Knijn & Hopman, 2015).

### **1.7 Aims of the study and hypotheses**

The present study aims to distinguish whether the concepts of parental reflective functioning and parental psychological control have comparable or culturally distinct relations with child attachment in the countries of Turkey, Poland, and the Netherlands within the mother-child relationship. These countries were chosen as distinct nations with differing cultural groups based on Hofstede’s (2011) dimensions of culture, tightness scores (Gelfand et al., 2011), and relational mobility scores (Thomson, et al., 2018). Additionally, each country has undergone their own societal changes that have had relative impacts on parenting. With changes in socialization and previous contradicting conclusions regarding parental reflective functioning and parental psychological control, there is a gap in research on the moderation of culture for these constructs. Furthermore, parental reflective functioning has not been extensively explored in a relation to psychological control and attachment. Thus this study will add to the body of research on these constructs in order to gain further clarity and insight on PRF as a mediator.

Sets of hypotheses were formulated. The first set of hypotheses is about parental psychological control in Poland, Turkey, and the Netherlands. The first hypothesis postulates that (1.1) parental psychological control will be higher in more collectivistic cultures (Turkey) where it may be the cultural norm, whereas psychological control will be lower in more individualistic countries (the Netherlands and Poland). This hypothesis is in line with previous



research from Fung and Lau (2012) as well as Scharf and Goldner's (2018) review on parental psychological control, additionally it follows Kağıtçıbaşı's (2013) autonomy-relatedness from a Turkish cultural context. In accordance with these findings, the next hypothesis states that (1.2) psychological control will be positively associated with attachment insecurity across cultures; however the association may be stronger in more individualistic countries (Netherlands) than in collectivistic countries (Turkey). This is also supported by Scharf and Goldner's (2018) review about parental psychological control, in which negative outcomes were associated with parental psychological control across cultural contexts, though the collectivistic cultures had fewer negative outcomes as opposed to the individualistic cultures.

The second set of hypotheses is about parental reflective functioning in Poland, Turkey, and the Netherlands. The next hypothesis is in accordance with dimensions of culture and socialization in each culture proposing that (2.1) the parental reflective functioning dimension of pre-mentalizing will be higher in more collectivistic countries such as Turkey, whereas (2.2) the parental reflective functioning dimensions of interest and curiosity in mental states and certainty about mental states will be higher in more individualistic countries such as the Netherlands and Poland. This hypothesis is also supported by Hughes, Devine, and Wang's (2018) study on mind-mindedness in parents, as well as Aival-Naveh, Rothschild-Yakar, and Kurman's (2019) systematic review of mentalizing which found individualistic cultures to value and use mentalizing more often than collectivistic cultures. The next hypothesis theorizes that (2.3) the parental reflective functioning dimension of pre-mentalizing will be positively associated with attachment insecurity across cultures; though this association may be stronger in individualistic cultures such as the Netherlands. Furthermore, it is theorized that (2.4) the parental reflective functioning dimensions of interest and curiosity in mental states and certainty about mental states

will be negatively associated with attachment insecurity across cultures; though this association may be stronger in more collectivistic cultures such as Turkey, than in Poland or the Netherlands. Hypotheses 2.3 and 2.4 can be supported by Friedman et al.'s (2010) cultural fit hypothesis, which accounts for relationship problems, or attachment avoidance, through a misfit in cultural norms. In this study the use of parental reflective functioning (the dimensions of interest and curiosity in mental states and certainty about mental states) is proposed to be normative in individualistic cultures. Therefore, a lack of parental reflective functioning (the dimension of pre-mentalizing) will cause attachment insecurity more strongly than in individualistic cultures where its use is not expected.

The third and final set of hypotheses explores the relation between parental reflective functioning, parental psychological control and attachment security. Thus, using a broader scope of research from the areas of trauma, psychopathology, and emotion regulation it is hypothesized that (3.1) mother's reflective functioning mediates the association between parental psychological control and child's attachment insecurity in the total sample. Therefore it is hypothesized that when mother's use parental reflective functioning, it could have an impact on PPC and furthermore attachment.

## **Methods**

### **2.1 Procedure**

Data was collected in accordance with the project *Combination of emic and etic approach to parenting and attachment* (CEE-PaAtt) led under dr Katarzyna Lubiewska and granted by the National Science Center in Poland. Mothers with children aged 8 through 12 in the countries of Poland, the Netherlands, and Turkey were randomly recruited by professional companies. Participants, both mothers and children, were called and invited to take part in the

study. Those participants, who consented to participate, were asked to fill in a set of various parenting and attachment scales, being informed that they could ask questions or withdraw from the study at any time. Mothers completed questionnaires about attachment and parenting, whereas children completed questionnaires about attachment and their mother's parenting. The study was approved by the ethics committee.

## **2.2 Participants**

Participants included 250 mothers with children aged 8 to 12 from each of the countries of Poland ( $n = 258$ ), the Netherlands ( $n = 250$ ), and Turkey ( $n = 250$ ). The mean age of children was almost 10 years old with about 53% of children being females in the total sample. Mothers were aged 24 to 50 (mean age from about 36 to 41 years old). The mother's level of education varied with Polish mothers spending the most of time in school (about 37% with higher education), and Turkish mothers spending the least amount of time in school (about 12% with higher education). Additionally, most families resided in cities (from 57 to 70% depending on the cultural group).

## **2.3 Measures**

The current study utilizes three scales: The Parental Reflective Functioning Questionnaire – PRFQ (Luyten et al., 2017), The Psychological Control Scale – PCS (Barber, 1996), and the Experience in Close Relationships Scale – Revised for Child – ECR-RC (Brenning et al., 2011). The scales' properties were analyzed through use of IBM SPSS version 26 and R studio with the “lavaan” (Rosseel, 2012) and “semTools” packages (Jorgensen et al., 2018) as well as the “semPlot” package for visualizing models (Epskamp, 2015) while following recommendations for cross-cultural psychometric analyses (Lubiewska & Głogowska, 2018; Fischer & Karl, 2019). Data was first checked for distribution and outliers. As the data was not normally

distributed all analyses used a scaling correction, the Satorra-Bentler adjustment for nonnormality (Satorra & Bentler, 2001). Next, PRFQ, ECR-RC, and PCS scales were analyzed for scale structure using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) with the promax rotation. Scale structure was examined based on the model fit parameters in the CFA of the original scale structure and on an alternative scale structure based on EFA, adjusted if necessary. Model fit parameters that were used for factor analyses include root mean square error of approximation (RMSEA), comparative fit index (CFI), standardized root mean squared residual (SRMR), chi squared ( $\chi^2$ ), and degrees of freedom (*df*). Next, reliability was reported for each scale in the respective countries and in the total sample. Finally, measurement invariance was tested in order to establish that the scales have similar measurement properties in each respective culture (Fischer & Karl, 2019). Invariance testing was done through use of the “lavaan” and “semTools” packages in the R environment.

### **2.3.1 Parental Reflective Functioning Questionnaire (Luyten, et al., 2017)**

The Parental Reflective Functioning Questionnaire (PRFQ) is an 18 item questionnaire that was created as a brief tool to assess mentalizing, or reflective functioning, of caregivers in relation to their child (Luyten, et al., 2017). Mothers reported the extent to which they agree or disagree about a statement concerning themselves and their child using a five-point Likert scale. The scale ranges from five signifying “totally agree” to one indicating “totally disagree” with three in the middle as “neutral”.

The PRFQ encompasses three subscales of mentalizing expected by the scale’s authors and including: 1) pre-mentalizing modes, 2) certainty about mental states, and 3) interest and curiosity in mental states. Each subscale includes 6 items as per Luyten and colleagues’ (2017) scale development and validation. Example items from the first subscale, pre-mentalizing modes,

include item 1: “The only time I am certain my child loves me is when he or she is smiling at me” or item 13: “When my child is fussy he or she does that just to annoy me”. The pre-mentalizing subscale is theoretically described as the point before mentalizing occurs in which the parent is not yet able to understand the child’s mental states, therefore still illustrating non-mentalizing (Luyten, et al., 2017).

The second subscale, certainty about mental states, includes items such as item 2: “I always know what my child wants” or item 8: “I can predict what my child will do”. However, the certainty about mental states subscale also includes one reverse-coded item 11: “I can sometimes misunderstand the reactions of my child”. The certainty about mental states subscale theoretically encompasses hyper- and hypo-mentalizing. Hypermentalizing reveals an overly high certainty about a child’s mental states that can be intrusive, whereas hypomentalizing reveals a lack of certainty of the child’s mental states (Luyten, et al., 2017).

The third and final subscale of the PRFQ, interest and curiosity in mental states, includes items such as 3: “I like to think about the reasons behind the way my child behaves and feels”, as well as one reverse-coded item 18: “I believe there is no point in trying to guess what my child feels”. The interest and curiosity in mental states subscale distinguishes the parents’ interest (higher scores) or lack of interest (lower scores) in mental states of the child (Luyten, et al., 2017). Furthermore, previous research has found that interest and curiosity in mental states are negatively correlated with attachment anxiety and avoidance (Luyten, et al., 2017).

### **2.3.1.1 PRFQ exploratory factor analysis**

For the PRFQ, in the total sample a three-factorial solution was found with the exclusion of items 11 and 18 (items that were recoded for scoring and had difficulties loading under

theoretically expected subscales). This created an appropriate alternative model to run for later CFA.

EFA in the respective countries also revealed three-factor solutions for the Polish and Dutch samples. For the Polish sample item 18 was loading onto a factor different than theoretically expected. In the Dutch sample items 11 and 18 were loading negatively onto factors different than theoretically expected.

A three-factorial solution was found in the Turkish sample. Though the EFA revealed a three-factor solution, the two-factor model may be a better fit in Turkey. With a three-factor solution in Turkey, only items for the pre-mentalizing factor were loading in a theoretically expected manner (with the exception of items 11 and 18). Whereas the other two factors were a combination of items from the certainty about mental states and interest/curiosity in mental states subscales that were not theoretically consistent.

