THE DEVELOPMENT OF TRUST JUDGEMENTS

ABOUT LIE-TELLERS DURING MIDDLE CHILDHOOD

A Master's Thesis

by

ASLI YASEMİN BAHAR

Department of Psychology

İhsan Doğramacı Bilkent University

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To my family, chosen and all

THE DEVELOPMENT OF TRUST JUDGEMENTS
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ASLI YASEMİN BAHAR

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I certify that I have read this thesis and have found that it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts in Psychology.

Asst. Prof. Dr. Jedediah Wilfred Papas Allen
Supervisor

I certify that I have read this thesis and have found that it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts in Psychology.

Asst. Prof. Dr. Hande Ilgaz
Examining Committee Member

I certify that I have read this thesis and have found that it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts in Psychology.

Prof. Dr. Sibel Kazak Berument
Examining Committee Member

Approval of the Institute of Economics and Social Sciences

Prof. Dr Refet S. Gürkaynak
Director

Y. Tarık Kara

ABSTRACT

THE DEVELOPMENT OF TRUST JUDGEMENTS

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Bahar, Aslı Yasemin

MA. Department of Psychology

Supervisor: Asst. Prof. Dr. Jedediah Wilfred Papas Allen

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This thesis investigates children's trust evaluations for lie-tellers across three ages (7-,9-, and 11-year-olds) and a number of social situations. A total of 145 primary school children were tested on a Lie-Telling Evaluation Task (LET), created by the researchers, and classical interpretive ToM tasks. Lie-Telling Evaluation Task (LET) included eight short stories in which the protagonist lied. Half of the stories involved a culturally-appropriate lie, whereas the other half showcased a self-oriented lie: The participants were asked to rate their reliability and emotional trust towards the protagonist. Parents' general parenting styles and lie-telling behavior towards their children for instrumental purposes during preschool was investigated. The analysis focused on children's trust evaluations on three lie scenarios: avoiding punishment, avoiding shame, and being polite. Results indicated that children reported all lie-tellers as untrustworthy, yet lie scenario had a significant effect on trust

judgements. There was also an interaction of lie scenario and age such that children's trust evaluations for a protagonist lying to avoid punishment and to be polite decreased with age while children's trust evaluations for a protagonist lying to avoid shame increased. Children's total ToM abilities, parenting styles and parents' instrumental use of threat lies were not related to children's trust for the above three scenarios. However, parents' instrumental use of threat lies towards their children indirectly affected the influence of children's overall ToM performance on their trust evaluations for lie-tellers lying to avoid punishment.

Keywords: trust, lie-telling, interpersonal trust, trust evaluations, lie-teller evaluations, theory of mind

ÖZET

İLKOKUL ÇAĞINDAKİ ÇOCUKLARIN YANILTICI İFADE KULLANANLARA

KARŞI GÜVEN DEĞERLENDİRMELERİNİN GELİŞİMİ

Bahar, Aslı Yasemin

Yüksek Lisans, Psikoloji Bölümü

Tez Danışmanı: Dr. Öğretim Üyesi Jedediah Wilfred Papas Allen

Aralık 2020

Bu tez 7, 9 ve 11 yaşlarındaki çocukların birçok farklı sosyal durumda yalan söyleyen kişiler hakkındaki güven değerlendirmelerini incedi. Toplam 145 ilkokul öğrencisi test edildi. Araştırmacıların geliştirdiği Yanıltıcı İfade Değerlendirme Görevi'nin yanı sıra dört adet zihin kuramı görevi kullanıldı. Yanıltıcı İfade Değerlendirme Görevi, yanıltıcı ifade kullanılan sekiz ayrı senaryo içerdi. Senaryoların yarısı toplumsal olarak uygun, diğer yarısı ise kişiye dönük yalanlar olarak kategorize edildi. Senaryoların okunmasının ardından, çocuklar yanıltıcı ifadeyi kullanan ana karakter için güvenilirlik ve duygusal güven soruları üzerinden güven değerlendirmelerinde bulundu. Ebeveynlerin genel ebeveynlik stillerini, ve çocuklarına istedikleri davranışı elde etmek için okul öncesi dönemde ne sıklıkla yalan söylediklerini ölçen birer adet anket uygulandı. Analizde Yanıltıcı İfade Değerlendirme Görevi içerisinden "cezadan kaçmak, utançtan kaçmak, ve kibar olmak" için yalan söylenen üç senaryoya odaklanıldı. Tüm ana karakterler farklı

derecelerde güvensiz olarak değerlendirilse de senaryo türünün çocukların güven değerlendirmesi üzerinde istatistiksel olarak anlamlı bir etkisi vardı. Yaş ve senaryo türü arasında da bir etkileşim görüldü. Çocukların cezadan kaçmak için ve kibar olmak için yalan söyleyen ana karakterlere olan güven değerlendirmelerinin yaş ile düştüğü, utançtan kaçmak için yalan söyleyen ana karakterlere olan güven değerlendirmelerinin ise yaş ile arttığı görüldü. Çocukların zihin kuramı becerileri, ebeveynlerin ebeveynliklik stilleri veya tehdit içeren amaca dayalı yalanlar kullanım sıklıkları çocukların güven değerlendirmeleri ile anlamlı bir korelasyon göstermedi. de güven Ancak çocukların zihin kuramı becerileri, ebeveynlerin tehdit içeren yalan kullanma sıklıklarının çocukların cezadan kaçmak için yalan söyleyen ana karakterler için güven değerlendirmeleri üzerindeki etkisinde dolaylı etkisi olduğu görüldü.

Anahtar Kelimeler: güven, kişilerarası güven, güven değerlendirmeleri, yalan, yanıltıcı ifade ahlak, zihin kuramı

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Children are taught that lie-telling is not desirable or appropriate behavior, and are

socialized to evaluate lie-telling negatively (Lavoie, Leduc, Crossman & Talwar,

2016). However, lie-telling is an integral part of social life, performed by everyone.

Consequently, during their development, children are faced with the task of

distinguishing between and making evaluations about different types of situations in

which people lie. Said evaluations include evaluations about the lie itself, as well as

the people who tell them. While some research has investigated the role of parental

socialization and cognitive development on children's lie-telling *behavior* (Talwar,

Gordon & Lee, 2017; Popliger, Talwar & Crossman, 2011), its role on children's lie-

telling *evaluations* have been studied much less. Furthermore, research on children's

evaluations have focused primarily on children's evaluations on the *appropriateness*

of lies rather than the *trustworthiness of the lie-tellers*. (see Cheung, Chan & Tsui,

2016; Cheung, Siu & Chen, 2015; Levine & Schweitzer, 2015). Research also

seldom included variety in types of lies, often only comparing just two different

scenarios involving lie-telling, (Cheung, Siu & Chen, 2015; Levine & Schweitzer,

2015) whereas there are many factors influencing how people judge lie-tellers. Our

research was conducted with the idea of filling these gaps, among others, by focusing

on children's evaluations on the trustworthiness of the lie-tellers for eight different scenarios.

The current manuscript will begin with a discussion on interpersonal trust and its nuanced relationship with lie-telling. Then, it will explore socialization factors, namely parental and cultural socialization, that can potentially influence children's trust evaluations about lie-tellers. The role of parenting styles and parenting behavior will be investigated as factors influencing children's trust evaluations about lie-tellers. Theory of mind (ToM), which can be broadly defined as the ability to understand the mental and psychological states (e.g., belief, knowledge, desire) of others (Miller, 2016) will also be discussed as a cognitive factor with relation to children's ability to make differentiated trust evaluations for different lie-tellers. Finally, the current study, which focuses on the development of differentiated trust evaluations for lie-tellers during the primary school years, and its hypotheses, will be listed.

1.1 Interpersonal Trust

Trust research has identified interpersonal trust as having two main components; emotional trust and reliability trust (Rempel, Holmes & Zanna, 1985; Rotenberg et al., 2005). Emotional trust refers to "reliance on others to refrain from emotional harm", or the expectation that one can be themselves around someone who will also be honest and will not knowingly embarrass, judge, or hurt them in any other way (Rotenberg et al., 2005). Emotional trust includes many aspects. Some factors of emotional trust are formed around feeling valued and include that the person(s)

trusted will listen to, spend time with, and validate the feelings of oneself (Rotenberg et al., 2005). A significant component revolves around reciprocity of honesty and requires the trusted person(s) to neither tell lies nor withhold important information. Another component is emotional safety, which refers to feeling secure that a trusted person(s) will not knowingly hurt them, especially by using the personal information one has shared with them in the past. Another factor is related to the feelings of allyship, which is related to outside relationships. This factor includes expectations that one will not be harshly criticized by the trusted person(s), especially in front of others. It also includes that the trusted person(s) will keep one's secrets private and will not tell lies about them to others.

Research shows that there are gender differences on emotional trust. For example, while female children are more concerned with reciprocity of honesty than male children whereas the opposite is true for allyship, meaning male children value how they are represented in outside relationships more compared to female children (Johnson-George & Swap, 1982). It is important to note that while the weights given to each factor and even the factors themselves seem to show differences between male and females, both male and female individuals share the emotional component of trust (Johnson-George & Swap, 1982).

In contrast to emotional trust, reliability trust refers to how consistently dependable an individual is seen to be (Rotenberg et al., 2005). It focuses on whether one is trusted to follow through on their promises or have valid reason as to why, on the rare occasion, they cannot. Some theoretical subcategories that can be created based on previous scales (Rempel et al., 1985, Rotenberg et al., 2005) are: trusting you can

3

rely on the other person at a time of need and/or on issues that are significant to oneself, trusting that person will keep their promises, and trusting that that person cares about your well-being and will act for your best interest. Thus, one way it can be operationalized is by measuring one's level of trust that someone will keep a promise (Fu et al., 2015; Johnson-George & Swap, 1982).

1.2 Interpersonal Trust and Lie-Telling

At a first glance, lie-tellers can be seen as untrustworthy since lack of deception, full disclosure, and being an ally are components of emotional and reliability trust. Being disrespectful can also be seen as an untrustworthy behavior because someone being disrespectful can be seen as a sign that: a) that person cannot be relied to care for your best interest; b) that they are not validating positive feelings about yourself; and/or, c) that they are hurting you, potentially on purpose, all of which are components of interpersonal trust. However, it is well known that during social interactions, people can lie not to be disrespectful but to keep others from emotional harm, e.g., to be modest, polite, respectful and so on (Cheung et al., 2016; Levine & Schweitzer, 2015).

Since people can prefer to tell deceitful statements to or withhold information from someone precisely because they believe they are looking out for the best interest of that person, a friction occurs between honesty and trust: Being truthful and keeping others from emotional harm are sometimes at odds. For example, we can say we like someone's art piece/performance to be supportive and kind, when we do not particularly care for it. Or, we can choose not talk about said art piece or

performance if we do not have anything nice to say. Thus, as adults, we can comprehend that deception and trust are not mutually exclusive and some lies are less damaging or not at all damaging to our trust levels in our interpersonal relationships (Levine & Schweitzer, 2015). However, knowing how a situation should influence trust requires one to have a value system to compare that situation to, which is influenced by their culture.

