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Deception and attitudes toward deception:

Individual differences in children, adolescents and their parents

Summary of the PhD thesis

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Contents

1. INTRODUCTION

Honesty is a strong principle that guides our moral behavior. Few behavior like lying or being honest have such a huge influence on our everyday life and interpersonal relationships. Lying is a reprehensible and inappropriate behavior (Bok, 1978), that takes part of our lives and we are accustomed with exhibiting it from time to time. Throughout history, from folklore we found out that liars are punished for their evil behavior, and religion teach us rules against telling lies to others. In our current society, lying is discouraged, being seen as bad, immoral and having negative consequences for relationships. Despite the costs, there are many social situations in which lying is encouraged and frequently used, being part of the human experience. For example, politicians use to deceive people to win votes, parents lie to their children to control their behavior and young children lie in order to avoid punishment. Moreover, we sometimes say we are pleased with our birthday present, despite we would like something else; we use to give compliments about someone's cooking, although the food was not really good. Thus, this is the paradox of lies: deception is condemned and we judge liars because they violate the moral rules, but, at the same time lying is used by society, with the aim to protect someone's feelings or to protect us. Moreover, parents either directly teach their children that lying is mostly wrong, yet they model deception through their own lie-telling behaviors (Lavoie et al., 2016). Taken this together, it is highly important for children to learn the differences between socially appropriate and inappropriate contexts of using lie-telling, because using deception in an inappropriate manner can affect others and themselves.

Regarding the development of deception, studies show that children begin to lie as they reach 2-3 year-olds, telling self-serving lies, which are unsophisticated, with the purpose to conceal misdeeds (Evans & Lee, 2013). However, as age increase, childre tell also prosocial lies, intended to benefit others and lies are told in politeness contexts (Popliger et al., 2011). As children increase in age, due to their maturing cognitive abilities, they also become better liars (Talwar & Crossman, 2011). Extensive research has pointed that deception is an adaptive process and studies should focus on the development of lie-telling, as children are of critical importance if we sought to understand the multi-faceted nature of deception.

Regarding the way in which children understand lying, studies show that with age children become better at categorizing truths and lies and children's understanding of lies and truths develops from being concrete and inflexible to being more abstract and flexible with age. Studies show that even though children tell lies from an early age, their attitude toward lying changes over time, from less acceptable to more acceptable forms of lie-telling, and from a concrete meaning of lies to a more abstract understanding. So people's acceptability of life is shaped by development.

Children as they get to adolescence, an important period of their development, their lie-telling behavior increases and is associated with several problems, such as aggressiveness, conduct disorder or delinquency (Stouthamer-Loeber, 1986). Lying starts as a normal aspect of development in childhood, and can evolve as a problematic behavior in adolescents due to its frequency and inappropriate use. So, lying has a dual nature, as it represents a normative aspect of development and social interactions, yet it is also be seen as a problem behavior. Moreover, being exposed to social agents, children may learn to deceive selectively, to maximize the benefits and minimize harm. When children don't learn the benefits of truth-telling, and use lying as a strategy to control other's behavior, their environments reward such self-serving lies and lie-telling becomes a problematic behavior, part of maladjustment (Talwar & Crossman, 2011).

Therefore, given the complexity of the deceptive behavior and of these two sensitive developmental windows, preschool years and adolescence in which deception socio-cognitive abilities show progress (Walczyk & Fargerson, 2019), the aim of this thesis is to contribute to the advancement of scientific knowledge about the investigation of deceptive behavior and lie acceptability in young children and adolescents.

2. OBJECTIVES AND OVERVIEW OF THE STUDIES

2.1. Research objectives

The main objective of this thesis is to clarify several aspects regarding the investigation of deceptive behavior and attitudes toward deception in two sensitive

developmental window, young children and adolescence. From this general objective, we derived specific objectives, which are presented below.

Therefore, the objectives from our first study are the following:

- *to establish the frequency of parenting by lying used by Romanian parents.*
- *to examine the differences between children's of 4 and 5 year-olds and older regarding the perceptions of lies and truths on deceptive vignettes*
- *to establish whether there is a relationship between the practice,"parenting by lying" and children's perceptions of lies and truths*

In our second study, our objectives are:

- *to test whether moral stories promote honesty in a preschool sample of 3 to 6-year-olds*
- *to assess children's deceptive behaviorin the temptation resistance paradigm*
- *to explore the connection between children's expected confession and its consequences in a hypothetical scenario and their actual lying behavior*

We investigated deceptive behavior and this is the first study which investigated the congruence between parental and child expected confession and consequences on a hypothetical scenario (Study 2).