### **2.3.1.2 PRFQ confirmatory factor analysis**

Next, CFA with the original scale's structure and the alternative structure (items 11 and 18 excluded) based on the EFA was run. The CFA for the total sample including all scale items revealed an unacceptable model fit with a high RMSEA, low CFI, and high SRMR (RMSEA = .084, CFI = .798, SRMR = .113,  $\chi^2 = 837.474$  and  $df = 132$ ). After removal of items 11 and 18 for the total sample, the alternative model's fit was acceptable (RMSEA = .059, CFI = .912, SRMR = .063,  $\chi^2 = 365.585$ , and  $df = 101$ ). Covariances between the factors were .203 ( $p < .001$ ) between pre-mentalizing and certainty about mental states, -.088 ( $p < .07$ ) between interest/curiosity in mental states and certainty about mental states, and finally .569 ( $p < .001$ ) between certainty in mental states and interest/curiosity in mental states.

CFA in all respective groups revealed unacceptable model fits with the original scale's structure (Poland: low CFI of .840, high SRMR of .112; Netherlands: low CFI of .823; Turkey: high RMSEA of .117, low CFI of .675, high SRMR of .13). After removal of problematic items 11 and 18 from the model, and using the same alternative model as found in the EFA for the total sample, the CFA in Poland and the Netherlands revealed the alternative model to improve to an acceptable fit (Poland: RMSEA = .063, CFI = .914, SRMR = .092,  $\chi^2 = 202.798$ , and  $df = 101$ ; Netherlands: RMSEA = .047, CFI = .911, SRMR = .073,  $\chi^2 = 155.896$ , and  $df = 101$ ). Covariances between factors in the Polish group were .210 ( $p < .01$ ) between pre-mentalizing and certainty about mental states, -.438 ( $p < .001$ ) between interest/curiosity in mental states and certainty about mental states, and finally 0.498 ( $p < .001$ ) between certainty in mental states and interest/curiosity in mental states. Covariances between factors in the Dutch group were .087 ( $p < 0.30$ ) between pre-mentalizing and certainty about mental states, -0.107 ( $p < .30$ ) between interest/curiosity in mental states and certainty about mental states, and finally 0.384 ( $p < .001$ ) between certainty in mental states and interest/curiosity in mental states.

CFA for the Turkish sample with removal of items 11 and 18 improved the model fit parameters, but still with a poor RMSEA of .100 and low CFI of .799. The addition of four covariances between error terms (modification indices) improved the model fit to acceptable in Turkey (RMSEA = 0.068, CFI = 0.903, SRMR = 0.071,  $\chi^2 = 209.549$ , and  $df = 97$ ). Covariances between factors in the Turkish group were 0.065 ( $p < .50$ ) between pre-mentalizing and certainty about mental states, .093 ( $p < .30$ ) between interest/curiosity in mental states and certainty about mental states, and finally .771 ( $p < .001$ ) between certainty in mental states and interest/curiosity in mental states.

### 2.3.1.3 PRFQ reliability

The alternative model structure based on EFA and CFA and excluding items 11 and 18 was used as the final PRFQ model for these reports. For the total sample, the pre-mentalizing factor Cronbach's alpha value was ( $\alpha$ ) = .817 and omega value was ( $\omega$ ) = .820. The reliability coefficients for certainty about mental states were  $\alpha = .797$ ,  $\omega = .799$ , and  $\alpha = .702$ ,  $\omega = .707$  for interest and curiosity in mental states.

For the Polish, Dutch, and Turkish samples, the reliability coefficients of the pre-mentalizing factor were  $\alpha = 0.851$ ,  $0.700$ , and  $0.790$ , as well as  $\omega = 0.860$ ,  $0.695$ , and  $0.793$ , respectively. The reliability coefficients of the certainty about mental states factor were  $\alpha = 0.740$ ,  $0.749$ , and  $0.739$ , as well as  $\omega = 0.748$ ,  $0.755$ , and  $0.739$ , for the Polish, Dutch, and Turkish samples respectively. Finally, the reliability coefficients of the interest and curiosity in mental states factor were  $\alpha = 0.724$ ,  $0.719$ , and  $0.704$ , as well as  $\omega = 0.723$ ,  $0.719$ , and  $0.723$ , for the Polish, Dutch, and Turkish samples respectively.

### 2.3.1.4 PRFQ measurement invariance

Measurement invariance was checked on the PRFQ alternative model, which had more acceptable model fit. Invariance can be supported through change statistics such as a non-significant chi-square difference or a CFI difference below .01 between models (Byrne & Van de Vijver, 2010). Metric invariance was supported with a chi square difference ( $\Delta\chi^2$ ) of 33.696 and an insignificant (*ns*) *p* value ( $\Delta\chi^2 = 33.696$ ; *ns*). Metric invariance was also supported using the CFI difference of .005 between models ( $\Delta\text{CFI} = .005$ ), which is below the acceptable .01 CFI difference. Full scalar invariance was not able to be established, however partial scalar invariance was established using the CFI difference and after releasing equality constraints for items 2, 3, 5, 6, 9, and 14, which equals 38% of the scale's items ( $\Delta\text{CFI} = .008$ ,  $\Delta\chi^2 = 56.375$ , *p*



<.001). The constraints include three items from the certainty about mental states factor (2, 5, 14) and three items from the interest/curiosity in mental states factor (3, 6, 9), both equal to 60% of the factors' respective items.

### **2.3.2 Psychological Control Scale (Barber, 1996)**

The Psychological Control Scale (PCS) is an 8 item scale developed to measure psychological control (Barber, 1996). Mothers responded to these items by using a five-point Likert scale ranging from five signifying “totally agree” to one indicating “totally disagree” with the midpoint of three as “neutral”. Statements include item 3: “I often interrupt her/him.” Item 3 and other statements were also about constraining the child’s verbal expressions through interruptions, changing the subject, or not permitting the child to speak. Items were also about invalidating the child’s feelings through telling the child how he/she should feel and blaming or criticizing the child when he/she made a mistake (Barber, 1996).

#### **2.3.2.1 PCS exploratory factor analysis**

EFA for the total sample revealed two factors, with all but two items loading onto the first factor. EFA in the respective countries also revealed two factor solutions, however with most items loading onto the first factor. A one-factorial solution was tested further in CFA.

#### **2.3.2.2 PCS confirmatory factor analysis**

CFA with a single factor structure was run in the total sample and revealed an unacceptable fit with a high RMSEA and low CFI (RMSEA= .158, CFI = .848, SRMR = .084,  $\chi^2 = 285.758$  and  $df = 20$ ). With the addition of a covariance between error terms for items 4-5, as suggested by the modification indices, the model fit improved, though RMSEA was still high (RMSEA= .110, CFI = .901, SRMR = .066,  $\chi^2 = 191.742$  and  $df = 19$ ). CFA in each respective sample with a single factor structure revealed acceptable model fit in Poland (RMSEA= .086,

CFI = .961, SRMR = .038,  $\chi^2 = 58.025$  and  $df = 20$ ) and acceptable model fit in the Netherlands after including one covariance between error terms (RMSEA = .078, CFI = .926, SRMR = .065,  $\chi^2 = 48.118$ , and  $df = 19$ ). In Turkey item 4 was omitted due to a low factor loading of .013, and one covariance between error terms was added to reveal an almost acceptable model fit with the exception of a slightly high RMSEA (RMSEA = .109 CFI = .919, SRMR = .055,  $\chi^2 = 51.626$  and  $df = 13$ ). Item 4 had low factor loadings in the total sample ( $< .30$ ) and Poland ( $< .40$ ) as well as extremely low factor loadings in Turkey ( $< .05$ ), thus this item will be omitted in further analyses.

### **2.3.2.3 PCS reliability**

A single factor structure with the omission of item 4 was used for these reports. For the total sample Cronbach's alpha values were  $\alpha = .846$  and  $\omega = .815$ . For the Polish, Dutch, and Turkish samples, the reliability coefficients were  $\alpha = .886$ ,  $.795$ , and  $.830$ , as well as  $\omega = .893$ ,  $.771$ , and  $.787$ , respectively.

### **2.3.2.4 PCS measurement invariance**

Using the one-factor model with the omission of item 4, partial metric invariance was established after releasing equality constraints from items 3, 5, and 6 (43% of the scale items,  $\Delta CFI = .008$ ,  $\Delta\chi^2 = 16.739^*$ ,  $p < .05$ ). Scalar invariance was not able to be established.

### **2.3.3 Experience in Close Relationships Scale – Revised for Child – ECR-RC (Brenning, et al., 2011)**

The Experience in Close Relationships Scale version revised for child (ECR-RC) is a 36 item scale used to measure attachment anxiety and avoidance (Brenning, et al., 2011). The children's version includes items that children answer according to their relationship with a caregiver. The attachment anxiety subscale addresses preoccupations, worries, and fears that a

child may have in relationship with a caregiver. An example of a scale item for anxiety includes “I am worried that my mother might want to leave me”. The attachment avoidance subscale addresses the avoidance of closeness and intimacy that a child may have in relationship with a caregiver. An example of a scale item for avoidance includes “I do not like to tell my mother how I really feel”. Similarly to the other scales used in this study, these items were answered using a 5 point Likert scale ranging from five signifying “totally agree” to one indicating “totally disagree” with the midpoint of three as “neutral”.