1.3 Socialization

Observing and engaging in social interactions allows children to learn about the values, norms, and rules of their culture. One theory entitled the ecological systems theory posits that the individual, their immediate environment as well as their major settings and overriding situational patterns of the culture influence each other in bidirectional relationships (BronfenFrenner, 1977). Thus, both the immediate surroundings and major settings (e.g., their home) and the broader culture in general will influence children's values. This process is referred to as socialization (Popliger et al., 2011). Through socialization, children are educated about the acceptability and desirability of varied behaviors within their culture. They will also be educated, both directly and indirectly, on the trustworthiness of individuals performing these behaviors – including lie-telling behaviors.

1.3.1 Parental Socialization

Parents are often the primary source of social interaction in their children's early years; thus, they have a significant influence on how their children are socialized. Parents introduce their children to judgements about social behaviors such as lie-

telling from an early age, either directly or indirectly (Berkowitz & Grych, 1998).

Parenting practices refer to how parents directly communicate their socialization

goals with their children. Most directly, parents can talk openly with their children.

In early childhood, most parents teach that all lie-telling is unacceptable and thus

young children rate all lies as equally unacceptable as Loavie and colleagues (2016)

report 67% percent of parents report that they teach their children lying is never

acceptable.

However, parents can also instruct children about when they expect them to be

honest or deceitful, and even explicitly encourage children to tell truthful or deceitful

statements in specific situations. Research finds around half parents explicitly tell

their children that lie-telling is acceptable when it benefits others (Lavoie et al.,

2016). For example, a parent asking their children to tell a lie to be polite, e.g.,

saying "You should tell your aunt you liked her cooking" when they know the child

disliked it" can suggest to the child that lie-telling for politeness reasons is

acceptable, perhaps even expected, and that lie-telling for politeness purposes will

not negatively influence their trustworthiness as strongly as lies told in other contexts

that are not explicitly encouraged.

Parenting styles refers to the overall parenting behavior of parents. It is measured

along two dimensions (demandingness/control and responsiveness/warmth), creating

four distinct styles (authoritative, authoritarian, permissive, neglectful) (Demir &

Şendil, 2008). Two studies showed that children with parents who scored higher on

authoritativeness were more likely to tell prosocial lies than tell the truth compared to

children whose parents scored lower (Popliger et al., 2011; Talwar et al., 2017). This

could be due to authoritative parents being more likely to openly discuss behaviors and support desirable ones, "prosocial" lies perhaps being part of these desirable behaviors. Authors argue that the results are consistent with the knowledge that authoritative parents are likely to value social order and welfare but disapprove disorder and harm; maybe being more open to telling "white" lies for the benefit of others but not necessarily being open to all lie-telling behavior. A third study found that 3-year-old children whose parents scored high in control, measured by high monitoring and expectance of obedience, were less likely to tell an "antisocial" lie about their own behavior. These results suggest that general parenting practices can have an effect on when children tell lies. Since children's lie-telling as well as evaluations of lies are all social phenomena that are correlated with each other (Lee, 2013; Popliger et al., 2011; Talwar, Yachison & Leduc, 2015), we argue parenting practices not only have an influence on children's lie-telling behavior, but can also have a significant effect on how children evaluate lie-tellers as well.

While parenting styles may be one influence on children's lie evaluations, another notable influence on how children learn about the appropriateness of lies is to observe the characteristics of situations in which their parents are deceitful. Learning by observing others, called social modelling, is an integral part of child learning in all areas of development, including lie-telling behavior and evaluations (Heyman et al., 2009). Whether a parent is more likely to lie to avoid punishment, e.g., a traffic ticket or a reprimand from their superior at work, or to be modest, e.g., to lie about the price of an expensive purchase, will create an impression on their children. Heyman and colleagues (2009) showed that parents who had at least 1 child over the age of three admitted to telling lies to their children, and children reported being

aware that their parents make deceitful statements, suggesting that parents' lie-telling behavior can be an important factor in how children understand and evaluate lies.

Over time, the combined information children obtain through their observations will lead them to make connections between their parent's behavior and the cultural norms, which will then help them to make assumptions about the culturally-appropriate evaluations about being deceitful in different situations. Finally, children can also observe how their parents react to their own lie-telling behavior. If a parent congratulates their child for keeping a surprise party a secret, children can generalize that being deceitful in this context will not negatively affect their trustworthiness, and may even affect it positively. Consequently, they are less likely to evaluate others who are deceitful in similar situations as untrustworthy. For example, if a child receives punishment for being deceitful to their teacher to improve their grade, but praise for falsely stating to their neighbor that they like their cooking, they can generalize that someone lying for others' benefit can be trustworthy but someone lying for one's own benefit is maybe less untrustworthy. It can be argued that, since evaluations of lies and lie-tellers are expected to be re related to each other, and since parenting styles is canonically known to influence children's moral understanding in general and children's lie evaluations more specifically (Fu et al., 2007), children's lie-evaluations of trust could also be influenced by parents' lie-telling behavior.

1.3.2 Cultural Socialization

Lie-telling is a social phenomenon, and thus lie-telling behaviors and evaluations are both subject to influence by cultural expectations (Heyman et al., 2014). The socialization process, in which cultural information is transmitted, is a part of all cultures. However, what is socialized can vary greatly across cultures due to differences in norms, values, beliefs, and expectations. For example, one study looked at shame as an additional cultural factor influencing primary school children's lie-telling evaluations (Ma et al., 2011). Results indicated that children rated white lies told in public less negatively compared to white lies told in private, as public negative comments can reduce one's social standing. Results further indicated that older children (11-year-olds) rated a statement more negatively when it led to the lie-recipient to lose social standing, regardless of the statement's truth value. These results show us that by primary school, children are able to consider cultural values such as shame when making judgments about the (in)appropriateness of telling lies.

Cultures are often put in a binary categorization based on their value systems and practices (Kağıtçıbaşı, 1997). While individualistic cultures value autonomy, individuality and independence over group harmony, group harmony, cohesion and interconnectedness are put above in collectivistic cultures (Fu et al., 2007). Canada is often considered an individualistic country whereas China is considered to have a collectivist culture (Fu et al., 2007). While the "individualistic vs. collectivistic" categorization is helpful in understanding general social value systems of each culture, it can also be lacking significant nuances due to its broad, general perspective. Not all cultures labeled as collectivistic -or individualistic- share

9

extremely similar value structures. Factors beyond autonomy or group harmony are also significant parts of cultural values which can sometimes be overlooked.

Fu and colleagues (2007) studied cultural differences in children's understanding of lies in their study conducted with Chinese and Canadian primary school children, based in part on the above binary categorization. Children were read stories in which the protagonist told a truthful or deceitful statement, either to benefit the group and harm the individual (example statements) or vice versa (example statements). While children from both countries indicated negative ratings of acceptability about protagonists who lied to benefit themselves and harm the group, Chinese children evaluated protagonists who told a lie to benefit the group more acceptable compared to Canadian children. Chinese children also rated truth-tellers whose statement benefited the individual but harmed the group as less acceptable than Canadian children.

Based on how these cultures are positioned in terms of individualism vs. collectivism, we can say that children from each culture rated lie-tellers in line with their culture's values and expectations. To elaborate, since the Chinese culture values the benefit of the group more than the "Western" cultures, Chinese and Canadian children's evaluations of lie-tellers seem to be in line and reflect said cultural difference. These results suggest that the development of children's judgements of trustworthiness are likely to be influenced by -and show- cultural differences, thus creating the need to study the role of socialization in children's judgements of trustworthiness about lie-tellers. Socialization in turn gives indirect information

about the relevant culture as the values and norms socialized are expected to be influenced by culture as also assumed by Fu and colleagues (2001).

1.4 Theory of Mind

Making judgements about persons and/or situations first requires the ability to correctly understand situations. Cognitive development in general and ToM specifically play a significant role in children's ability to understand and evaluate events that involve other people. Theory of mind (ToM gives insight into an individual's beliefs, intentions, motives and more (Miller, 2016), which is all necessary to make judgements about people, including lie-tellers. Consequently, it is expected that ToM skills could play a role in making nuanced evaluations about lie-tellers.

Cheung, Siu and Chen (2015) adapted the second-order false-belief task from Sullivan and colleagues' study (1994) on children's evaluations of lies. First-order false belief tasks measure children's ability to understand that people may hold a belief that is incorrect. Second-order false-belief tasks are a measure of recursive thinking and measure the ability to report someone's beliefs embedded in another person's belief's (e.g., "Ayşe thinks that Ali believes the letter is under the blanket"). The task is utilized often due to being a measure of recursive thinking, which in ToM literature refers to the ability of having a mental state (e.g., false belief on the second character) as embedded in another mental state (e.g., belief of the first character). Results showed that there was a positive correlation between second-order false-belief understanding and sensitivity to lie intention, again suggesting that second-

order false-belief abilities in particular and ToM abilities in general may be necessary for children to distinguish between -and consider- situations. This is necessary for making nuanced moral evaluations, because lies are told in varied social situations that involve various intentions. Talwar and colleagues (2007) used the same second-order false-belief task to investigate its relation to children's lie-telling abilities and found a positive correlation between children's ToM performance and ability to maintain a lie. This can show that similar cognitive mechanisms may be at play when telling/maintaining and evaluating lies.

Hsu and Cheung (2013) investigated the role of interpretive theory of mind alongside the aforementioned classical theory of mind tasks in children's evaluation of lies. The study found that interpretive theory of mind abilities were related to children's evaluation of "white/prosocial" lies whereas performance in the classical theory of mind tasks played a role in children's evaluation of "strategic" lies (lies to benefit the self). Interpretive theory of mind is defined as understanding that our mental interpretations are a part of our reality; which can be tested by our ability to understand that stimuli can be ambiguous and thus be interpreted differently by different people, none of them being false, since people have a differing understandings of their world (Carpendale & Lewis, 2006, Lalonde & Chandler, 2002). It is argued to develop later than second order theory of mind during primary school years: e.g. performance in the ambiguous figures task is said to improve significantly until age 8, and Droodles even later, until age 11 (Lalonde & Chandler, 2002; Carpendale & Chandler, 1996). Thus, as also argued by Hsu and Cheung (2013), it is sensible that interpretive ToM is relevant to play a role in children's evaluation of "prosocial" lies as they are "less subject to verification against external

information" and as a result require an understanding that the mind plays a role in interpreting what we see. The current study argues that seeing the mind as an interpretive agent is also significant in children's trust evaluations about lie-tellers. This is because trust also does not have a linear, straightforward relationship where there is always one right or wrong: instead it considers multiple factors and viewpoints, thus, seeing the mind as an interpretive agent would be a significant step in evaluating our trust about lie-tellers in a nuanced and rounded way.