Since there are two sensitive periods in which deception behavior is critical: preschool age and adolescence consequently, the objective from our last study is;

- *to examine predictors of individual differences in lie acceptability in the case of a sample of Romanian adolescents (14-19 years).*

To our knowledge, this is the first study which included somatization and callous-unemotional along measure of lie acceptability. There are no other studies which focused on a variety of individual differences associated with lie acceptability during adolescence (Study 3). In order to achieve the objective above, we conducted the following three studies.

3. ORIGINAL RESEARCH

3.1. Study 1. Parenting by lying and young children's perceptions of honesty on a Romanian sample

Parenting by lying represents a practice named in the literature, in which parents' manipulate children's emotions and behaviors (Heyman, Luu et al., 2009). In this practice, parents tell lies to their children concerning categories like: food, leaving and staying, misbehaviour and spending money. Studies focused on the concept of "parenting by lying" emphasize the importance of this practice in children's socializing and moral behavior. Our study sets out to investigate parent's instrumental lies toward their children in order to influence their behavior and whether this practice "parenting by lying would influence children's perceptions of lies and truths.

The first study conducted by Setoh et al., (2020) consisted on adults, and they were asked to recall whether their parents told to them such lies. Findings show that exposure to parenting by lying in childhood was associated with greater use of deception toward parents in adulthood. Also, those who used more often deception were also who manifested greater psychosocial maladjustment among young adults (Setoh et al., 2020). However, to date, no studies have investigated the connection between parenting by lying and children's perception of truth and lies

Current study

Our first objective from the current study aimed *to establish the frequency of parenting by lying used by Romanian parents.*

Our second objective was *to examine the differences between children's of 4 and 5 year-olds and older regarding the perceptions of lies and truths on deceptive vignettes.* We examined children's perceptions of lies and truths on a preschool sample of 4 to 6-year-olds, more specifically children's accuracy for identify lies and truths, children's moral evaluations of lies and truths and children's perceived consequences for honesty and deception.

Lastly, our objective was to *establish whether there is a relationship between the parenting by lying and children's perceptions of lies and truths..* To our knowledge, this is the first study to investigate the concept of "parenting by lying" in connection to children's perceptions of lies and truths.

Based on previous research (Heyman et al., 2013, Lavoie et al., 2016, Bussey, 2000; Talwar et al., 2016) We hypothesized the following: We expected that most parents would lie to their children; We expected that parent's moral approval of parenting by lying would predict their explicit lie instruction about lie-telling; we expect that children of 5 year-olds and older would be more likely to correctly identify lies and truths in deceptive vignettes, than children of 4 year-olds; we expect that children of 5 years and older would give more positive ratings for truth-telling and negative ratings for lie-telling, than children of 4 years old; we also expect that children of 5 years and older would be more likely to punish lies and reward truth, than children of 4 years old; we also explored the connection between parenting by lying and children's perceptions of lies and truths.

Method

Participants

Fifty-nine Romanian preschool children aged between 4 and 6 years and their parents participated in this study.

Instruments

Instruments used for parents:

A)Revised Lie Acceptability Scale (Oliveira & Levine, 2008). The scale measures the individual-level variability in attitudes toward deception.

B)Parenting by lying (Heyman et al., 2013). We assessed parenting by lying by a 16-item questionnaire developed by Heyman et al. (2013). Parents were questioned about four categories of instrumental lies consisted of lies related to eating, leaving or staying at a specific location, misbehavior and spending money Parents were also asked to respond to a set of untruthful comparison statements, including statements such as positive emotional outcomes and a set of statements concerning supernatural beings.

C)Parent's approval of parenting by lying (Heyman et al., 2013). Parents were also asked to respond to a moral approval measure regarding the parenting by lying questionnaire,

D)Child lie acceptability scale (Heyman et al., 2013) Parents also completed a child lie acceptability scale that involved the following child lie scenarios (Heyman et al., 2013).

E) Finally, parents were asked questions *about their children's lie-telling*

Instruments used for children:

A)Deceptive Vignettes- 4 deceptive vignettes for each child (Bussey, 1999) Each child was told four deceptive vignettes. There were two lies and two truths (statement type) for each of the four deceptive vignettes. The vignettes were similar to Bussey (1999. One example of vignette used in our study was the following:*I. Maria didn't brush her teeth before she went to bed. Maria's father asked Maria if she had brushed her teeth. Maria said either "Yes, I did brush them" (lie), or "No, I didn't brush them" (truth).*

Procedure

Parents provided demographic information and we obtained parental informed consent prior to children beginning the study. After the children entered the room, we told that we will play with words and after reading the vignette, we closely followed the procedure from Bussey (1999) and we examined:

1)Comprehension was assessed with two control questions*:* a question about the event ("*What did the character do*?") and a question about the statement *("What did the character said* ?").