### **2.3.3.1 ECR-RC exploratory factor analysis**

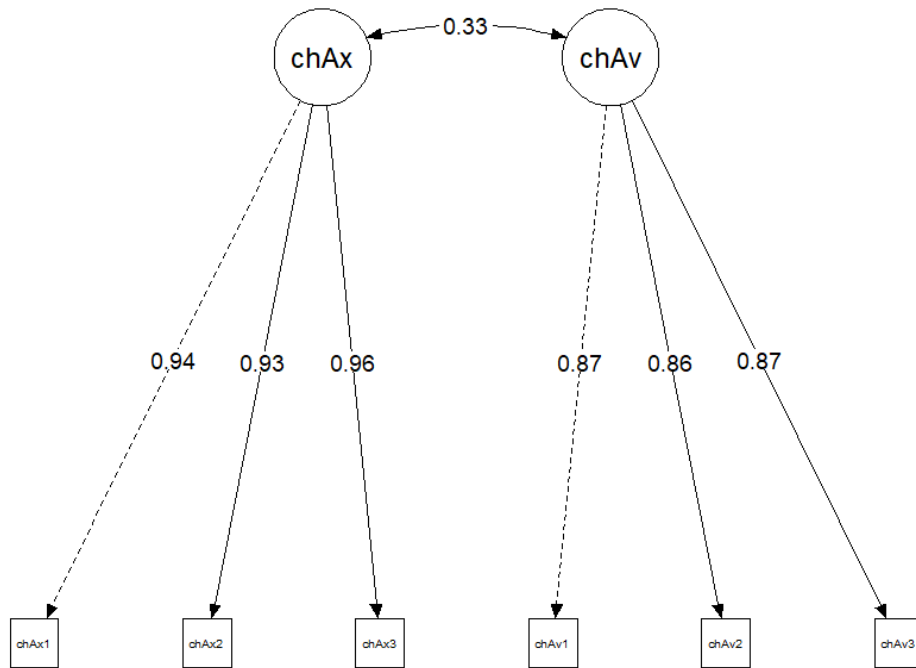
EFA of the entire sample revealed two factors of anxiety and avoidance, though with various factor loading problems mostly due to recoding. The EFA on the Polish, Dutch, and Turkish samples also revealed a two-factorial solution, however many items being affected by recoding.

### **2.3.3.2 ECR-RC confirmatory factor analysis and item parceling**

CFA on the original scale’s structure in the total sample and in cultural groups revealed unacceptable model fits. In the Polish sample analysis of modification indices revealed that avoidance item 12 loaded more appropriately onto the anxiety factor. With the inclusion of this modification index the model fit for the Polish sample was acceptable (RMSEA = .054, CFI = .906, SRMR = .071,  $\chi^2 = 1037.201$ , and  $df = 592$ ). Analysis of modification indices in the Dutch sample revealed three covariances between error terms that could improve the model fit. Additionally, two items which had negative factor loadings were omitted, and a following CFA was run on this alternate Dutch model. Adding modification indices and omitting two items in the Dutch sample improved the model fit to an almost acceptable amount, however the CFI is still low (CFI = .872, RMSEA = .047, SRMR = .074,  $\chi^2 = 817.354$ , and  $df = 523$ ).

CFA for the Turkish sample on the original scale's structure was not possible with a CFI problem and extremely low factor loadings. In order to improve the model fit items of the ECR scale were parceled into indicators for each factor of anxiety and avoidance. The anxiety parcels included 12 items and the avoidance parcels include 8 items. The parcels are shown in Figure 1 below.

**Figure 1**  
*Parcels used for Measurement Invariance Testing and Structural Equation Modeling for the Experience in Close Relationships Scale-Revised for Child*



*Note.* “chAx” represents child’s attachment anxiety and “chAv” represents child’s attachment avoidance. The curved arrow between “chAx” and “chAv” corresponds to the covariance between latent variables. Factor loadings are shown with straight, one-sided arrows.

Parcel “chAx1” encompasses scale items 13, 19, 27, and 23.

Parcel “chAx2” encompasses scale items 5, 15, 31, and 29.

Parcel “chAx3” encompasses scale items 35, 25, 7, and 33.

Parcel “chAv1” encompasses scale items 20, 36, and 22 (all re-coded items).

Parcel “chAv2” encompasses scale items 24, 34, and 32 (all re-coded items).

Parcel “chAv3” encompasses scale items 30 and 26 (both re-coded items).

Parceling these items made the model more parsimonious and allowed for improvements in model fits. After item parceling, the Turkish sample's model fit improved and previous problems were overridden (RMSEA = .081, CFI = .989, SRMR = .016,  $\chi^2 = 21.221$ , and  $df = 8$ ). Additionally, analysis of the parceled model in the total group revealed an acceptable model fit (RMSEA = .050, CFI = .990, SRMR = .029,  $\chi^2 = 23.154$ , and  $df = 8$ ).

### **2.3.3.3 ECR-RC reliability**

For the total sample Cronbach's alpha values for the anxiety factor were  $\alpha = .930$  and  $\omega = .956$ . For the avoidance factor the values were  $\alpha = .899$  and  $\omega = .900$ . With culture included in the parceled ECR model the fit parameters were also acceptable with RMSEA = .033, CFI = .998, SRMR = .016,  $\chi^2 = 30.598$ , and  $df = 24$ . Covariances between the factors were 0.670 ( $p < .001$ ) in Poland, 0.554 ( $p < .001$ ) in the Netherlands, and 0.199 ( $p < 0.004$ ) in Turkey. Cronbach's alpha values for the anxiety factor were  $\alpha = 0.947$ , 0.889, and 0.927 and  $\omega = 0.947$ , 0.891, and 0.928 for Poland, Turkey, and the Netherlands respectively. For the avoidance factor the values were  $\alpha = 0.933$ , 0.871, and 0.891 and  $\omega = 0.934$ , 0.873, and 0.892 for Poland, Turkey, and the Netherlands respectively.

### **2.3.3.4 ECR-RC measurement invariance**

Measurement invariance was tested on the parceled model and partial metric invariance was able to be established after releasing equality constraints on one item ( $\Delta CFI = .001$ ;  $\Delta\chi^2 = 6.25$ , *ns*). After releasing equality constraints on two items, partial scalar invariance was able to be established ( $\Delta CFI = .008$ ;  $\Delta\chi^2 = 36.39$ ,  $p > 0.5$ ).

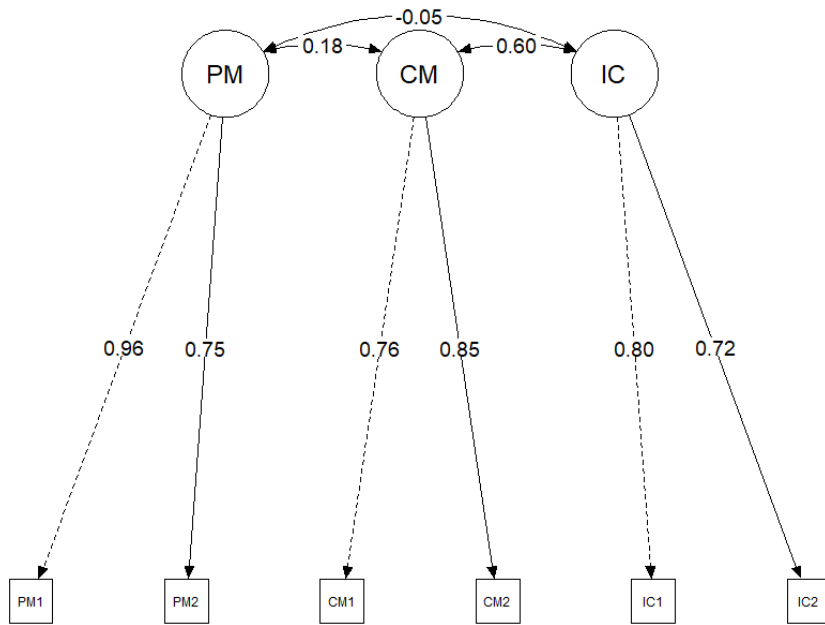
## **Results**

### **3.1. Statistical analysis plan**

Hypothesis testing was conducted in three stages: mean level differences analyses, relations and moderation analyses, and finally mediation analyses, the former in SPSS and the latter two in R studio. Mean level differences (hypotheses 1.1, 2.1, and 2.2) were tested with ANOVA and Tukey's post hoc test for scales that evidenced scalar invariance. Hypothesis 1.1, regarding psychological control, was not tested as scalar invariance was not established. Descriptive statistics of means and standard deviations were generated. Next, relations and moderation analyses, as well as mediation analyses, were conducted using structural equation models (SEM). In order to create more parsimonious SEM models the items in each questionnaire were parceled into packages. The ECR-RC scale was parceled as detailed in the Methods section and as shown in Figure 1. The PRFQ was parceled in line with the theoretically expected subscales, as visualized in Figure 2 and the PCS was parceled into three observable indicators as visualized in Figure 3 below.

**Figure 2**

*Parcels used for Structural Equation Modeling for the Parental Reflective Functioning Questionnaire*



*Note.* “PM” represents pre-mentalizing modes, “CM” represents certainty in mental states, and “IC” represents interest and curiosity in mental states. Curved arrows show the covariance between latent variables. Factor loadings are shown with straight, one-sided arrows.

Parcel “PM1” encompasses scale items 1, 4 and 16.

Parcel “PM2” encompasses scale items 7, 10, and 13.

Parcel “CM1” encompasses scale items 2, 5, and 17.

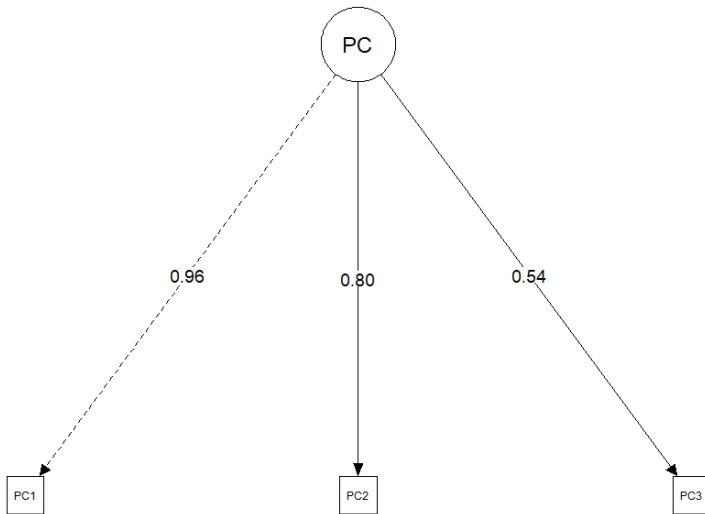
Parcel “CM2” encompasses scale items 14 and 8.

Parcel “IC1” encompasses scale items 3, 6, and 15.