1.5 Developmental Trajectory

Gaining a comprehensive understanding of how trustworthiness of lie-tellers is evaluated requires investigating and comparing trustworthiness in not just a couple, but many varied lie-telling situations. Previous studies investigating judgments of appropriateness or trustworthiness of lies and lie-tellers (i.e., investigating how appropriate/trustworthy the participants find a certain lie or lie-tellers) often relied on binary categorizations (Fu et al., 2015; Levine & Schweitzer, 2015). Even looking at the broader pictures, most studies on lie telling and evaluation have manipulated lie scenarios most often by having a protagonist with "prosocial" motivations (e.g., lying to be respectful to elders and another protagonist with "selfish" motivations (e.g., lying to escape a punishment) (see Cheung et al., 2015; Cheung et al., 2016; Fu et al., 2015; Heyman et al., 2009). Unfortunately, the variety of situations involving lies have not been studied in more detail since most studies utilize one "prosocial" and one "selfish" lie. (see Fu et al.,2011; Popliger et al., 2011; Levine and Schweitzer, 2015). Moreover, there does not seem to be a clear consensus of how lies should be categorized. Studies have not only categorized lies as "selfish" or

"prosocial", but have used many different terms such as "antisocial, polite, altruistic, benevolent, helpful, harmful, benefiting others, white lies" to group lies based on the motivation of the lie-teller (Cheung et al., 2016; Xu et al., 2010; Fu et al., 2015; Fu et al., 2007; Levine and Schweitzer, 2015; Cheung et al, 2015). To create a clear categorical distinction between lies, two categories entitled "self-oriented" and "socially-oriented" lies were created for this study, and lie-tellers' motivations were grouped based on whether the intended benefit of the lie was oriented more towards benefiting the self (e.g., to boost own status) or towards other individuals (e.g., to instill positive emotions in a friend).

Previous research suggests that children's evaluations of lie appropriateness can be related to children's trust evaluations of lie-tellers, (Fu et al., 2015) yet there is not a direct relationship the relationship may not be straightforward as primary schoolers rated lie-tellers as trustworthy in some scenarios where they rated their lie as not appropriate. Instead, it can be argued that while they are related, these judgements show differences because what is considered varies. For example, authors argue that while they believe there is a clear connection between these evaluations, children consider the truthfulness of a statement when making a moral judgement about the lie, but consider the intention and/or who benefits from a statement more closely, alongside the truthfulness of the statement, when making trust judgements about a lie-teller. Cheung and colleagues investigated how primary school children and young adults integrated their perceived motivation of the lie-teller in their lie evaluations (2015). Lies were categorized as having either a goal to help others ("prosocial") or to help the self ("selfish"). Results indicated that while children did not rate any deceitful statement positively, children in all age groups rated prosocial

lies less negatively compared to selfish lies. As suspected, the effect of intentions on lie evaluations became more pronounced between 7- and 9-year-olds and between 9- and 11-year-olds such that 11-year-olds' ratings resembled that of young adults.

A study similarly investigated how primary school children used their perceived intention when making any trust evaluations, which includes trust evaluations about lie-tellers (Fu et al., 2015). Children trusted other-benefitting lie-tellers more compared to self-benefitting lie-tellers despite rating all lies negatively in terms of their morality. This suggests that preschool children make a distinction between the appropriateness of the and trustworthiness of the person such that they can trust a lie-teller despite not approving of the lie itself. This further intensifies the need to study children's evaluations of trustworthiness specifically, as a separate phenomenon.

Finally, a second study that directly investigated trust evaluations about lie-tellers was done by Levine and Schweitzer (2015), only with adults. The results indicated that the intentions of the lie-teller play a larger role than whether the statement is accurate or deceitful. Furthermore, the results indicated that adults find lie-tellers trustworthy when the lie is told for the benefit of others or the benefit of both the self and the other party. The current study investigates if and how children may develop similar views on trusting lie-tellers during middle childhood.

1.6 Current Study

Seven, 9- and 11-year-olds were decided to be most relevant for this study. Previous research with these age groups have found age differences in children's evaluations

about lie-tellers, indicating that moral understanding continues to develop during the primary school years (Cheung et al., 2015). Furthermore, previous research indicates that 11-year-old children reach an adult-like level of lie evaluations of appropriateness, suggesting that a similar timeline may be appropriate for evaluating the trustworthiness of lie-tellers in different types of situations (Cheung et al., 2015).

Our main aim was to investigate how children's trust evaluations about lie-tellers are influenced by their age as well as the type of situation in which the lie is told. We tested 7-, 9- and 11-year old's trust judgements about the protagonists of eight stories. Each story corresponded to a separate type of lie. Four of the stories included protagonists who used lies that were conceptualized as "self- oriented". These were lies for (1) avoiding punishment, (2) gaining status, (3) avoiding shame and (4) avoiding bullying. The other four scenarios included protagonists with socially-oriented lies for (5) being polite, (6) being respectful, (7) being modest and (8) instilling positive affect in the lie-recipient. We hypothesized that children will trust socially-oriented lie-tellers more than self-oriented lie-tellers. We also hypothesized that older children (11-year-olds) will have higher trustworthiness judgements compared to younger children (7- and 9-year-olds). We also predicted an interaction between age and type of lie such that 11-year-olds will have significantly higher trust judgements for socially-oriented lie-tellers compared to 7- and 9-year-olds but their trust judgements for self-oriented lie-tellers will not significantly differ from the other age groups.

We also aimed to investigate the role of theory of mind in children's evaluations of trustworthiness. We hypothesized that children who score higher on total ToM as

well as interpretive ToM (iToM) tasks will have higher evaluations for socially-oriented lie-tellers compared to self-oriented lie-tellers when controlling for age.

Furthermore, we aimed to investigate how children's evaluations of trustworthiness about lie-tellers were socialized through their parents. We hypothesized that parents' overall parenting style will predict children's trust evaluations such that children whose parents score higher on authoritarian parenting will attribute lower trust evaluations for protagonist in the socially-oriented situations compared to children with parents who score lower on authoritarian parenting. Subsequently, we hypothesized that children whose parents made frequent use of instrumental threatening lies towards their children during preschool will indicate lower trust judgements for socially-oriented lie-tellers compared to children whose parents do not use threatening lies less frequently towards their children.

Finally, we aimed to investigate if children's ToM abilities mediated the relationship between parenting and children's trust evaluations. We hypothesized that the influence of parenting styles and parents' instrumental use of threat lies towards children will be mediated by children's total ToM performance.

CHAPTER 2

METHOD

2.1 Participants

A total of 145 Turkish-speaking elementary school students were tested. There were 51 7-year-olds (mean age = 7;3 [years; months], SD = 6.1 months, 26 boys), 46 9-year-olds (mean age = 9;4, SD = 4.6 months, 21 boys) and 48 11-year-olds (mean age = 11;2, SD = 3.4 months, 23 boys). 121 primary caregivers completed the parent measures (117 mothers, 4 single-parent fathers). While participants were recruited from both public and private schools in differing neighborhoods of the Çankaya district in Ankara, most participants (and their Parents) reported having a high socioeconomic status. 81.84% of primary caregivers had a university degree and 45.92% reported a monthly household income higher than 7.000 Turkish Lira

2.2 Procedure

After the relevant permits were obtained from the Bilkent University Ethics Board and the Turkey Ministry of Education, administrators of primary and middle schools in Ankara were contacted. The study description along with written consent forms were distributed to parents who children attended schools willing to participate in the study. Primary caregivers who sent in a signed consent form were sent a demographics form as well as all the parent measures. In the consent form, parents

indicated how they wished to complete the parent measures. Parents were given the option to fill out pen-paper questionnaires, in which case the printed versions were delivered to the parents via the schools' counseling or secretarial services, and were delivered to the researchers the same way once completed. If parents chose the second and last option, they filled the questionnaires using the Qualtrics software, sent to them via their e-mail account indicated in the consent forms.

Children whose parents filled all the necessary parent documents and measures were contacted at their schools for verbal consent. If verbal consent was obtained, children were tested in a quiet room at their own schools. A team of eight research assistants, all undergraduate students at Bilkent University were trained to go testing alongside the main researcher. Everyone alternated between the tester and coder positions. One tester and one coder attended each testing session. While the tester was the only one directly interacting with the child participants, both the tester and the coder coded during all sessions. Any differences in coding would be debated after testing. Any dilemmas not solved then would be brought to weekly meetings to be discussed further. The testing sessions were not audio or video recorded. Children always completed the ToM battery first and LET second due to the high cognitive demands of the ToM tasks. Combined, the child tasks took approximately 30 minutes, with both ToM and LET taking about 15 minutes each.

Due to the pandemic, it was not possible to complete the original data collection and project for this thesis. However, it was possible to use the current study/data to write a thesis and graduate. This research was part of a larger research project that focused on children's evaluations of appropriateness of lies. This was a TÜBİTAK grant

project with Asst. Prof. Allen as the principal investigator. The larger study included two additional parent questionnaires which will not be mentioned here, as well as additional test questions in the LET, which will be mentioned briefly below. A pilot study was also done with 126 children in the same age groups, with the same tasks and procedure.

2.3 Materials

2.3.1 The Demographics Form

The Demographics form consisted of 13 multiple choice or open-ended questions that asked the mother about the family structure, household income as well as the age, education level and the profession of the caregivers, almost always the mother and the father.

2.3.2 Direct Child Measures

2.3.2.1 Lie-Telling Evaluation Task (LET). LET was developed with the aim of assessing primary school children's evaluations of lies and lie-tellers in varied social situations. Eight short stories were read to children in a counterbalanced order, all involving two characters: one lie-teller and one lie-recipient. Half of the stories involved a socially-oriented lie: (1) being modest, (2) being polite, (3), being respectful, (4) instilling positive affect in the lie-recipient; whereas the other half showcased a self-oriented lie: (5) avoiding shame, (6) avoiding punishment, (7) avoiding bullying, and (8) bolstering own status. In both the pilot and the original studies, the scenarios were created by researchers by investigating the limited relevant literature, identifying deception contexts, and creating age-relevant

20

scenarios for each concept. After the pilot study, four of the eight scenarios in LET were replaced or altered to better fit the scenario. The three scenarios that were focused on during analysis are presented below in English (originally performed in Turkish):

"Avoiding punishment:

Mert sneaked into the school building during lunchtime, during when it was forbidden to do so. The hall monitor spotted Mert, told that they were not allowed in the school building during lunch and asked if he had gotten permission. Mert told the hall monitor that the English teacher allowed him to go into the building, in order to avoid getting a punishment.

Being polite:

Ahmet's friend told him that he had a great new toy and that Ahmet would have a lot of fun if he came over to play with it. Ahmet went over to his house to play with this new toy. Ahmet did not have much fun and was in fact bored. He believed this was an ordinary toy. But when his friend asked him if he had fun, Ahmet said he was having lots of fun, in order to be polite.

Avoiding shame:

Mete was quite sick, did not make it in time to the school bathroom and spoiled himself. When he got out of the toilet, a classmate asked Mete asked him why his pants were wet. Mete told that he accidentally splattered water on his pants, in order to avoid shame."

To ease understanding, one cartoon that showcased the two characters and the setting accompanied each story. Both the name and the cartoon image of the protagonist were gender-matched to the participants. Each story was followed with two

comprehension questions (one asking the actual event and the other asking about the false statement). That story was reread and that question was asked again when a child answered incorrectly. After a second incorrect answer for one story, the evaluation questions for that story were skipped and children moved onto the following story.