2)Accuracy for identifying lie and truth was examined by asking the children:" "*Did the character lie to (her/his) (mother/father/sibling) or did (she/he) tell (her/him) the truth*?".

3)Moral evaluation of lies and truths statements was examined by asking the children:"*I want you to show me how good or bad it was for the character to have said (restate lie/truth)"*. The child was shown the following scale: "very good", "fairly good", "a little bit good", "a little bit bad", "fairly bad", "very bad".

4)Fellings were assessed by asking the children: "How would (*the character feel about (herself/himself) for having said (state lie/truth)?*". After, the interviewer asked: "Would the character feel (scared/ happy/ guilty/ sad) for having said (state lie/truth)?"

5) Children were asked if the protagonist should receive a *punishment or a reward*: "*Should the character receive a punishment or a reward for having said (state lie/truth)?"*

After the deceptive vignettes, children were asked to give free responses from six questions about the parenting by lying questionnaire. Finally, children were asked if they usually lie and to respond to what it means to lie

Results

The majority of parents, specifically 98.3% of parents reported telling their own child at least one lie that was similar to the 16 examples they were asked. The most common lie, which was reported by 78% of parents, involved the false belief that if the child lies, the nose

will grow like Pinocchio's nose. Our first hyphotesis has been confirmed, showing that most parents would lie to their children. Parents' reports regarding their explicit lie instruction about lie-telling showed that 93% responded that they have never verbally taught their children to say lies. We found no significant relationship between parents'moral approval of parenting by lying and their explicit instruction about lie-telling ($\chi2(\ (1,\ 53) = .104$, Nagelkerke $R^2 = .005$, p =.747. Regarding childen's accuracy for truth and lies, we found out that age predicted children's accuracy for identifying lies, b = 2.216, SE = 1.134 Wald(1) = 3.818, odds ratio = 9.167, 95% confidence interval = [.993, 84.6], $p = .048$.

Regarding children's moral evaluations of lies and truth, our descriptive results showed that, 71.2 % of children would give positive ratings for truth-telling and 96.6% would give negative ratings for lie-telling. We did not find significant association between age and moral evaluation of lies and truths. Regarding children's consequences, we found out that age predicted *punishment for lie telling*, b = 1.753, SE = .678, Wald(1) = 6.673, odds ratio = 5.769 , 95% confidence interval = [.1.52, 21.80], p = .010. In our sample we did not find a significant association between parenting by lying and measures of children's perception of truths and lies.

Discussion

The present study aimed to investigate the concept of parenting by lying in a sample of 59 parents of preschool children. Firstly, the majority of parents lie to their children in order to influence their behavior. Most of parents (98.3%) reported telling their own child at least one lie that was similar to the 16 examples they were asked. Our results are consistent with results found by Heyman et al. (2013) where it was found out that 84% of parents from US and 98% parents from China reported telling their own children at least one lie that was similar to the 16 examples they were asked.

Secondly, we found no association between parent's approval of parenting by lying and parent's explicit lie instruction to their children about lie-telling. In other words, our results suggest that parent's approval of parenting by lying differ from the manner in which they explicit instruct their children about lie-telling.

Regarding children's accuracy for identifying lies and truths, we found that children of 5 year-olds and older are more likely to identify correctly lies in deceptive vignettes**,** than children of 4 year-olds. Our results are in line with previous findings (Bussey, 1999) where

they reported significant age differences in accuracy between preschool children (4 years old) and older children (8 and 12-years old).

Regarding children's moral evaluations of lies and truths we did not find age differences in children's moral evaluations of lies and truths. We failed to show age differences for rating reward in truth vignettes.We should also keep in mind that the age of the children in our sample is very close, and some differences might have not been detected.

From an exploratory perspective, we also investigated the connection f parenting by lying on children's perceptions of lies and truths. We found no associations between the variables. However, we explored this connection, and it is possible that the effect of parenting by lying might not be detected at this young age.

However, there are several limitation to address. A first limit represents the small sample of parents and children, and due to this limit, we might not have been able to detect some effects. Second, our research was limited in terms of having only children ages 4 to 6 years. Literature shows that after this period children continue developing executive functioning skills, which are connected to children's lie-telling behaviors (Talwar & Lee, 2008). Future research should include a larger sample size and a broader age range. Another limit refers to parents' reports about lying. It is possible that they underestimated the lying rates, and they did not completely accurate the reports. Since the social desirability effect was not controlled, we cannot be sure of their precise response.