Parcel “IC2” encompasses scale items 9 and 12.

**Figure 3**

*Parcels used for Structural Equation Modeling for the Psychological Control Scale*



*Note.* “PC” represents psychological control.

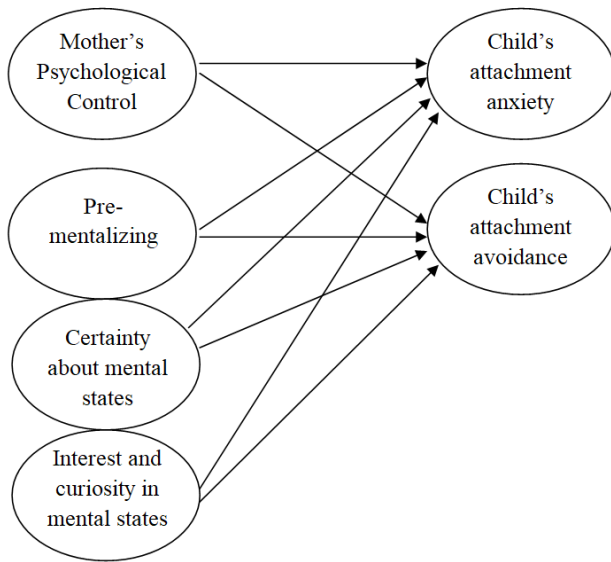
Parcel “PC1” includes items 1, 2, and 7, parcel “PC2” includes items 3 and 8, and parcel “PC3” includes items 4, 5, and 6.

After parceling, SEM models were created to test hypotheses. The first model, pictured in Figure 4, addresses hypotheses 1.2, 2.3 and 2.4. Figure 4 illustrates the relations between psychological control and reflective functioning (distinguished by three subscales) on attachment insecurity of children (distinguished by anxiety and avoidance). First the model was tested in the total sample, and then significant paths were further inspected for moderation in each cultural group. Moderation effects were tested using chi square difference tests. Regression paths were analyzed for their significance and covariances between all variables (psychological control, dimensions of reflective functioning, and attachment anxiety or avoidance) were reported.



**Figure 4**

*Model of the relations between psychological control and reflective functioning on attachment insecurity*

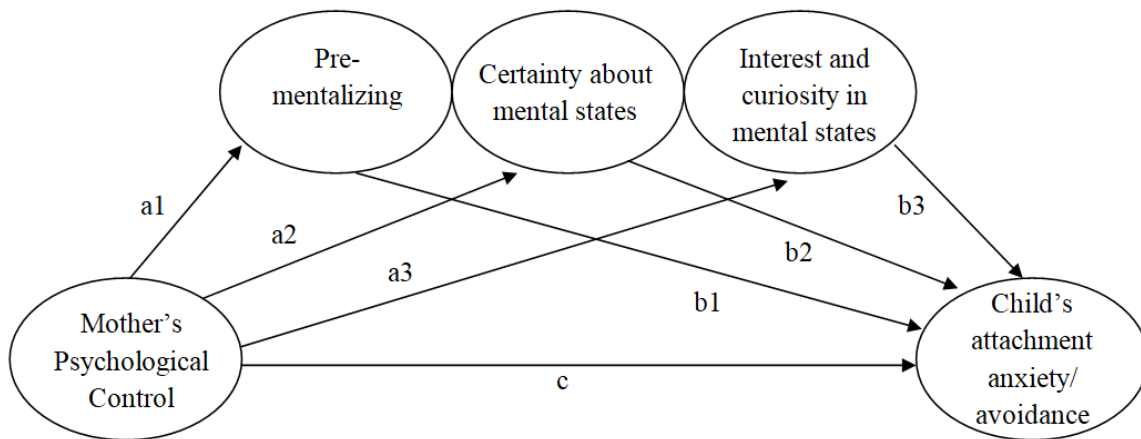


*Note.* Parental reflective functioning encompasses the subscales of pre-mentalizing (PM), certainty about mental states (CM), and interest-curiosity in mental states (IC).

Next, mediation was tested in the entire sample, addressing hypothesis 3.1. A complex model including multiple mediators, pictured below in Figure 5, was tested. This model was run twice for the outcome variable of attachment insecurity as distinguished by (1) attachment anxiety and (2) attachment avoidance. Mediation was tested for effects, including the total effect, which is a combination of the direct effect and the total indirect effect. Indirect effects are labeled as paths “a” and “b” in the model, whereas the total effect encompasses all paths “c”, “a”, and “b”. Confidence intervals were obtained through bootstrapping and standard errors, and significant values, as well as significant paths and regressions were reported for the mediation model.

**Figure 5**

*Model of the relation between psychological control and child's attachment as mediated by reflective functioning*

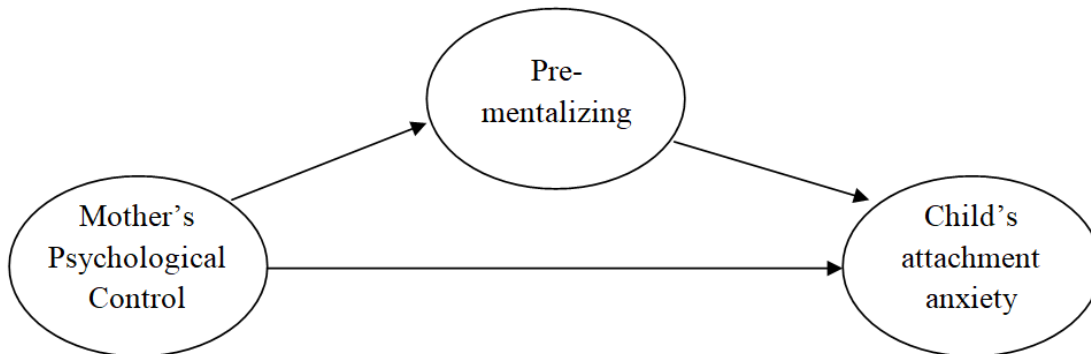


*Note.* Parental reflective functioning encompasses the subscales of pre-mentalizing (PM), certainty about mental states (CM), and interest-curiosity in mental states (IC).

After testing the complex mediation model, single mediators were inspected further and tested separately in their own models. This includes only one mediator and one subscale of attachment insecurity (either avoidance or anxiety). Figure 6, pictured below, visualizes the relation between psychological control and child's attachment anxiety as mediated by pre-mentalizing. The mediator visualized in Figure 6 is one of three mediators, that represent parental reflective functioning, which were tested. The model also includes the outcome variable of child's attachment insecurity, distinguished by attachment anxiety or attachment avoidance. The predictor is psychological control.

**Figure 6**

*Model of the relation between psychological control and child's attachment anxiety as mediated by pre-mentalizing*



*Note.* This is a simplified mediation model with a single mediator. Pre-mentalizing is one of three subscales of the Parental Reflective Functioning Questionnaire. The other subscales of certainty about mental states and interest-curiosity in mental states were tested separately as mediators. Additionally, child's attachment is distinguished by the two subscales of anxiety and avoidance which were also tested separately.

### **3.2. Mean differences**

Hypothesis 1.1, which postulated that there would be differences in psychological control among the cultures, was not explored for statistical differences as scalar invariance was not established for the PCS scale. Means and standard deviations for PCS are shown in Table 1 below.

Hypotheses 2.1 and 2.2, which also postulated about mean level differences, but for RF, were tested. ANOVA revealed a significant difference for the pre-mentalizing and certainty about mental states subscales. Mothers in Poland scored highest on pre-mentalizing and certainty about mental states, while mothers in the Netherlands had the lowest mean scores on pre-mentalizing and on certainty about mental states. However, there was no significant difference for the interest-curiosity in mental states subscale. Means and standard deviations for the PRFQ are also shown in Table 1.

**Table 1**

*Means (standard deviations) of the Parental Reflective Functioning Questionnaire subscales and the Psychological Control Scale in cultural groups and in the total sample*

Subscales	Means ( <i>sd</i> )				<i>F</i> ( <i>df</i> )	Total sample <i>n</i> =758
	Poland <i>n</i> = 258	The Netherlands <i>n</i> =250	Turkey <i>n</i> =250			
Psychological control	2.037 (.76)	1.55 (.47)	1.77 (.66)	-		1.79 (.66)
Pre-mentalizing	2.26 <sup>A, B</sup> (.81)	1.72 <sup>A</sup> (.48)	2.04 <sup>B</sup> (.82)	34.98* (2)		2.01 (.75)
Certainty about mental states	3.29 <sup>a</sup> (.66)	2.70 <sup>a</sup> (.62)	3.59 <sup>a</sup> (.74)	111.13* (2)		3.19 (.77)
Interest and curiosity in mental states	3.71 (.57)	3.57 (.58)	3.63 (.76)	2.71 (2)		3.64 (.64)

*Note.* \*  $p < .001$ ; *F* statistic is not applicable in the PCS as measurement invariance was not established. Upper case letters indicate mean differences at  $p < .001$ , whereas lower case letters indicate mean differences at  $p < .05$ .