Next, a binary categorization question was asked about whether the protagonist's statement was truthful or deceitful. Then, three 7-point Likert scale questions were asked assessing (1) categorization of the lie, (2) emotional trust for lie-teller, and (3) reliability trust for lie-teller. The answer options for these three questions were counterbalanced as well.

The questions were also accompanied by a visual aid that showed seven faces, going from a red and upset expression to a green and smiling face (Cheung et al., 2015; Ma et al., 2011; Xu et al., 2010). Children's responses were confirmed by the experimenter if children pointed at a face on the visual aid instead of giving a verbal answer. Finally, children were asked what they would do in that scenario, with binary options representing giving a deceitful versus truthful statement. All questions -except for categorization- used neutral language and did not refer to any of the deceitful statements as being "deceitful" or "a lie" to not affect children's judgements. The complete task used in the broader study also included questions in which children were asked (1) the appropriateness of the lie (7-point Likert scale), (2) why they believed the protagonist told such a question (open-ended) and (3) what they would do in that scenario if they were the protagonist (open-ended) which were not analyzed in this study.

2.3.2.1 Theory of Mind (ToM) Tasks. Children were given four increasingly difficult ToM tasks. The order of iToM tasks as well as the multiple-choice question options were counterbalanced. The gender of the protagonist in the real-apparent emotion task was matched to the participants', and all other tasks included one male and one female character. All tasks started with comprehension questions. The task was reread after each wrong answer to a comprehension question, and that question was asked again. After two wrong answers in one task, the task was stopped and children's responses were omitted from analysis. Also, "ToM Total" score was created from the Z-scores of real-apparent emotion, second-order false belief, ambiguous figures and droodles tasks as a measure of children's total theory of mind abilities for furt.

2.3.2.2.1 Real-Apparent Emotions. Wellman and Liu (2004)'s real-apparent emotions task was utilized as translated to Turkish by Özaran (2009). The aim of the task is to assess children's ability to distinguish between real and apparent emotions using a short story. In this story, a child receives a disappointed gift yet hides their disappointment due to fear that they will not receive any gifts in the future if they show their true feelings. After two comprehension questions, children were asked the real and the apparent emotion of the protagonist with three answer options. An image with an expressionless child and an image with the three facial expressions representing the answer options (neutral, happy, and sad) were used as visual aids.

Children received 1 point if they reported the real emotion as being more negative than the apparent emotion (i.e.: either real emotion: neutral, apparent emotion happy

or real emotion; happy; apparent emotion: neutral/sad). Children received 0 points in all other cases.

2.3.2.2.2 First and Second-Order False Belief Tasks. One change of location task created by Astington and colleagues was utilized for measuring both first- and second-order false belief (2002). A story was told to children in which character A relocated a letter unaware that character B was observing them. The first-order false-belief question assessed character B's beliefs. Children who answered correctly moved onto the second-order false-belief question which assessed character A's beliefs as embedded in character B's beliefs. Utilizing the coding structure outlined by Astington (2002), children who answered the second-order false belief question accurately received 1 full point, and all other children were given 0 points.

2.3.2.2.3 Ambiguous Figures Task. The duck/rabbit illusion was utilized for this task. Children were shown two figurines, one seeing a duck and the other one seeing a rabbit. After it was ensured that the participating children could see both the duck and the rabbit in the image, they were asked to (a) explain why to people may see a different animal in the same image and (b) predict what a third person would see in the image. After both the explanation and the prediction questions, children were asked to explain their reasoning for their answers, raising the total number of questions to four.

Tafreshi and Racine (2016)'s coding schema was used. Children could obtain up to 4 points based on their answers to the four questions. Questions were graded based on whether children referred to or showed understanding of the ambiguity of the image,

and that the ambiguity was not seen as limitless (e.g., understanding that the image can depicts both a duck or a rabbit, but not an elephant).

2.3.2.2.4 Droodle Tasks. This task was developed by Lalonde & Chandler (2002) based on Roger Price's illustrations (1953). Children were given two droodle tasks. In both of the tasks, children first observed the full drawings, each drawing them having two items (witch and boat, elephant and grapefruit). Children were asked to identify both items, then the full drawings were covered by a black sheet leaving only an occluded view visible. The occluded view in both tasks involved two geometrical shapes. Children were shown two figurines successively and asked what these figurines would guess the shapes in the occluded view could represent. In both tasks, children were repeatedly told that the figurines had not seen the full image.

Children received 0 points if they did not attribute a false belief to any of the figurines by making at least one of their guesses either exactly the same as or similar to the full image. Children received 1 point if they only attributed a false belief to one of the figurines but not the other. Children received 2 points if they attributed the same false belief to both figurines. Children received 3 full points if they attributed completely different false beliefs to the figurines for both shapes in the occluded view. Since there were two Droodle tasks, children could get up to 6 points total in the Droodle tasks. This total score was utilized during analysis.

2.3.3 Parent Measures

Some parents only left the control questions blank and answered all other questions. Some parents marked "I prefer not to answer" for all the control questions but no

other questions. As such, parents who only left the control question blank or who only chose "I prefer not to answer" for the control questions were counted as passing the control questions for all parent questionnaires. Mean replacements were performed for all four parent questionnaires if parents had more than 85% of data in a given scale or subscale.

2.3.3.1 Parents' Attitude Scale (PAS). PAS is a Turkish questionnaire developed by Demir and Şendil (2008) to measure general parenting attitudes based on the properties of the four parenting styles identified in Turkish culture: authoritative (11 items), authoritative (17 items), (over-)protective (9 items), and permissive (9 items). Protective parenting, named specifically for Turkish Culture is defined by excessive touch, parental control, infantizing and inhibiting social development (Demir & Şendil, 2008). The original task involved 46 total test questions and 4 control questions that checked attention were added for this study, creating a total of 50 items. Two participants were excluded from analysis for answering more than 2 control questions falsely.

2.3.3.2 Instrumental Lie-telling Questionnaire (INS). Originally developed by Heyman, Hsu, Fu and Lee (2014), the INS aims to measure how often parents are deceitful to their preschool-aged children in order to elicit desirable behavior or avoid undesirable behavior from them in different social situations. The original questionnaire was adapted by the researchers to better fit Turkish culture. Lies about supporting the existence of fantasy characters were removed altogether, and a few items in other categories were replaced if culturally inapplicable. In the end, the adapted questionnaire consisted of 5 deceitful items from each of these categories:

(1) eating, (2) leaving or staying, (3) misbehavior, (4) spending money, (5) instilling positive affect in the child. For each item, parents rated how likely they were to use that deceitful statement with their child while they were in preschool, again on a 5-point Likert scale (0: Never, 5: Always). Using of the Likert scale was another adaptation in order to observe the variability in answers, as the original questionnaire only had binary answer options (yes/no). Finally, an additional response option "I prefer not to answer" was added to minimize blank answers. A sixth category of threat lies was created for analysis from items in the five categories mentioned above, by putting together all the parental lie scenarios that directed serious threats and/or resulted in instilling considerable negative affect to the child. Six items were identified as belonging to this category.

CHAPTER 3

RESULTS

3.1 Preliminary Analysis

Mother's education, father's education and family income were all correlated with each other (ps $<.001$). As such, all three were used to create a socio-economic status (SES) variable for the participants. Gender was negatively correlated with Droodles Total ($r=-.28$, $p<.01$) and ToM Total ($r=-.18$, $p=.04$) scores such that females had higher scores in both and positively correlated with parents' instrumental use of threat lies ($r=.19$, $p=.03$) such that female children were more likely to be told them by their parents than male children. Therefore, it was included as a control variable in the analyses of variance that included the above variables.

3.2 Development of Children's Trust Judgements About Lie-Tellers

The LET utilized two questions to measure participants trust judgements about lie-tellers (i.e., emotional trust and reliability trust). As the two trust questions were positively correlated (r=.64.), they were combined and treated as one item for all further analyses.

The task was created by the researchers as a measure of children's lie and lie-teller evaluations. There were a total of eight scenarios, with two a priori factors (self-

oriented and socially-oriented) configured by the researchers. An exploratory factor

analysis using Principal Component Analysis (PCA) with Varimax rotation

performed (KMO = .78). Preliminary analyses reported no violations. Results

revealed two factors with four factors each. However, the scenarios did not load on

to factors along with a priori structure. One lie scenario in both factors had switched

in this factor structure compared to the a priori division. Thus, even though both had

two factors, two of the eight lie scenarios flipped between the a priori structure and

the factor structure: As stated earlier, the original structure categorized lies as: (a)

self-oriented: lies for (1) avoiding punishment, (2) gaining status, (3) avoiding shame

and (4) avoiding bullying and (b) socially-oriented: lies for (5) being polite, (6) being

respectful, (7) being modest and (8) instilling positive affect in the lie-recipient.

However, in the factor structure, number (1) punishment and (7) modesty switched

factors.

A second factor analysis was run using Principal Component Analysis (PCA) with

Varimax rotation performed, yet this time a fixed number of factors were specified:

two. Preliminary analyses reported no violations and the same factor structure was

observed: KMO was over .6 as expected (.78) and Bartlett's test of sphericity

reached significance ($p < .001$). Factor 1 included punishment, politeness, positive

affect and respect, explaining 40.42% of the variation, and Factor 2 included shame,

status, modesty and bullying, explaining 14.03% of the variation as similar to the

previous exploratory factor analysis.

Although both Factor 1 ($\alpha = .70$) and Factor 2 ($\alpha = .71$) as well as the total scale ($\alpha = .78$) had moderate internal consistency, further analysis was not conducted with this

factor structure as it lacked theoretical standing: The lie scenarios in the factor structure did not meaningfully group bases on lie-tellers intention or the lies' orientation/benefit towards the self or others. Instead, three lie scenarios were selected to focus on. To determine the scenarios that would be most relevant to focus on during analysis, six criteria were used. These were (1) factor analysis loadings and overall trust means, (2) overall trust means, (3) developmental and cultural relevance, (4) previous literature, (5) children's success in lie categorization questions and (6), children's success in lie comprehension questions.

For the first criteria, the scenarios that that had an extraction score above .70 in the explanatory factor analysis were given 1 point and others were given 0. The second criteria involved the overall trust means from children for each scenario. The aim was to give 1 point to the scenarios with the two lowest and highest trust judgements from children, with the purpose that studying these scenarios would show a variety, and more easily allow for comparison. Since criterions 1 and 2 overlapped completely and both were measures of children's trust ratings, they were treated as 1 criteria.

For the next criteria, existing literature on cultural evaluations of the context of these scenarios and children's behavior or evaluations of deception in the context of these scenarios. For culture literature, only studies that were cross-cultural or specifically focusing on East Asia or Turkey were considered for relevance and availability of comparison with other deception literature. Previous culture literature on punishment (Acar et al., 2019), politeness (Altınkamış, 2017) and shame (Boiger et al., 2014) were identified alongside previous developmental literature on punishment (Fu et al.,

2015; Cheung et al., 2016), positive affect (Hsu et al., 2014) and politeness (Xu et al., 2001; Cheung et al., 2016).