Despite these limitations, our study adds important findings regarding the development of parenting by lying and children's perception of lie and truth-telling. Regarding children's perception of lie and truth-telling, we found age differences in accuracy for identifying lies and punishment for lie vignettes. Romanian parents are willing to lie to their children, in order to obtain behavioral compliance. The use of some lies deserves more attention regarding the parent-child relationship. For example, using the false threat to leave a child who refuses to follow a parent, could increase children's fears of abandonment. Given the evidence that deception and lying can damage trust among friends in elementary school (Kahn & Turiel, 1988), and greater exposure to parenting by lying in childhood is associated with negative outcomes later in life (Santos et al., 2017), it seems plausible that child-parent relationship might be compromised. The trust is affected by the fact that children find out their parents lied to them intentionally, and parents should analyse which are the costs for

using these lies to influence children's behavior. Also more research is needed to investigate how parental practices impact children's developing beliefs about the entire world. Instrumental lies impact children's belief about values, nutrition, biology and shape their mind.

3.2. Study 2. Moral stories and young children's confession of misdeeds in relation to their perception of honesty and its consequences[1]

Introduction

Children's natural propensity to lie and to keep secrets early on (Lee et al., 2014) can lead to decreased trustworthiness and might have a negative impact on social relationships. One salient way of achieving that is by sharing stories about the consequences of honesty and dishonesty (Lee et al., 2014). From an early age, parents and teachers tell moral stories and fables to children, in order to convey cultural values and to instill moral behaviors (Henderson & May, 2005; Kim et al., 2006). Despite their widespread use, to our knowledge, there are few studies demonstrating the positive influence of moral stories on children's perception about honesty (Lee et al., 2014; Talwar et al., 2016). Moreover, moral stories potentially help children develop moral commitments to certain deontological rules depicted in the story, as well as emphasize the value of certain moral virtues. How children's (and their parents') own preexisting perceptions of the consequences of expected confession further modulate this interplay between moral stories and deceptive behavior has not yet been investigated, and this is what the current study set out to do during a sensitive developmental window (preschool age), in which deception and its underlying socio-cognitive and moral abilities show particular advancement (Talwar & Crossman, 2011; Walczyk & Fargerson, 2019).

Expected confession and consequences- children's and parents' perspective

To our knowledge, there is little evidence regarding children's expected confession of a misdeed in hypothetical scenario. Even if preschool children perceive lying to be wrong and truthfulness to be right, there is no evidence that they will actually behave in this way (Bussey, 1999). There is evidence that children's moral evaluations of hypothetical deceptive scenarios were related to their lying behavior (Popliger et al., 2011; Talwar & Lee, 2008). However, to

date, no studies have investigated the connection between children's deceptive behavior and how they view an expected confession and its consequences.

Moreover, the congruence between the way children and their parents relate to an anticipated confession and to its expected consequences in a hypothetical scenario has not been systematically analyzed. Parents' socializing of deception is an important factor in the development of children's lying. Parents either directly teach their children that lying is mostly wrong, yet they model deception through their own lie-telling behaviors (Lavoie et al., 2016; Setoh et al., 2020). To our knowledge, there is no research directly examining the congruence between parents' and children's views on confessions of children's misdeeds and their consequences.

Current study

The current study aimed *to test whether moral stories promote honesty, focusing on a preschool sample of 3 to 6-year-olds* tested in their kindergarten environment.

A second aim was *to assess children's deceptive behavior.* This paradigm has the advantage of creating a naturalistic situation, in which children can choose to peek or not to peek. The moral stories we used were similar to those used by Lee et al. (2014) with a few adaptations: we changed the name of the protagonist, instead of "George Washington" we used "the Prince", a positive character that young children are often exposed to in stories they are being read. There were two experimental stories *The Prince and the cherry tree - positive* (emphasizing the positive consequences of honesty), *The Prince and the Cherry Tree - negative* (emphasizing the negative consequences of dishonesty), and the control story *The Tortoise and the Hare*. As in the original study, after the temptation resistance paradigm children were asked to tell the truth and to confess if they had peeked or not at the toy.

A third aim was *to further explore the connection between children's expected confession and its consequences in a hypothetical scenario describing a minor transgression and their actual lying behavior.* Instead of simply investigating attitudes towards predefined behaviors, we asked children to themselves predict if the vignette protagonist would confess (expected confession) and also to predict the consequences of the behavior. Additionally, parents also predicted their own child's confession/denial and consequences, in relation to the same imaginary misdeed. To our knowledge, this is the first study to investigate the congruence between parental and child expected confession and consequences.