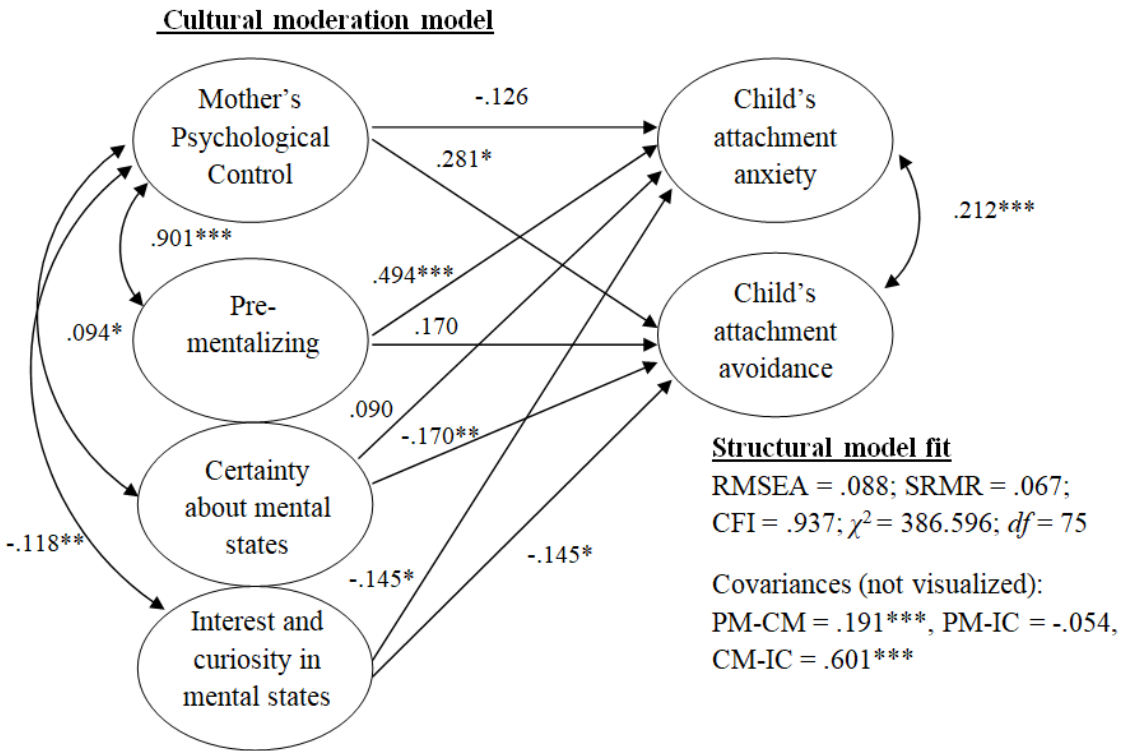
The results in Table 1 tested hypotheses 2.1 and 2.2, or mean level differences in reflective functioning.

### **3.3.Relation between maternal parenting and child attachment across cultures**

The cultural moderation model investigated hypothesis 1.2 about the relations between PC and attachment insecurity (anxiety and avoidance), as well as hypotheses 2.3 and 2.4 about the relations between PRF and attachment insecurity (anxiety and avoidance). Several path coefficients were significant in the total sample and in respective cultures. These paths, along with structural model fits, are specified in Figures 7 and 8 below.

**Figure 7**

*Structural model of the relations between mother's psychological control and reflective functioning toward child's attachment insecurity (anxiety and avoidance) in the total sample*



*Note.* Parental reflective functioning encompasses the subscales of pre-mentalizing, certainty about mental states, and interest-curiosity in mental states. Covariances for the subscales are not visualized for simplicity of the image.

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

As visualized in Figure 7, in the entire sample, mother's psychological control was weakly and positively related to child's attachment avoidance. For the subscales of reflective functioning, mother's pre-mentalizing was moderately and positively related to child's attachment anxiety. The certainty about mental states subscale was negatively and weakly related to attachment avoidance. The interest and curiosity in mental states subscale was negatively and weakly related to both attachment avoidance and attachment anxiety. Additionally of note is the high, positive covariance between psychological control and pre-mentalizing in the entire sample, as well in each respective group.

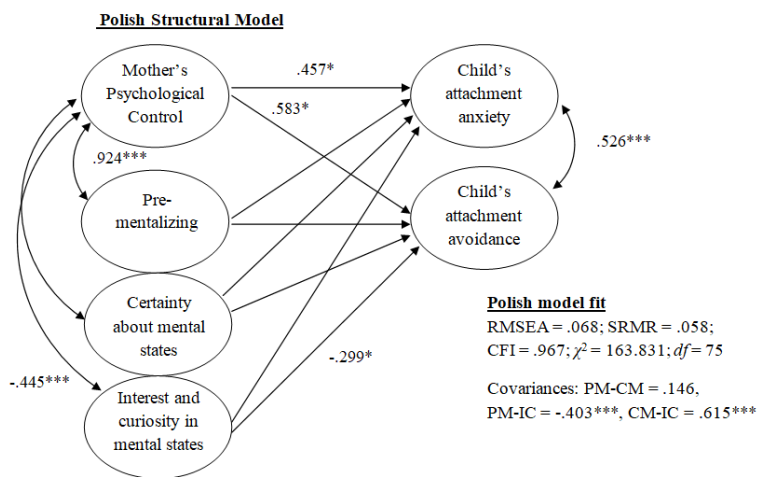
Results revealed two paths that were moderated by culture. First, attachment-avoidance and psychological control was moderated by culture with a chi square difference ( $\Delta\chi^2$ ) of 2.76,  $p < 0.1$ . Second, attachment avoidance and the reflective functioning subscale of pre-mentalizing was moderated by culture ( $\Delta\chi^2 = 4.70, p < 0.1$ ).

Other relations between psychological control and attachment dimensions, as well as between subscales of reflective functioning and attachment dimensions were not moderated by culture ( $\Delta\chi^2 = 4.60, ns$  for anxiety-psychological control;  $\Delta\chi^2 = 2.23, ns$  for anxiety-PM;  $\Delta\chi^2 = 2.01, ns$  for anxiety-CM,  $\Delta\chi^2 = .953, ns$  for avoidance-CM;  $\Delta\chi^2 = 1.96, ns$  for anxiety-IC,  $\Delta\chi^2 = 3.63, ns$  for avoidance-IC).

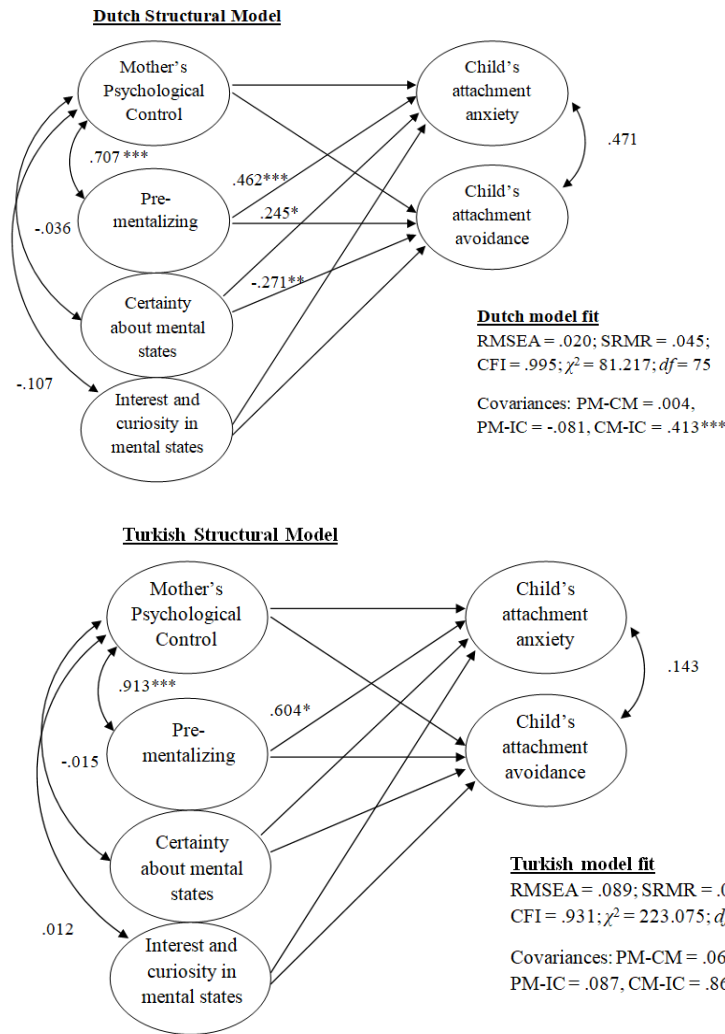
Furthermore, in respective cultures, only significant path coefficients are visualized in Figure 8.

**Figure 8**

*Structural models of the relations between mother’s psychological control and reflective functioning toward child’s attachment insecurity (anxiety and avoidance) in Poland, the Netherlands, and Turkey with significant regressions and covariances shown.*



**Figure 8** (continued).



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

For the Polish sample psychological control was moderately and positively related to both child's attachment anxiety and avoidance. Additionally in the Polish sample the subscale of interest and curiosity in mental states was weakly and negatively related to attachment avoidance. Next, in the Dutch sample pre-mentalizing was moderately and positively related to child's attachment anxiety as well as weakly and positively related to attachment avoidance. Additionally in the Dutch sample the subscale of certainty about mental states was negatively

and weakly related to attachment avoidance. Finally, in the Turkish sample the only significant path was pre-mentalizing as positively and moderately related to attachment anxiety.

### **3.4. Relation between psychological control and child attachment mediated by reflective functioning**

The mediation model underpins hypothesis 3.1 and takes the entire sample into account by investigating the mediation of PRF on PC and attachment insecurity. Paths and regressions of the multiple mediator models are shown in Figure 9 below. As visualized in the mediation model for attachment anxiety in Figure 9, mother's psychological control was 1) strongly and positively related to pre-mentalizing, 2) weakly and positively related to certainty about mental states, and 3) weakly and positively related to interest in curiosity in mental states. Furthermore, pre-mentalizing was moderately and positively related to child's attachment anxiety. Interest and curiosity in mental states was weakly and negatively related to child's attachment anxiety. Lastly in the attachment anxiety mediation model, mother's psychological control was positively and moderately related to child's attachment anxiety.