For the next criteria, children's success rates in lie categorization questions were investigated. The scenarios in which over 70 of the 146 participants used the exact scenario titled in the open-ended categorization question that asked the participants why they believed the protagonist lied received 1 point and other scenarios received 0 points. This was used as a criterion to ensure the scenarios were appropriate and that the researchers categorized these scenarios accurately. Finally, children's success rate in the multiple-choice comprehension questions were investigated as a criterion, as a measure of the clarity of the scenarios. However, since no scenario was reread (due to a false answer in a comprehension question) for more than 22 children out of 146 participants, this was eliminated as a relevant criterion.

After this process, punishment, shame and politeness were chosen as the three scenarios to be focused on during analysis by receiving a point for 4,3 and 3 out of 5 criteria respectively.

Our main aim was to investigate how children's trust evaluations about lie-tellers are influenced by their age as well as the type of situation. See Table 1 for means and standard deviations.

Table 1. Descriptive Statistics of Children's Trust Judgements According to Age

	7-year-olds		9-year-olds		11-year-olds	
	X	SE	X	SE	X	SE
Punishment	2.31	0.15	1.85	0.15	1.80	0.14
Bullying	2.16	0.16	2.50	0.16	2.55	0.15
Status	2.15	0.16	2.39	0.17	2.35	0.15
Shame	2.31	0.14	2.39	0.14	2.74	0.13
Politeness	2.15	0.15	2.04	0.16	1.60	0.14
Positive Affect	2.09	0.14	2.08	0.14	2.27	0.13
Respect	2.37	0.15	2.45	0.16	2.30	0.14
Modesty	2.32	0.14	2.46	0.15	2.94	0.13

A mixed between-within subjects analysis of variance was conducted with age (7-, 9-, 11-year-olds) as the between-subjects variable and lie scenario (punishment, shame, politeness) as the within subjects variable to assess their impact on children's trust judgements about lie-tellers. The data was close to normal distribution according to skewness and kurtosis checks for normality (between -3.29 and +3.39). Levene's test of homogeneity was not violated for shame and politeness but was violated for punishment ($p = .01$) and two outliers were identified but ANOVA was robust under such violations. The overall test was significant, Wilks' Lambda = .76, $F (2, 129) = 20.93$ $p<.0005$, $\eta_p2= .25$. The main effect of age was not significant, $F (2, 130) = .83$, $p = .44$, $\eta_p2 < .01$, as expected. There was a significant main effect of lie scenario, $F (2, 130) = 21.87$ $p<.001$, $\eta_p2= .14$, such that children rated lie-tellers lying to avoid shame as more trustworthy compared to lie-tellers lying to avoid

punishment (p = <.001) or be polite (p = <.001). Results also indicated a significant

interaction between age and lie scenario, $F (2, 130) = 6.18$ p< .001, η_p2= .09 (see

Figure 1).

Note. *p< .05

Figure 1: *Children's Mean Trust Judgements for Punishment, Shema and Politeness*

According to Age

Post-hoc analyses were done to further understand the interaction between lie
scenarios and age. Comparisons for trust judgements across different lie-scenarios
for each age was focused on first in the post-hoc analysis. According to these post-
hoc comparisons using the Bonferroni test, 11-year-olds had significantly lower trust
judgements about lie-tellers lying to avoid punishment compared to their judgements
about lie-tellers lying to avoiding shame ($p = .01$) such that their trust judgements for
the former were lower compared to their trust judgements for the latter. The same
was true for 9-year-olds ($p = .01$) but not 7-year-olds. Only 11-year-olds', but not 7-
and 9-year-olds', trust judgements about lie-tellers lying to be polite were
significantly lower than their trust judgements about lie-tellers lying to avoid shame
($p < .001$).

Comparisons across different ages for each scenario was focused on next. Post-hoc
comparisons using the Bonferroni tests revealed that 11-year-olds had marginally
significant higher trust judgments about lie-tellers lying to avoid shame compared to
7-year-olds ($p = .08$). On the contrary, 11-year-olds had marginally significant lower
trust judgments about lie-tellers lying to avoid punishment and politeness compared
to 7-year-olds (both $p = .05$).

**3.3 The Development of Children's Theory of Mind Abilities and Their
Relationship with Children's Trust Judgements**

With the assumptions that ToM tasks increase with age and are correlated with each
other, the relationship between all four theory of mind measures (real-apparent
emotion, first- and second-order false belief, ambiguous figures, droodles) and age

was investigated using Pearson product-moment correlation coefficient (see Table 2). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Age was positively correlated with second-order false belief performance, $r = .33$, $n = 146$, $p < .005$, ambiguous figures performance, $r = .33$, $n = 145$, $p < .005$ and ToM Total, $r = .35$, $n = 146$, $p < .005$, but not the other ToM measures. Most of the ToM measures were positively correlated with each other.

Table 2. Bivariate Correlations Between ToM Measures and Age

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Age	—	.03	.12	.12	.17	$.33^{**}$	$.33^{**}$	.08	.05	.08	$.35^{**}$
2 Gender		—	.10	-.16	-.10	-.08	-.13	-.11	$-.33^{**}$	$-.28^{**}$	$-.18^{*}$
3 SES			—	-.13	-.07	.02	-.01	-.12	-.00	-.08	-.05
4 Real-Apparent				—	$.18^{*}$	.15	$.19^{*}$	$.17^{*}$	.13	$.20^{*}$	$.30^{**}$
5 First-Order					—	$.36^{**}$	$.65^{**}$	.15	.02	.11	$.68^{**}$
6 Second-Order						—	$.93^{**}$	$.29^{**}$	.03	$.20^{*}$	$.87^{**}$
7 Ambiguous Figures							—	$.24^{**}$	.05	$.18^{*}$	$.97^{**}$
8 Droodle Standard								—	$.16^{*}$	$.74^{**}$	$.23^{**}$
9 Droodle Guess									—	$.72^{**}$	.05
10 Droodle Total										—	$.17^{*}$
11 ToM Total											—

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

One between-subjects ANOVA and one between-subject MANOVA were conducted to investigate age differences in children's ToM performances. The means and standard deviations for Tom by age are given in Table 3. For both analyses, age groups (7-, 9-, 11-year-olds) were the independent variables and gender and SES were entered as control variables. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. The normality test showed that children's ToM performance did not significantly differ from a normal distribution. The outlier tests showed that there were no significant outlier scores in the data for one or more variables. The tests for the homogeneity of variance-covariance matrices tested that the assumptions for homogeneity of variance and homoscedasticity were not violated; i.e., that the dependent variables' (which will be mentioned below) variances are similar to each other for each of the same level of the independent variables. The multicollinearity test was done to ensure the absence of multicollinearity and singularity; that none of the independent variables were strongly correlated with each other (>.80) such that we can conclude they are all different variables, whose effects can be isolated and reliable. For the first analysis, children's ToM Total abilities was entered as the dependent variable. There was a significant effect of age on the dependent variable, F (2, 134) = 10.64, p < .001, η_p2= .14) such that 7-year-olds' performance differed from both 9- (p <.01) and 11-year-olds (p < .001), who did not differ from each other. There was a marginally significant effect of gender such that girls had higher ToM Total scores (p = .09), and there was no main effect of SES.

Table 3. Descriptive Statistics of Children's ToM Performance According to Age

	7-year-olds		9-year-olds		11-year-olds	
	X	SE	X	SE	X	SE
Real-Apparent Emotion	0.83	0.38	0.83	0.38	0.90	0.30
Second-Order False Belief	0.59	0.50	0.86	0.35	0.90	0.30
Ambiguous Figures	1.46	0.72	1.83	0.44	1.88	0.38
Droodles	4.11	1.72	4.33	1.39	4.31	1.44
ToM Total (Z Scores)	-0.44	1.09	0.15	0.62	0.22	0.54

For the second analysis, the four of the ToM measures (real-apparent emotion, second-order false belief, ambiguous figures, and droodles) were the dependent variables. The omnibus test was significant, $F (8, 262) = 2.41$, $p=.02$, $\eta_p2= .07$. There was a main effect of age for second-order false-belief, $F (2, 138) =8.87$, $p<.01$, $\eta_p2= .12$ and ambiguous figures, $F (2, 134) = 9.22$, $p<.01$, $\eta_p2= .12$, such that that 11-year-olds performed better than 7-year-olds ($p < .01$) but not 9-year-olds, and 9-year-olds performed better than 7-year-olds ($p < .01$). Age did not have a significant effect on the other two ToM variables.

The relationship between children variables was investigated: The relationship between second-order false belief performance, ambiguous figures performance, total ToM performance and trust judgements to lie-tellers about lies told to avoid punishment, shame and be polite was investigated using Pearson product-moment correlation coefficient (see Table 2 above). Second-order false belief and ambiguous figures tasks were chosen for their developmental relevance, as indicated by

correlations with age. Furthermore, the second-order false belief task was chosen for involving recursive thinking, and the ambiguous figures task was chosen for being a widespread measure of interpretive theory of mind. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. When investigating the relationship between children's trust judgements, it was seen that trust judgements for lie-tellers lying about punishment had a positive correlation with trust judgements on lie-tellers lying about avoiding shame, $r = .25$, $n = 136$, $p < .005$, and being polite, $r = .45$, $n = 138$, $p < .00$. When investigating the relation between children's ToM performance and their trust judgements about lie-tellers, no significant correlations were found.

3.4 The Relationships Among Parenting Variables

The relationship between all four parenting styles (authoritative, authoritarian, permissive and protective) as well as parents' instrumental use of threat lies was investigated using Pearson product-moment correlation coefficient (Table 4) to understand the relationship between parents' overall parenting styles and lie-telling behavior towards their children. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Authoritativeness had a negative correlation with authoritarian parenting, $r = -.49$, $n = 120$, $p < .005$ as expected. Furthermore, parents' instrumental use of threat lies had a negative correlation with authoritative parenting, $r = .-25$, $n = 120$, $p = .01$. and a positive correlation with authoritarian parenting, $r = .32$ $n = 120$, $p < .001$.

Table 4. Bivariate correlations between child and parent measures

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Age	—	.12	.03	-.19*	.17*	-.20*	.33**	.33**	.35**	-.04	.03	.06	.14	-.15
2 SES		—	.10	.13	.07	.14	.02	-.01	-.05	-.03	.01	-.01	.07	-.10
3 Gender			—	.02	.09	-.04	-.08	-.13	-.18*	-.06	.08	.00	-.02	.19*
4 Punishment Trust				—	.25**	.45**	.03	.00	.01	-.04	.02	-.09	-.03	-.14
5 Shame Trust					—	.26*	.13	.045	.00	.17	-.16	.03	.04	.00
6 Politeness Trust						—	-.07	-.12	-.14	.03	.01	-.06	-.07	-.00
7 Second-Order ToM							—	.93**	.87**	-.04	.02	.06	.10	-.05
8 Ambiguous Figures								—	.97**	-.04	-.01	.04	.07	-.11
9 ToM Total									—	-.05	.01	.03	.05	-.15
10 Authoritative P.										—	-.49**	.01	-.07	-.25**
11 Authoritarian P.											—	.27**	.19*	.32**
12 Permissive P.												—	.06	-.09
13 Overprotective P.													—	.15
14 Instrumental Threat,														—

Note: *p < .05, **p < .01

40

3.5 The Relationships Among Parent and Child Measures

The relationship between parenting and child measures was investigated: The relationship between all four parenting styles (authoritative, authoritarian, permissive and protective), parents' instrumental use of threat lies, children's trust judgements (for punishment, shame and politeness lies) as well as ToM abilities (second-order false belief, ambiguous figures, ToM total), and children's age, SES and gender was investigated using Pearson product-moment correlation coefficient (see Table 5 for means and standard deviations). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. None of the parenting variables were correlated with any of the child variables.

Table 5. Descriptive Statistics of Parenting Variables

	X	SE	Range
Authoritative Parenting	3.41	0.38	[0,4]
Authoritarian Parenting	0.98	0.42	[0,4]
Permissive Parenting	1.27	.48	[0,4]
Protective Parenting	2.29	.65	[0,4]
Instrumental Threat	.42	.43	[0,2]

Six multiple regression analyses were performed to further investigate the role of parenting factors on children's lie-teller trustworthiness evaluations. Two multiple regression analyses for each of the three scenarios: (1) politeness, (2) punishment and (3) shame each to investigate the role of (1) parenting styles and (2) parents'

instrumental use of threat for a total of six multiple regression analyses. The first three regressions concerned parenting styles and children's evaluations of the trustworthiness of lie-tellers (see Table 7). In these regressions; SES, gender and age were entered in step 1, children's total ToM score was entered in step 2, and parenting styles were entered in step 3. This analysis was run once for each of the beforementioned three scenarios. Normality, linearity and homoscedasticity assumptions were not violated in any case. Tolerance was found to be above .1 and VIF was below 10, indicating that there were no violations of multicollinearity. Mahal's distance was higher than the critical value (>24) for one person. The outlier was removed from all further regressions. For all three scenarios, the overall models were not significant (Table 6).

The next half of the regression analyses concerned parents' instrumental use of threat lies towards children and children's evaluations of the trustworthiness of lie-tellers (Table 8). In this regression, SES, gender and age were entered in step 1, children's total ToM score was entered in step 2, and parents' instrumental use of threat lies towards children were entered in step 3. This analysis was run once for each of the beforementioned three scenarios. For all three scenarios, the overall models were not significant (Table 7).

Table 6. Hierarchical Regression Analyses to Test the Main Effects of Parenting Styles on Trust Judgements

Models	Shame Lie β	R^2	ΔR^2	Punishment Lie β	R^2	ΔR^2	Politeness Lie β	R^2	ΔR^2
Step 1. Control Var.		.03	.03		.01	.01		.06	.06
Age	-.21 [t]			-.16			.18 *		
SES	.09			.05			.05		
Gender	-.12			-.08			.01		
Step 2. ToM score		.06	.03		.02	.01		.07	.01
Age	-.18 [t]			-.22*			.18 [t]		
SES	.08			.07			.04		
Gender	-.13			-.05			.10		
ToM Total	-.09			.18			-.02		
Step 3. Main Predictors		.07	.01		.02	.00		.09	.02
Age	-.16 [t]			-.21*			.18 [t]		
SES	.09			.07			.05		
Gender	-.13			-.06			.04		
ToM Total	-.10			.17			.01		
Authoritative Parenting	.08			-.05			.15		
Authoritarian Parenting	.12			.04			-.13		
Protective Parenting	-.14			-.04			.04		
Permissive Parenting	-.10			-.06			.06		

Note. *$p < .05$, **$p < .005$, $t < .10$

Table 7. Hierarchical Regression Analyses to Test the Main Effects of Instrumental

Threat Use on Trust Judgements

Models	Shame Lie			Punishment Lie			Politeness Lie		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1. Control Var.		.05	.05		.03	.03		.05	.05
Age	.21			-.15			-.19 [t]		
SES	.05			.08			-.10		
Gender	.02			-.07			-.10		
Step 2. ToM score		.05	.00		.05	.02		.06	.01
Age	.22			-.20*			-.16		
SES	.04			.10			.10		
Gender	.02			-.04			-.12		
ToM Total	-.03			.17			-.20		
Step 3. Main Predictors		.05	.00		.07	.02		.06	.00
Age	.22			-.21*			-.16		
SES	.05			.09			.10		
Gender	.01			-.02			-.12		
ToM Total	-.03			.16			-.10		
Instrumental Threat	.04			-.12			-.01		

Note. *p< .05, **p<.01, t<.10

To investigate if ToM mediates the relationship between parenting and children's

trust evaluations, mediation analyses were performed using PROCESS. Mediation

analysis was done despite a lack of significant correlation between children's ToM

measures, parenting styles or parental use of instrumental threat lies during preschool

with children's trust evaluations because a significant full or partial mediation was

still possible (Zeinalova, 2020), and previous studies suggested a relation between

the above variables, as discussed in the introduction. Six mediation analyses were

conducted. The mediator variable was always entered as children's ToM total scores.

The outcome variable for all analyses was children's trust judgements for the

relevant scenario. The predictor variables for the analysis were (1) authoritarian

parenting and (2) parents' use of instrumental threat lies for each of the three

scenarios. For lie-tellers lying in any of the three scenarios, the mediation effect of

the two parenting variables on children's trust judgements were not statistically

significant. There was a partial indirect effect of parents' instrumental threat lie use

on children's ToM Total scores (r=-.37, p = .03) such that children whose parents

used instrumental threat lies more often had lower ToM Total scores (See Figures 2

through 7).

Figure 2: *Mediation Effect of ToM on Instrumental Threats' Influence on Trust Judgements for Punishment Lies*
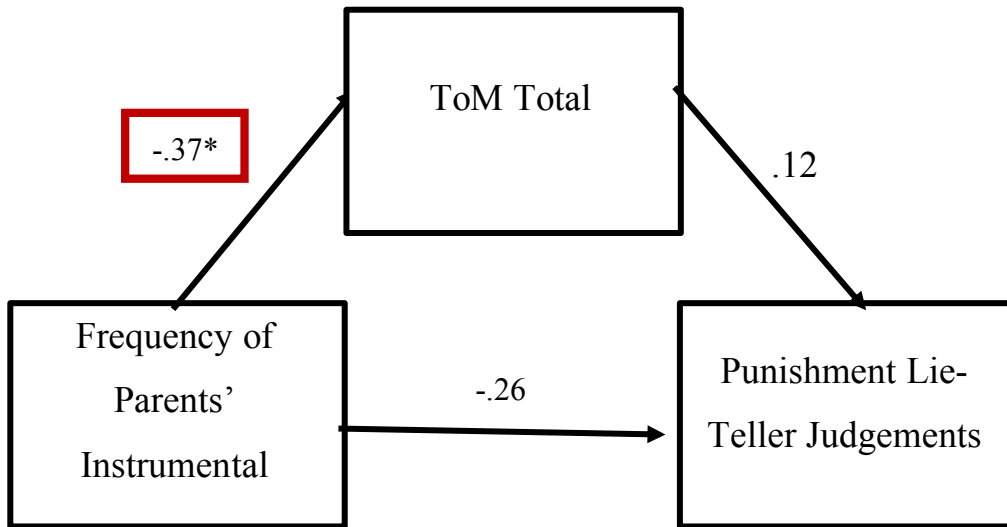

Figure 3. *Mediation Effect of ToM on Authoritarian Parenting's Influence on Trust Judgements for Punishment Lies*
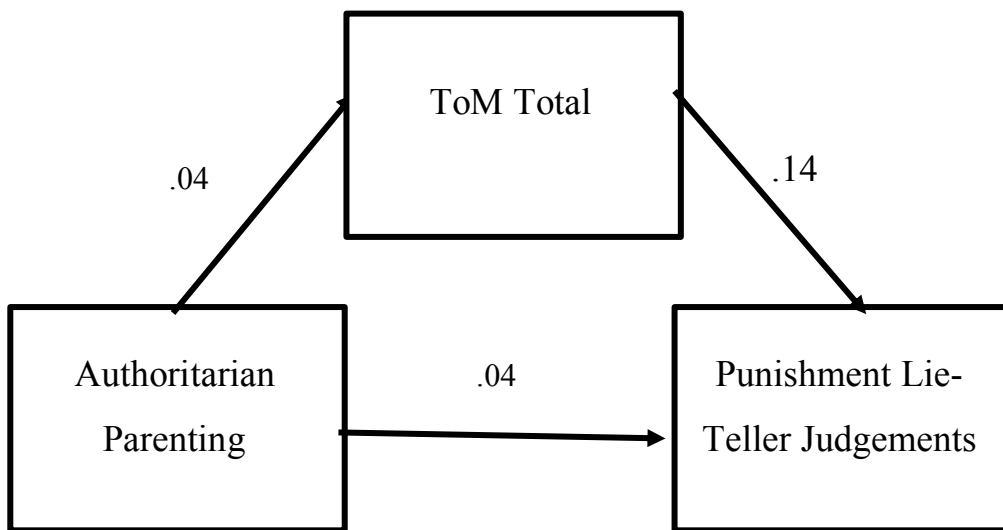
Figure 4: *Mediation Effect of ToM on Instrumental Threats' Influence on Trust Judgements for Shame Lies*
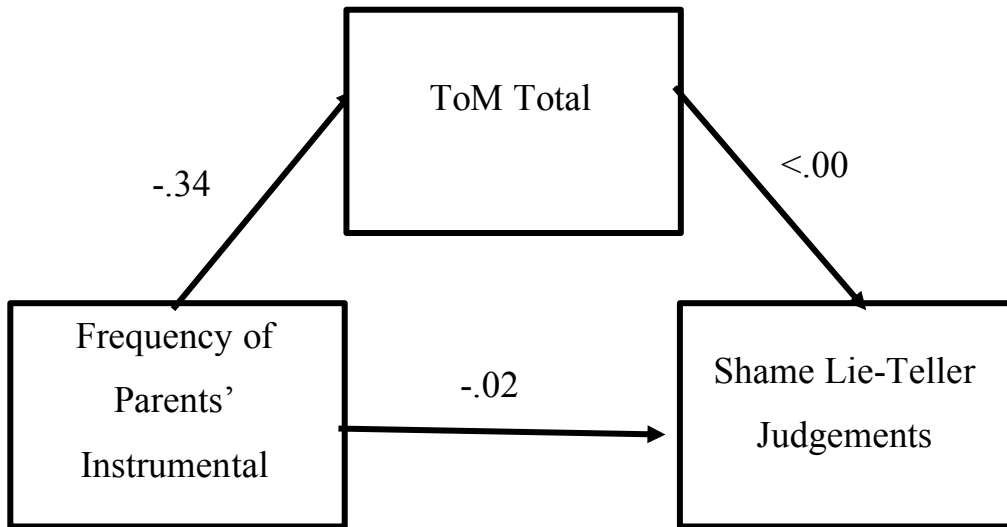