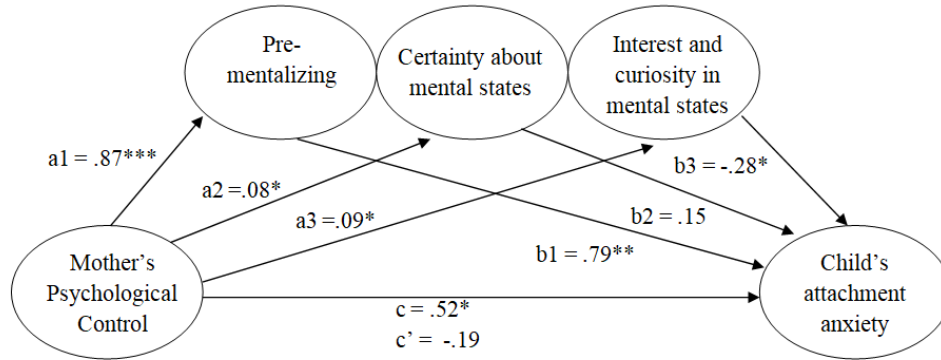
In the mediation model for attachment avoidance, mother's psychological control was 1) strongly and positively related to pre-mentalizing, 2) weakly and positively related to certainty about mental states, and 3) negatively and weakly related to interest and curiosity in mental states. Certainty about mental states was weakly and negatively related to child's attachment avoidance. Interest and curiosity in mental states was weakly and negatively related to child's attachment avoidance. Finally in the attachment avoidance mediation model, mother's psychological control was positively and moderately related to child's attachment avoidance.



**Figure 9**

*Paths and regressions of the mediation of reflective functioning dimensions on relations between psychological control and attachment insecurity (anxiety and avoidance)*

Paths and regressions of the mediation model for attachment anxiety

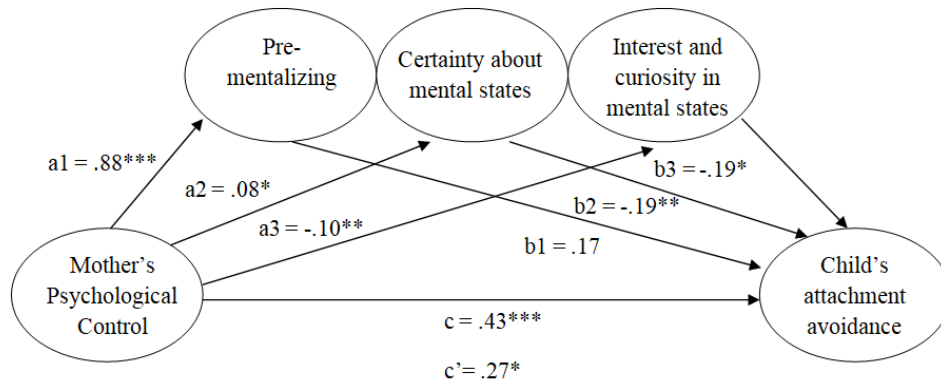


Anxiety model fit

RMSEA = .08; SRMR = .08;  
CFI = .93;  $\chi^2 = 294.84$ ;  $df = 44$

Covariances: PM-CM = .24\*\*\*,  
PM-IC = .13, CM-IC = .62\*\*\*

Paths and regressions of the mediation model for attachment avoidance



Avoidance model fit

RMSEA = .08; SRMR = .08;  
CFI = .94;  $\chi^2 = 278.79$ ;  $df = 44$

Covariances: PM-CM = .25\*\*\*,  
PM-IC = .12, CM-IC = .62\*\*\*

*Note.* Paths are listed as a1, a2, a3, b1, b2, b3, c, and c' next to regressions.

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

Results of mediation analyses on the complex models are described in Table 2 below.

Total effects were significant; however the indirect effect is a precondition for mediation and only the indirect effect for pre-mentalizing (in the attachment anxiety model) was significant.

Therefore, the effect of psychological control on child attachment avoidance was not fully mediated by reflective functioning (distinguished by three mediators).

**Table 2**

*Indirect effects of reflective functioning dimensions on relations between psychological control and child attachment*

Indirect effects	Estimate	SE	95% confidence interval	
			lower	upper
Model 1: Attachment Anxiety				
Pre-mentalizing	.68*	.19	.30	1.06
Certainty about mental states	.01	.01	-.01	.03
Interest and curiosity in mental states	.03	.01	-.01	.05
Sum of indirect effects	.70*	.19	.34	1.09
Total effect	.52*	.06	.41	.63
Model 2: Attachment avoidance				
Pre-mentalizing	.15	.12	-.08	.38
Certainty about mental states	-.02	.01	-.03	.002
Interest and curiosity in mental states	.02	.01	-.001	.04
Sum of indirect effects	.15	.12	-.08	.38
Total effect	.43*	.04	.35	.50

*Note.* \*  $p < .001$ ; the total effect represents a combination of the direct effect and the sum of indirect effects

As an extension of the analysis, the multiple mediators were also tested in separate single mediation models. These results are detailed in Table 3 and Figure 10 below. Notably, results on single mediators revealed that 1) maternal pre-mentalizing mediated relations between psychological control and child attachment anxiety, 2) maternal certainty about mental states mediated relations between psychological control and child attachment avoidance, and 3) maternal interest and curiosity in mental states mediated relations between psychological control and child attachment avoidance.

**Table 3**

*Indirect effects of reflective functioning dimensions on relations between psychological control and child attachment (as tested separately)*

Model and effect	Estimate	SE	95% confidence interval	
			lower	upper
Pre-mentalizing-anxiety model				
Indirect	.69*	.19	.32	1.06
Total	.52*	.06	.41	.64
Pre-mentalizing-avoidance model				
Indirect	.03	.12	-.21	.26
Total	.43*	.04	.35	.50
Certainty about mental states-anxiety model				
Indirect	.01	.01	-.005	.02
Total	.49*	.06	.38	.60
Certainty about mental states-avoidance model				
Indirect	-.03*	.11	-.05	-.004
Total	.41*	.38	.33	.48
Interest and curiosity in mental states-anxiety model				
Indirect	.01	.01	-.004	.03
Total	.49*	.06	.37	.59
Interest and curiosity in mental states-avoidance model				
Indirect	.02*	.01	.003	.04
Total	.41*	.04	.33	.48

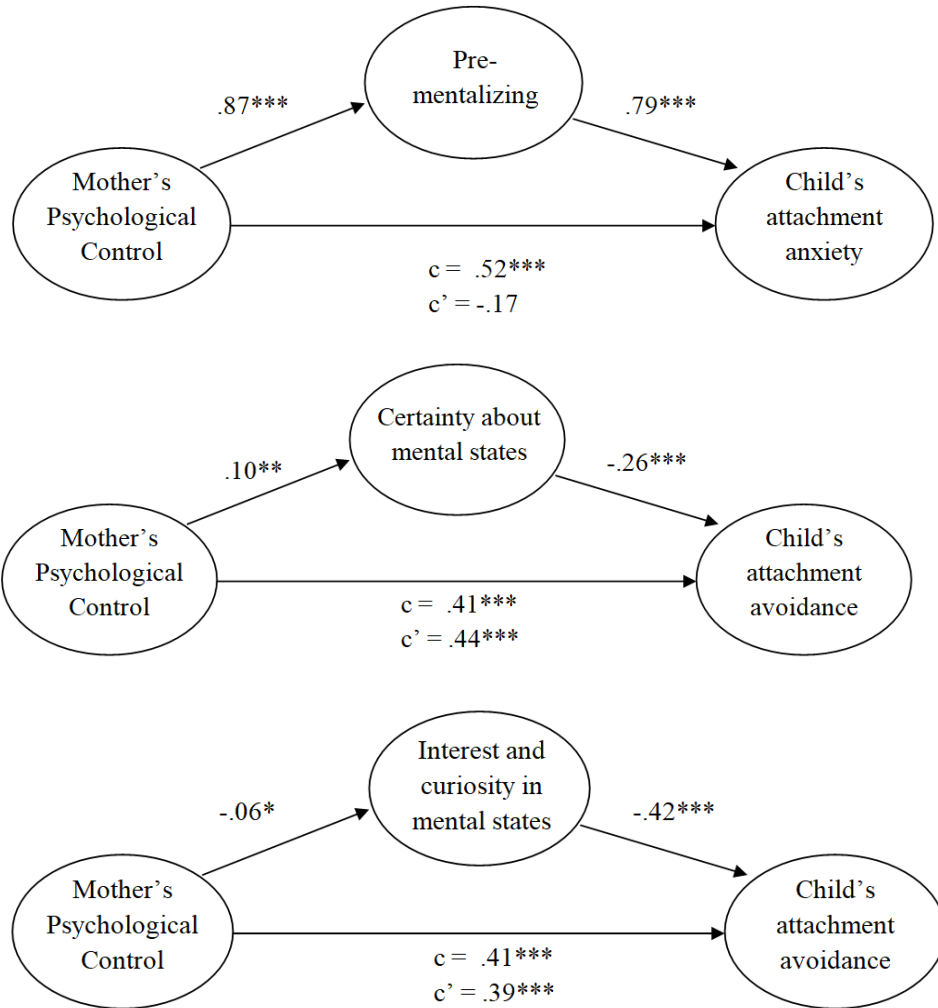
Note. \* $p < .05$

In the single mediation model for attachment anxiety mother's psychological control was strongly and positively related to pre-mentalizing. Pre-mentalizing was also strongly and positively related to child's attachment anxiety. In the single mediation model for attachment avoidance mother's psychological control was 1) strongly and positively related to child's

attachment anxiety, 2) weakly and positively related to certainty about mental states, and 3) weakly and negatively related to interest and curiosity in mental states.

**Figure 10**

*Paths of the mediation of reflective functioning dimensions on relation between psychological control and attachment insecurity (anxiety and avoidance)*



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

## **Discussion**

The aim of the present study was an extensive cross-cultural analysis on links between reflective functioning, psychological control, and attachment insecurity that have been studied separately in developmental and cross-cultural psychology, but less frequently in joint research. Seven hypotheses were formulated in the study. The first two hypotheses were strictly about psychological control including: (1.1) mean level differences in psychological control will be higher for more collectivistic countries and (1.2) positive associations with psychological control and attachment insecurity across cultures, but more strongly in individualistic countries. Hypothesis 1.1 was not able to be explored due to lack of scalar invariance in the Psychological Control Scale. Hypothesis 1.2 was partially supported with positive relations for psychological control and attachment avoidance; and partially supported from a cultural perspective as attachment avoidance and psychological control was moderated by culture.