Figure 5: *Mediation Effect of ToM Authoritarian Parentings' Influence on Trust Judgements for Shame Lies*
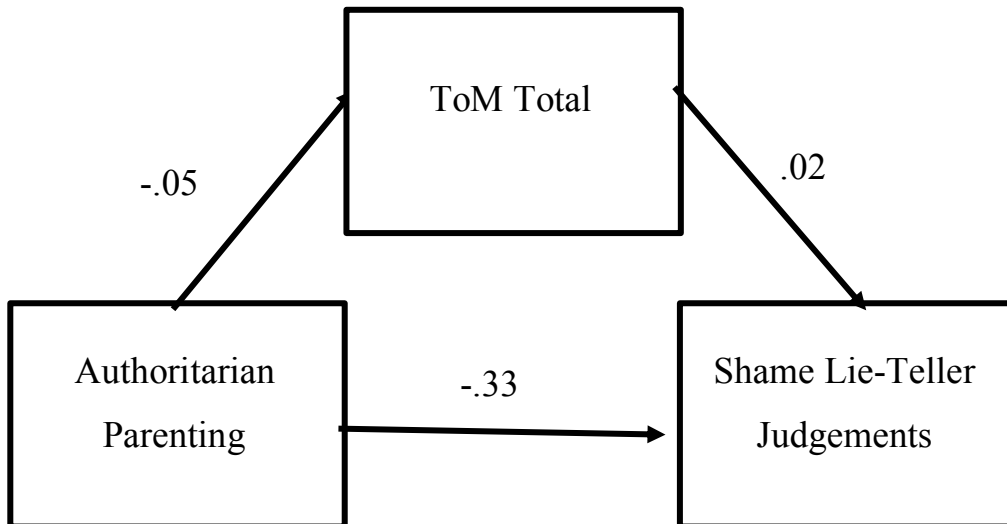
Figure 6: *Mediation Effect of ToM on Instrumental Threats' Influence on Trust Judgements for Politeness Lies*
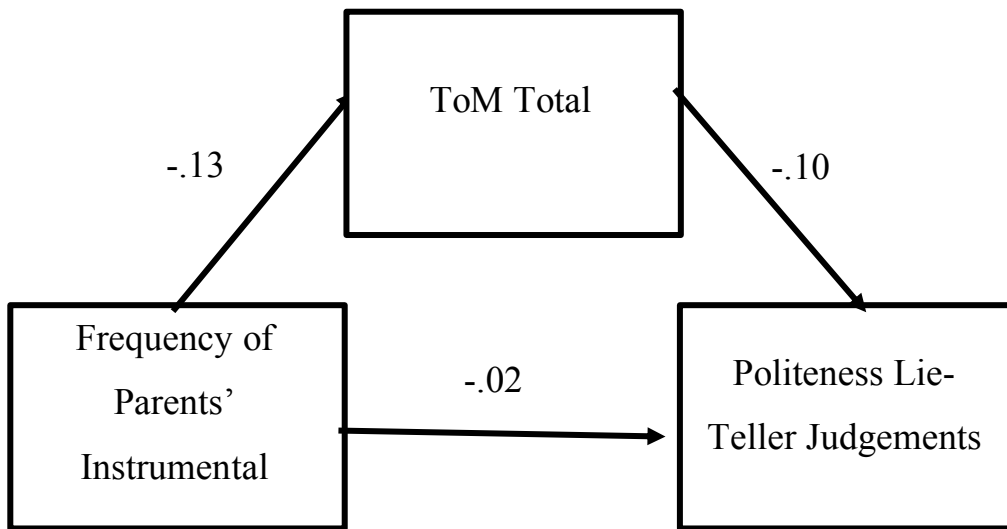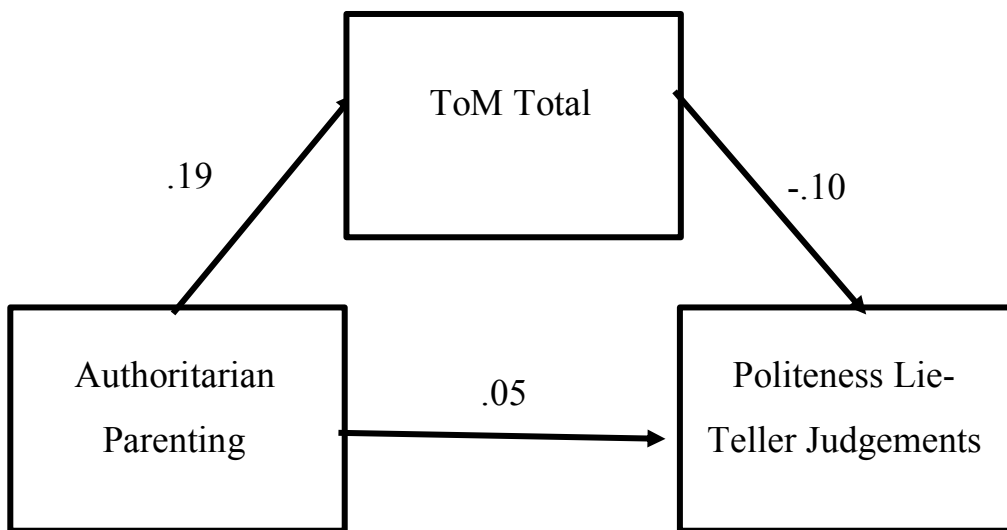

Figure 7: *Mediation Effect of ToM on Authoritarian Parentings' Influence on Trust Judgements for Politeness Lies*

CHAPTER 4

DISCUSSION

The current study aimed to investigate Turkish children's trust judgements about lie-tellers. It sought to examine how these trust judgements developed with age and differed within social situations. It also explored the relationship between children's cognitive abilities and parental influences with children's trust judgements about lie-tellers. Previous literature on children's evaluations had not focused on differing lie scenarios, and was focused on a binary categorization of lies, often as "prosocial" or "selfish" (see Cheung et al., 2015; Cheung et al., 2016; Fu et al., 2015). While an evaluation of the (in)appropriateness of a lie may be more easily conceptualized in that binary (e.g., "selfish" and "prosocial"), this study utilized eight separate lie scenarios -and focused specifically on three. Since the factor structure in this study did not match the researchers' a priori structure, it can be concluded that the relationship between interpersonal trust and deception involve multiple interconnected components, indicating that it is indeed not helpful to use two lie scenarios and generalize those scenarios as representing one of the two broad categorizations.

4.1 Children's Trust Judgements for Lie-Tellers According to Type of Social Situation and Age

Our main aim was to investigate how children's trust evaluations about lie-tellers are influenced based on their age as well as the type social situation in which the lie is told. Our results indicated that across all lie-situations and ages, participants on

average rated all lie-tellers as untrustworthy. However, the social situation still had an influence on children's judgements about lie-tellers, ranging from extremely untrustworthy to somewhat untrustworthy. Lie scenarios had a significant main effect on children's trust judgements.

However, the factor structure revealed during factor analysis did not fully fit with the a priori structure, despite having the identical number of factors. Researchers indicate that perhaps instead of focusing on the orientation of the lie, i.e. whether it is oriented towards the self or others, one can focus on the level of cultural acceptance, appropriateness etc. given to that lie scenario. For example, lying to avoid punishment may be oriented towards the self, but a protagonist lying to protect their honor and avoid punishment can still be seen as more trustworthy compared to other self-oriented lie-tellers in "honor cultures", i.e. in cultures that value honor, such as Turkey.

Expectedly, there was a significant interaction between age and lie scenario. This was interpreted to mean that children's trust evaluations do in fact change between the ages of 7 and 11. Overall, looking at the results for all three social situations, it can be understood that during the primary years, children start to differentiate their trust judgements about lie-tellers by considering the type of lie. This is because their understanding about social situations and how the various aspects of such situations influence their evaluation of people who tell lies develop with age.

Fu and colleagues. had similar results about age when comparing 6- to 11-year-old children's moral judgements for "selfish" versus "prosocial" lies and trust

judgements for selfish versus prosocial lie-tellers (2015). The study indicated that children rated prosocial lies less harshly than selfish lies and the difference only grew between first grade and the older age groups. It should be noted that one of the two prosocial lie scenarios used in the study involved helping others to avoid punishment, partially similar to the current study. In the current study, older children rate lie-tellers lying to avoid punishment more negatively than younger children. This shows an opposite trajectory to the Fu et al. study (2015). However, these results are not necessarily contradictory. One of the scenarios in the reported study was not related to punishment, and the other was told not to avoid punishment, but to help a friend avoid punishment. Since lying to protect a friend can be considered as improving emotional trust, their results appear consistent with our theoretical approach. The current approach would also expect lying to avoid punishment would be seen as an untrustworthy behavior whereas helping a friend would be seen as trustworthy.

Since punishment was categorized as a self-oriented lie in this current study, our results are confirmatory to our hypotheses. Lying for one's personal gain is considered as not appropriate and also reduces our trustworthiness in that person. This is observed in our results, which show that children's trust evaluations for a self-oriented lie, punishment, decrease as they get older, presumably because they are better able to differentiate between lie situations.

A study that investigated children's lie evaluations provided indirect insight into children's lie-teller evaluations by focusing on liar-intention (Cheung, Siu and Chen, 2016). Cheung, Siu and Chen compared 7-, 9-, and 11-year-old children's lie evaluations for lies that had protagonists with "selfish" and "prosocial" intentions.

Cheung and colleagues' study (2016) found that older children considered the intention of the lie-teller more frequently than younger children when making judgements about lies regarding facts compared to lies regarding opinions. Older children also rated lie-tellers lying about opinion (rather than fact), a variable about the lie, more trustworthy than 7-year-olds. This 2015 study exemplifies the relationship between considering lie situation or type and final trust judgements about lie-tellers. As such, it corroborates our underlying assumption that older children are better able and willing to consider lie situation when making trust judgements about lie-tellers. This is also presumed by the finding that 7-year-olds did not differ in their trust judgements between the lie situations, leading to the understanding that since they rated all these lie-tellers as equally untrustworthy, they did not consider lie situation when making their judgements.

While trust judgements for lie-tellers lying to avoid punishment showed the expected trajectory with age, the same was not true for shame lies: Trust judgements showed a marginally significant increase with age for lie-tellers lying to avoid shame. This finding, combined with the finding that 7-year-olds did not differ in their trust judgements between the lie scenarios, corroborates once again that older children consider lie scenario when making their trust evaluations about lie-tellers. Yet, the results are unexpected, at least at a first glance. This is because since shame was categorized as a self-oriented lie, the opposite trajectory result was expected, similar to those observed for lies about punishment. It is generally assumed that lie-tellers lying to protect self are not seen as trustworthy. However, it should be reminded at this point that shame lies were picked out for analysis partially due to their cultural relevance. As Boiger and their colleagues discuss, shame has a dominant place in

Turkish culture and social interactions (2014). Turkey is a culture that highly values "defending one's honor" and "keeping face" so much so that feeling shame for small faux pas or personal differences is expected and seen as a blemish to one's honor (Boiger et al., 2014). Interpreting the results in this light leads to the conclusion that, with increased age, children are better able and willing to understand the importance of honor, to understand shame as a very significant and unpleasant phenomenon, and thus rate lie-tellers who lie to avoid shame more trustworthy compared to younger children.