The following four hypotheses were about the dimensions of parental reflective functioning and attachment insecurity. The first two hypotheses in the reflective functioning subsection compared means including: (2.1) mean level differences in pre-mentalizing will be higher in more collectivistic countries and (2.2) mean level differences of interest and curiosity in mental states and certainty about mental states will be higher in more individualistic countries. Hypothesis 2.1 was supported with the lowest pre-mentalizing in the Netherlands (an individualistic culture), but the hypothesis was not supported with the highest pre-mentalizing in Poland. Furthermore, hypothesis 2.2 was not supported.

The next two hypotheses in the reflective functioning subsection explored cultural differences including: (2.3) positive associations with pre-mentalizing and attachment insecurity across cultures, but more strongly in individualistic countries and (2.4) negative associations

with interest and curiosity in mental states as well as certainty about mental states and attachment insecurity across cultures, but more strongly in collectivistic countries. Hypothesis 2.3 was partially supported with positive associations between pre-mentalizing and attachment anxiety across cultures, and partially supported from a cultural perspective as the path of attachment avoidance and pre-mentalizing was moderated by culture. Hypothesis 2.4 was also supported with negative associations between dimensions of reflective functioning, but not supported from a cultural standpoint.

The last hypothesis (3.1) explores reflective functioning as a mediator in relation to psychological control and attachment insecurity. Hypothesis 3.1 was partially supported with three different reflective functioning paths mediating relations between psychological control and attachment anxiety or avoidance. Overall, the study presents significant, though mixed, findings related to the relations between parental psychological control, parental reflective functioning, and attachment insecurity that can serve as a basis for future research connecting the constructs. The discussion of results will be organized around three general findings related to cultural universals, cultural specificities found in cultural groups analyzed in the present study, and the mediating role of reflective functioning in relations between psychological control and attachment insecurity.

#### **4.1 Interest and curiosity in mental states and link between psychological control and pre-mentalizing as invariant across studied cultures**

##### **4.1.1 Interest and curiosity in mental states across cultures**

Interest-curiosity in mental states did not differ across the studied cultures. However average scores on this subscale have been reported by the scale's authors as most adaptive and associated with emotional availability and attachment security (Luyten, et al., 2017). The lack of

cultural differences in the interest-curiosity in mental states subscale, a key subscale for classifying parental reflective functioning, could potentially reveal the general importance for all mothers to use mentalizing. This may support an intermediate perspective which was proposed by Aival-Naveh and colleagues (2019) in their meta-analysis. An intermediate perspective situates the parental reflective functioning and attachment link on a continuum that ranges from culturally universal to culturally dependent; therefore the basic processes are similar across cultures, but culture has the possibility to influence their presentation. This supports the notion that mentalizing capacities, specifically those involving interest and curiosity in mental states, could be important for mothers across cultures. Additionally, this finding also supports a developmental perspective, namely the positive relations between parental reflective functioning and attachment security (Fonagy et al., 1991). This pinpoints a universal need for mothers, in the studied cultures, to be interested and attempting to understand their child's mental state for a secure attachment to be attained.

#### **4.1.2 Similarity between psychological control and pre-mentalizing**

Throughout analyses, the reflective functioning dimension of pre-mentalizing modes was very strongly correlated with the psychological control scale in the entire sample and in each cultural group. From a theoretical perspective pre-mentalizing is not a component of mentalizing, but rather accounts for the period right before mentalizing begins. Therefore, previous research has found that when parents do not use pre-mentalizing it leads to attachment security (Luyten, et al., 2017). The current work also follows previous findings as it has evidenced positive associations between pre-mentalizing and child's attachment insecurity. Similarly, research on parental psychological control has found positive associations between parental psychological control and attachment insecurity (Barber, 1996).

While the similarity between pre-mentalizing in reflective functioning and parental psychological control has rarely been studied in previous research, items from both scales have similarities. For example, item 4 (“my child cries around strangers to embarrass me”), item 10 (“my child sometimes gets sick to keep me from doing what I want to do”), and item 13 (“when my child is fussy he or she does that just to annoy me”) from the pre-mentalizing modes subscale highlight blame and criticism toward the child. In these items the parent rationalizes that the child is crying, sick, or fussy just to spite the parent. This also invalidates the child from having their own needs and it is similar to the manipulation, blame, and criticism that are found in parental psychological control (Barber, 1996).

Meanwhile, in the Psychological Control Scale, item 7 (“I blame him/her for family members’ problems”), and item 8 (“I often bring up his/her past mistakes when I criticize him/her”) also reveal criticism and blame. However, not all items from these scales are similar. The items on the pre-mentalizing modes subscale also highlight uncertainty that the parent has about their child’s mental state, whereas the Psychological Control Scale directly addresses parenting strategies that are meant to constrain, invalidate, or criticize the child. Overall, a deeper analysis of these constructs is needed in future research to better understand their similarities and differences, but there is preliminary support for their similarities.

## **4.2 Cultural variation in levels and effects of psychological control, pre-mentalizing, and certainty about mental states**

### **4.2.1. Relations between psychological control and attachment insecurity**

Positive associations between parental psychological control and attachment insecurity in the entire sample follow previous findings by Barber (1996) and support the notion that parental psychological control is a parenting insensitivity that may lead to attachment insecurity.



However, from a cultural perspective, the path of attachment avoidance and psychological control was moderated by culture, with Poland's link being the highest. These results follow Güngör and Bornstein's (2010) study that had a similar finding, except on a sample of Belgian and Turkish fathers where attachment avoidance was also related to psychological control only for Belgians. The current findings highlight a difference that is present in the Polish sample. Poland had significant positive associations between parental psychological control and attachment anxiety and attachment avoidance, which were not present in the Netherlands or Turkey. This significant finding partially supports hypothesis 1.2, which theorizes about positive associations with psychological control and attachment insecurity across cultures; but more strongly in individualistic countries.

However, the positive associations in Poland are not fully explained through individualism and collectivism because the Polish culture falls between the Netherlands and Turkey on most cultural measures (Hofstede, 2011). Rather than using individualism-collectivism measures to culturally distinguish Poland from Turkey and the Netherlands, it may be more appropriate to use a measure such as indulgence. Poland's indulgence score is the lowest (score of 29) out of the three studied cultures, implying that the Polish culture may be more controlling and restrained, including psychological control. This may reveal that Polish children are raised in a context where they are not allowed to do whatever they please and children are expected to behave a certain way, according to their parent's rules. Such rigid norms could also be explained through power distance. Poland has a high power distance (score of 68) and this could promote hierarchy, strict obedience, and rules in the society's functioning.

Nevertheless, there could be a cultural variation in Poland as it has been described as a rapidly developing society. Poland has been shown to have fast-paced societal changes including

democratization, social campaigns, and shifts in parenting roles (Wejnert & Djumabaeva, 2005). Additionally, Poland also has a moderate tightness score of 6, and this could indicate that there are some social norms to be followed, but it is not as strict as in other cultures (score of 9.2 in Turkey). It is possible that these changes have not yet fully infiltrated into all aspects of society and that there is more change to be expected in Poland's future.

#### **4.2.2 Pre-mentalizing across cultures**

The current work revealed that the parental reflective functioning subscale of pre-mentalizing modes had significant mean differences between all three cultures. The differences are partially in support of hypothesis 2.1 which postulated that pre-mentalizing would be higher in collectivistic countries (Turkey) than individualistic countries (Poland and the Netherlands). In support of the hypothesis, the Dutch sample had the lowest pre-mentalizing modes score. However, Poland scored the highest in pre-mentalizing modes, and according to the proposed hypothesis, a more collectivistic culture, such as Turkey, would be expected to score higher in pre-mentalizing. While collectivism and individualism differences cannot explain this variation, a different line of cultural support could also be with the dimensions of indulgence and power distance. In the same way that Poland had the highest psychological control and cultural moderation for the path of psychological control and attachment avoidance, pre-mentalizing may follow a similar trend.

However, culture moderated the path of pre-mentalizing and attachment avoidance in the Dutch sample, supporting hypothesis 2.3. This hypothesis predicted that pre-mentalizing will be positively associated with attachment insecurity more strongly in individualistic cultures. In the Dutch socialization context, the Netherlands is a society that is rather individualistic (high score of 80), indulgent (high score of 68), and loose (low score of 3.3 on tightness), according to

Hofstede (2011) and Gelfand et al. (2011). This reveals that Dutch mothers are typically allowing their children to be autonomous and have more lenient parenting, without as much rigidity and control as other cultures. Hypothesis 2.3 is also supported by the cultural fit hypothesis (Friedman et al., 2010), which would predict pre-mentalizing (indicative of a lack of parental reflective functioning) to be non-normative in individualistic cultures and result in attachment insecurity. The use of pre-mentalizing was expected to be non-normative for Dutch mothers, consequently when Dutch mothers used pre-mentalizing the outcome was child's attachment avoidance. Thus, Dutch parents who do not adhere to these norms may have a parent-child relationship that results in the child being more distant, or avoidant, from the parent.

#### **4.2.3 Certainty about mental states across cultures**

Furthermore, hypothesis 2.2 proposed that the dimension of certainty about mental states would be higher in more individualistic countries. Findings revealed significant mean differences between all three cultures, but do not support hypothesis 2.2. The Dutch group had the lowest score in certainty about mental states, compared to the Polish and Turkish samples. As the most individualistic cultural group explored in this study, it was expected that the Netherlands would have higher scores in the certainty about mental states subscale. Albeit unusual, Dutch parents are also reported to be guided by scientific knowledge and “self-strength” (Knijn & Hopman, 2015). Therefore it is possible that Dutch mothers may take caution in assuming what their children think or feel and perhaps take a more straightforward approach to communicating with their child.

While Dutch mothers might be more careful in assuming their child's mental state, Turkish mothers surprisingly had the highest scores in certainty about mental states. This finding is not in support of hypothesis 2.2 and reveals that mentalizing, indicated by certainty about

mental states, may actually be higher in some collectivistic countries than in individualistic countries. Turkey, is distinguished as the most collectivistic in this study (score of 37; Hofstede, 2011), and it was proposed that mentalizing may not be as valued or used in collectivistic cultures. However, it seems that collectivistic countries are relying on mentalizing, but perhaps in a different manner. For example, after their meta-analysis Aival-Naveh et al. (2019) indicated that collectivistic cultures may have less self-mentalizing and rather attribute to external factors. Following these results, it may show that parental reflective functioning is a form of mentalizing that involves reflecting about more than just one's self. In the mother-child relation, the mother's own state is only one component of mentalizing, and a large component is in understanding the child's state, potentially activating an external source, something that is valued in collectivistic cultures.

#### **4.3 Mediating role of reflective functioning in relations between psychological control and attachment insecurity**

The current study is among few to test reflective functioning as a mediator between parental psychological control and attachment insecurity, notably in a diverse sample from Poland, the Netherlands, and Turkey. Mediation analyses partially supported hypotheses that reflective functioning is a mediator between psychological control and attachment insecurity. Testing the entire mediation model, however, did not garner mediation effects, rather an individual analysis of each subscale of reflective functioning revealed significant effects.

For one, maternal pre-mentalizing fully mediated relations between parental psychological control and child attachment anxiety. This might indicate that pre-mentalizing is used in order to reach psychological control and attachment anxiety. However, controlling mothers are typically unable to mentalize, meaning that this may be a psychological way of

controlling. Notably the path to attachment anxiety is explained by 2 highly negative indicators: pre-mentalizing and psychological control. The effect of this relationship is positive and strong, but the role of pre-mentalizing in relation to psychological control and attachment insecurity is one that could benefit from further research.

On the other end, certainty about mental states and interest and curiosity in mental states were found to partially mediate relations between parental psychological control and child attachment avoidance. This signifies that when mothers are psychologically controlling, and use certainty about mental states or interest and curiosity in mental states, then the outcome in children is to avoid closeness, as represented by attachment avoidance. Therefore, mothers are able to use their cognitive capacities to understand their child; the worry that is associated with pre-mentalizing and anxiety relations is not present. However, the use of certainty about mental states or interest and curiosity in mental states paired with psychological control decreases the child's attachment avoidance. As a result, maternal reflective functioning buffers the relationship between maternal psychological control and child's attachment avoidance.

Additionally, the role of reflective functioning as a mediator in the current work adds to previous findings regarding intergenerational transmission of attachment by Slade et al. (2005). The transmission of attachment has also been thoroughly researched in the field of development, and a meta-analysis by Verhage et al. (2016) also revealed the intergenerational transmission of attachment in a broader sample. The current study also specifies mechanisms of transmission, distinguished by the subscales of parental reflective functioning. Furthermore, these results are in agreement with previous works that found reflective functioning to be a mediator, though in different contexts such as, maltreatment and psychopathology. Namely, previous studies revealed that parental mentalization is a buffer for developing a hostile-parent child relationship

in the case of families with ADHD (Gershy & Gray, 2018). Additionally, it was found that reflective functioning is a mediator between early maltreatment and aggression (Taubner, et al., 2016). While these preliminary studies reveal parental reflective functioning as a mediator, more research needs to be done to discover the strength of these relations, specifically in relation to psychological control. Furthermore, if parental reflective functioning has the strength to mediate relations in the total sample, it could be a meaningful key to intervention programs for parents across cultural groups.

#### **4.4 Practical and future implications**

This study distinguishes itself from others by focusing on a cross-cultural sample and incorporating an ambiguous construct, reflective functioning, which has garnered much attention under various mixed labels. Although reflective functioning has been researched before, there were also few studies focusing on cross-cultural reflective functioning and the current study's age demographic of children aged 8 through 12. This is an important period of development as it is often a transition from childhood and into adolescence, thus mother-child relationships are particularly pertinent and prone to changes. Focusing on a cross-cultural sample also adds to the body of research on constructs that were developed in Western societies, which may function similarly, or differently, in other contexts. This study revealed that culture does moderate selected relations between parental reflective functioning and parental psychological control, thus it may be important to develop psychological interventions that do include these concepts and take culture into consideration.

#### **4.5 Limitations**

Careful measurement testing and factor analysis was conducted in order to ensure that the scales had proper structure and could be analyzed across the culture groups. However, even with

rigorous methodological testing, scalar invariance could not be established for the Psychological Control Scale and only partial scalar invariance could be established for the Parental Reflective Functioning Questionnaire after releasing equality constraints on six items. Therefore mean level differences could only be analyzed within the Parental Reflective Functioning Questionnaire (though with caution as only partial scalar invariance was established). On the one hand measurement invariance testing limits hypothesis testing, but on the other hand it ensures the reader that testing has been meticulous and measures for analyses have been very well considered.

Furthermore, the pre-mentalizing modes dimension was also very strongly correlated with the psychological control scale in the entire sample and in each cultural group. This strong association may have made pre-mentalizing function similarly to psychological control in data analysis and testing the two in one model may have led to redundancies.

Additionally, self-report measures limit conclusions as it is subjective to the individual. Though, factor analyses played a large role in ensuring that scales were appropriate and items that were performing in an unpredictable manner were carefully inspected and modified or omitted. Nevertheless, it is probable that mothers and children may have had their own unconscious biases when participating in the study.

Moreover, this study is only a part of the wider project *Combination of emic and etic approach to parenting and attachment* (CEE-PaAtt) which uses both emic and etic measures. However the current work only utilized etic measures, or scales that are dominantly used in Western cultures. This means that the measures, though translated and thoroughly tested for measurement invariance, have not been initially developed in the native languages of the respective countries. Furthermore, the cultural groups in this study have been distinguished

through country, not through another measure of culture. Although, distinctions in these groups are highlighted from previous cultural research, notably Hofstede's (2011) dimensions of cultures, Gelfand et al.'s tightness scores (2011), and Thomson et al.'s relational mobility scores (2018).

Nevertheless, although finding significant differences is a goal of many researchers, Poortinga (2015) has underlined that this approach can be a limitation, particularly in cross-cultural research. While there is a drive to find differences it may also be the case that cultural distinctions are not notably present, or that there are major differences within a culture itself, not only between cultures.



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## Attachments

### 6.1 Parental Reflective Functioning Questionnaire Parental Reflective Functioning Questionnaire – PRFQ (Luyten, Mayes, Nijssens, & Fonagy, 2017)

Listed below are a number of statements concerning you and your child. Read each item and decide whether you agree or disagree and to what extent.

Use the following rating scale, with 5 if you totally agree; and 1 if you totally disagree. The midpoint, if you are neutral or undecided, is 3.

1 = totally disagree; 2 = rather disagree; 3 = neutral; 4 = rather agree; 5 = totally agree

1. The only time I'm certain my child loves me is when he or she is smiling at me.
2. I always know what my child wants.
3. I like to think about the reasons behind the way my child behaves and feels.
4. My child cries around strangers to embarrass me.
5. I can completely read my child's mind.
6. I wonder a lot about what my child is thinking and feeling.
7. I find it hard to actively participate in make believe play with my child.
8. I can always predict what my child will do.
9. I am often curious to find out how my child feels.
10. My child sometimes gets sick to keep me from doing what I want to do.
11. I can sometimes misunderstand the reactions of my child.
12. I try to see situations through the eyes of my child.
13. When my child is fussy he or she does that just to annoy me.
14. I always know why I do what I do to my child.
15. I try to understand the reasons why my child misbehaves.
16. Often, my child's behavior is too confusing to bother figuring out.
17. I always know why my child acts the way he or she does.
18. I believe there is no point in trying to guess what my child feels.

## **6.2 Psychological Control Scale – PCS (Barber, 1996)**

1 = totally disagree; 2 = rather disagree; 3 = neutral; 4 = rather agree; 5 = totally agree

1. Sometimes, I change the subject, whenever my child has something to say.
2. Sometimes, I finish my child's sentences whenever she/he talks.
3. I often interrupt her/him.
4. I always know what she/he is thinking or feeling.
5. I tell him/her how he/she should feel or think about things all the time.
6. I always try to change how she/he feels or thinks about things.
7. I blame him/her for family members' problems.
8. I often bring up his/her past mistakes when I criticize him/her.

### **6.3 Experience in Close Relationships Scale – Revised for Child – ECR-RC (Brenning, et al., 2011)**

1 = totally disagree; 2 = rather disagree; 3 = neutral; 4 = rather agree; 5 = totally agree

1. I'm afraid that my mother will stop loving me.
2. I do not like to tell my mother how I really feel.
3. I'm worried my mother might want to leave me.
4. It's easy for me to tell my mother what I think and what I feel.
5. I'm worried that my mother does not really love me.
6. It is difficult for me to admit that I need help from my mother.
7. I am worried that my mother does not love me as much as I love her.
8. It's good for me when I feel close to my mother.
9. I would like my mother to love me as much as I love her.
10. It is not easy for me to tell my mom about myself.
11. I often worry about my relationship with my mother.
12. I prefer not to be too close to my mother.
13. When I do not see my mother, I'm worried that she may stop thinking about me.
14. I do not feel well when my mother hugs me too much.
15. When I show my mother that I love her, I'm afraid she does not love me as much as I love her.
16. It's easy for me to feel close to my mother.
17. I'm worried that my mom would leave me.
18. It's not difficult for me to feel close to my mother.
19. The things my mother says and do make me doubt myself.
20. Usually, I tell my mother about my problems and worries.
21. I'm not worried that my mother would leave me.
22. When I feel bad, my mother talks to me.
23. I feel that my mother does not want to approach me as much as I would like it.
24. I'm telling my mother almost everything.
25. Sometimes I think that my mother's feelings change for me without a reason.
26. I talk to my mother about many things.
27. I'm afraid I want to be too close to my mother and she does not like it.
28. I get nervous when my mother wants me to share her secrets with her.
29. I'm afraid that my mother would stop loving me if she found out what I really feel and think.
30. It's easy for me to ask my mother for help.
31. I get angry that my mother shows me too little love and support.
32. It's easy for me to rely on my mother.
33. I'm afraid that my mother thinks about me less than about other children.
34. It's easy for me to show my mother that I love her.

35. I believe that my mother pays attention to me only when I make a fuss.
36. I feel that my mother understands me well.