The third and final lie-type investigated in detail was politeness. Politeness showed a similar pattern to punishment: Trust judgements of children decreased near significantly with age for lie-tellers lying about politeness. Since politeness was categorized as a socially-oriented lie, it was expected that older children's trust judgements would be higher, not lower, compared to 7-year-olds. A possible explanation focuses on the difference between appropriateness and trust. While it is culturally appropriate and even encouraged to lie for politeness reasons (e.g., "I love your haircut!", "Your presentation was great!" "No, your meal is delicious, I am just full!" etc.), lying is overall damaging to interpersonal trust. In close relationships, we expect reliability (Rempel et al., 1985, Rotenberg et al., 2005). Lying to be polite (and perhaps similarly to instill positive affect) violates that trust and damages our ability to trust and believe the other person. One significant note is that both trust questions in the LET start with the phrase "If … (the lie-teller) was your friend", guiding children to consider interpersonal trust. Moreover, the politeness scenario involves the lie teller lying to their friend, which further instill this focus on interpersonal trust for close relationships. The lie teller and recipient are both

children, similar to the participants' age, making the participants more likely to consider what they would prefer and who they would trust in their own close relationships.

The age of the lie recipient can also provide another piece of the explanation of these contradictory results. It is accepted that politeness is a major phenomenon in Turkish culture, and that this importance is portrayed in parents' language at an early age (Altınkamış, 2017). However, this politeness often comes from the importance of, once again, honor, and more specifically, not degrading others' honor, and also not losing one's honor (Okamoto, 2010). Thus, the importance of being polite is sensibly most often directed at people who have more authority and respect in that culture. In the case of children in Turkish culture, all or most adults have more authority. Thus, being polite to all adults including parents, other relatives, neighbors and teachers is expected and highly encouraged. Returning back to the politeness scenario, it can be said that the violation of interpersonal trust had a larger impact than the importance of being polite when participants were making trust judgements precisely because the lie recipient was a peer and not an adult.

As a note; while the LET has been piloted with over 120 children, the focus of the larger study was evaluations of lie appropriateness rather than trust evaluations of lie-tellers. Thus, it is possible that these two facts caused the scenarios to have some room for change if the main focus was to be on trustworthiness. This is because, as discussed in the introduction, while evaluations of lie appropriateness and lie-teller trustworthiness are related, they do not follow the same pattern.

4.2 Children's Theory of Mind Abilities and Trust Judgements

The current study found a meaningful relationship between age and ToM abilities, as predicted. Second-order-false belief, ambiguous figures and ToM Total were all highly and positively correlated with age, as predicted. This is expected as we have chosen age-relevant advanced ToM measures which are expected to develop during primary school years (Miller 2009; 2016). The findings corroborate that ToM abilities continually develop during middle childhood.

Unexpectedly, neither of the Droodles tasks were correlated with age. One explanation is that the task requires creative thinking, which Turkish children may have difficulties with. To receive full points in a Droodles task, a participant is expected to come up with two different objects that can be represented by a given shape, on the spot, for each of the four shapes. That requires four different creative guesses per Droodles task. Thus, one possible explanation is that even though children's interpretive theory of mind abilities improved between the ages of 7 and 11, they lacked the creative answers to pass the given test. Creative thinking is not included to be fostered in standardized Turkish primary school curriculums, further corroborating this possibility. We can see that Droodles means for children across all ages is between 4.1 and 4.4 out of 6. The coding in this study was done such that children received 4 points for creating answers that were different from the original full picture, and 2 points for creating answers that were different from each other, thus requiring creative thinking alongside interpretive theory of mind. While it is not

a full explanation of the lack of age differences, this potentially provides a partial explanation for the children's performance in the Droodles tasks across the ages.

Moreover, our findings do not suggest an effect of children's advanced ToM abilities on children's trust judgements. As such, our predictions, which expected a positive relationship between ToM abilities and socially-oriented lie-tellers are disputed. Children's trust judgements about lie-tellers lying to avoid punishment, shame or to be polite are not correlated with their second-order-false belief, ambiguous figures or ToM Total scores. Previous findings had conversely found a relation between children's lie-telling behavior and their false-belief understanding (Talwar & Lee, 2008; Hsu & Cheung, 2013). It is possible that while ToM has a relation with lie-telling behavior but not lie-teller trust evaluations. This is because lie-telling has higher cognitive demand, as it requires coming up with a lie, investigating the others' reactions to measure their believability, hold the reality and the lie in their mind at the same time, calculate their next steps and continuing to keep a lie with time. Previous literature has well established that children's lie-telling behavior during *preschool* is related to their false-belief understanding Talwar & Lee, 2008; Hsu & Cheung, 2013). For instance, A study by Hsu and Cheung (2013) found a relation between 5- and 6-year-old children's ToM performance and lie-telling such that children who showed better performance in traditional false-belief tasks had more concrete ideas of how others should tell and maintain "selfish" lies than other children, whereas children's performance in interpretive ToM, a measure of children's understanding that the same ambiguous information can be interpreted differently by different people, was positively related with having more concrete ideas for how to tell and maintain "prosocial/white" lies. However, a similar

56

connection has not been made yet for children's lie *evaluations* about *lie-tellers* in later development, i.e., middle childhood, when first-order false belief abilities are often already established.

Cheung and colleagues' study (2016), which focused on the same age groups as the current study, found that childrens' performance in the second-order false-belief task was marginally positively correlated with their sensitivity to liar intention; i.e. whether they considered if the lie-teller had "selfish" or "prosocial" intentions when they were evaluating the lie itself. However, a second measure was created by the researchers entitled "sensitivity to content" (categorized as (a) lying about facts and (b) lying about opinions) in a similar manner. Results showed that children's second-order false belief abilities did not correlate with sensitivity to lie content. Thus, our research, which focus on lie situation and not liar intention as the independent measure, is consistent with their results.

The current study suggests that the development of children's evaluations of lies during primary school years are not due to ToM developments. These results are understood to mean that advanced ToM abilities are not required for making differentiated trust judgements about lie-tellers based on lie situation. Children are perhaps able to use less advanced theory of mind abilities to consider lie situation. It is concluded that younger children are cognitively able to differentiate between lie situations, but do not differentiate in their trust judgements because they believe all lies' effects on trustworthiness are similar, and thus do not consider lie situation as a factor when making their trust judgements: They are not familiar with the nuanced

relationship between interpersonal trust and deception and believe all lie-tellers are untrustworthy.

4.3 Parenting Variables and Children's Trust Judgements

Parenting styles and parents' use of instrumental threat lies were investigated in this study as potential influencers on children's trust judgements. These parenting variables were correlated with each other as expected and as consistent with previous literature (Demir and Şendil, 2008) such that authoritative and authoritarian parenting tendencies are negatively correlated with each other. Moreover, in line with our predictions, threat lies with instrumental purposes were negatively correlated with authoritative parenting and positively correlated with authoritarian parenting, exemplifying how general parenting styles directly relate to daily parenting practices. Scoring high on the authoritarian parenting subscale indicates having higher levels of control and demandingness but lower levels of warmth. It is sensible that parents who show high levels of control and low levels of warmth would be more likely to use threat lies for instrumental purposes. This is because instrumental lies aim to have control over one's childrens' behavior and threat can indicate lower levels of warmth. It is also expected that people who report higher warmth would dislike the use of threating lies as a parenting practice, further explaining the result that authoritative parentings' negative correlation with use of threat lies with instrumental purposes regardless of the fact that authoritative parenting also includes aspects of control (Robinson et al., 1995). Gender of the child was correlated with parents' frequency in use of instrumental threat lies such that girls were threatened with false statements by their parents more often than boys.

This is in line with the well-known gender roles that are prevalent in all over the world to differing degrees where girls are allowed less elbow room in their behaviors, thus their behaviors are policed more often; perhaps resulting in more statements in general with instrumental purposes from their parents.

As a note; the parenting measure of Instrumental Lie-Telling was retrospective and asked parents to base their rating for when the participant was a preschooler. Depending on the age of the participant, they were asked to look back anywhere between a couple and seven years. Thus, parents' previous behavior may not affect children's specific beliefs about lie-tellers' trustworthiness. An instrumental lie-telling scale may not be relevant for middle childhood as parents do not often use instrumental lies similarly during middle childhood.

Heyman and colleagues (2013) studied the prevalence of parents' instrumental lie-telling across cultures and found that while parents in both the U.S.A and China frequently resorted to instrumental lies towards their children during early childhood, 84% and 98% respectively, the difference between cultures were significant. The findings further supports the belief that parents' attitude towards parenting as well as their use of understanding of lie-telling varies across cultures, warranting a cross-cultural study that investigates the role of parenting factors on children's lie-telling behavior, lie evaluations and lie-teller evaluations.

The current study investigated the influence of parenting variables on children's trust judgements. Results indicated that none of the parenting variables (four parenting styles and instrumental threat lies) were correlated with any of the child variables

(theory of mind and trust evaluations for lie-tellers regardless of lie scenario). These results are unexpected and contradictory to our predictions. A partial explanation is that perhaps during middle childhood, school and peer socialization play a larger, more significant role on children's trust evaluations (Franco & Lewitt, 1998).

While no studies *directly* investigated parental variables' influence on children's trust evaluations about lie-tellers, a few studies investigated parental influence on children's lie-telling *behavior*. Popliger and colleagues' research indicated that general parenting styles did not have a direct effect on children's lie-telling behavior (Popliger et al., 2011). However, parenting styles did have an effect on said behavior when in interaction with their "positive emotion" towards their children. This finding indicates that while parenting behavior is not significant enough to have a direct influence on children's culturally-appropriate lie-telling behavior, as it does have an effect when in interaction with other factors. Another study by Talwar and colleagues (2017) reported a similar finding such that parents' general parenting styles did not have a direct effect on children's lie-telling behavior, but affected said behavior when in interaction with children's cognitive abilities such that children with high inhibitory control who have parents that score higher on authoritative parenting were less likely to lie. Ma and colleagues (2015) found that "control parenting", which is not a parenting style but a category based on a combination of parenting practices (identified by high levels of monitoring, demandingness, obedience etc.)., was correlated with lower chances of children's "antisocial" lie-telling on their own, and in interaction with children's theory of mind abilities. These findings are understood to mean that perhaps parenting styles are too broad to have a direct influence on children's lie-telling behavior, since parenting styles is a measure of parents' general

attitude towards parenting and their children, and include multiple components. It is expected that this assumption would apply similarly to lie and lie-teller evaluations, and more specific measures that reflect parents' attitudes toward moral and trust evaluations.

Finally, the current study investigated children's theory of mind's potential mediator role on parents' influence. Since neither children's theory of mind nor parenting variables indicated to have a significant influence on trust evaluations, it is sensible that there were. No direct mediations of authoritarian parenting, authoritative parenting or parents' instrumental use of threat lies towards children on children's trust evaluations for punishment, shame or politeness trust judgements of children. However, these results are still contradictory to the original predictions which predicted. The results are understood to mean that both parenting and theory of mind is more likely to have a have an influence or mediating role in earlier childhood.

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