We hypothesized the following:

- H1:We hypothesized that age predicts children's peeking behavior
- H2: We hypothesized that age would not predict children's lying behavior whereas the positive moral story would be more efficient in promoting honesty than the negative moral story and the control story, due to the perceived positive consequences of honesty in children of all ages.
- H3: We also hypothesized that the negative and control moral stories would not have a significant impact on children's honesty (Lee et al., 2014; Talwar et al., 2016)
- H4: Based on previous literature showing preschoolers' tendency to report a minor transgression and their positive evaluations of truthful behavior, we hypothesized children would expect the protagonist to confess
- H5: Also, since parents socialize children's deception, we expected children's and parents' reports to be congruent, both expecting the vignette protagonist to confess and anticipating similar consequences. Since the similarity between children's reports and the parents' reactions to the same vignette has not yet been empirically addressed, this remained an exploratory question
- H6: Lastly we also explored the connection between children's and parents' reported expected confession and its consequences and children's actual lying behavior.

Method

Participants

A total of 296 children between 3 and 6 years (M = 55.36 months, SD = 11.17) participated in this study. They were divided into 3 groups: 3 –year- olds (n = 107, mean age = 43.7 months, SD = 4.02; 63 girls, 4-year-olds (n = 88, mean age = 54.7 months, SD = 4.07; 39 girls, 5 and 6 year-olds (n = 101, mean age = 68.2 months, SD =4.9; 51 girls).

Procedure

We conducted our study in accordance with the ethical guidelines for research from the American Psychological Association, reflected in our university's conditions for research on human participants.

We used the modified temptation resistance paradigm (Talwar & Lee, 2002a) to examine children's lying. After obtaining parental consent, we individually assessed each child during a 20 minute session. The experimenter told the child they would play a guessing game in which

they had to guess the identity of a toy based on a sound. After playing the last sound, the experimenter said they would read a very interesting story, but they forgot the book in the car and had to go out and get it. Before leaving the room, the experimenter instructed children not to turn around and peek at the toy while they were away. A hidden camera recorded children's behavior.

After one minute, the experimenter, unaware of whether the child had peeked or not, re-entered the testing room, told the child not to turn around and covered the target toy with a cloth. Then, the child could turn around their chair.

Next, the experimenter read the moral story. Children were then assigned to one of three conditions, two experimental conditions *The Prince and the Cherry Tree-the positive story* or *The Prince and the Cherry Tree- the negative story* or one control condition *The Tortoise and the Hare*. *In The Prince and the Cherry Tree - positive* the prince tells his father the truth, when asked "Who has cut the cherry tree?", and, as a result, his father is happy. This story emphasizes the positive effect of honesty. In *The Prince and the Cherry Tree- negative,* the prince lies to his father, saying that he did not cut down the cherry tree, and, as a punishment, his father is very disappointed with him because he lied. This emphasizes the negative consequences of dishonesty. We closely followed the procedure used by Lee et al. (2014) and children who were reading the positive story were asked to be like the prince and to tell the truth, children who were reading the negative story were asked not to be like the prince in the story, and to tell the truth. Children in the control group were simply asked to tell the truth.

Two independent observers viewed the video recording of all the children, coding their peeking and their lying/ truth-telling. Inter-observer agreement was 100.

Expected confession/consequences –children's and parents' perspectives

We evaluated children's expected confession and its consequences using both child and parent report. The vignette read: "By mistake, one boy/girl drops a glass of water on the carpet". Our first question assessed children's expected confession: "What does the boy/girl do? Does he/she tell the mother?". Answers were coded with 0 (not confessed) or 1 (confessed). The second question evaluated children's expected consequences: "What do you think the mother would do if the boy/girl confessed?". After analyzing children's and parents' free responses, answers were coded with 0 (aversive consequences, for instance the mother would punish them) or 1 (non-aversive consequences, such as the mother would praise them).

Parents read the vignette and had to answer the same two questions as the child, thinking about what their own child would do or think in that situation.

Results

Age and Peeking Behaviour (Peeking versus Non-peeking) H1

Overall, 77% (227 of 296) children peeked at the target toy. Coding age as a group variable (similar to Lee et al., 2014). We performed a logistic regression with peeking behavior (0 = did not peek, 1 = peeked) as the predicted variable and age (in months) as the predictor. Significance was assessed by a Block Chi-Square test. The model showed that age (in months) was not a significant predictor of children's peeking behavior $\chi2(1, 296) = .830$, Nagelkerke $R^2 = .004$, $p = .362$.

Age, moral stories and peekers who lied/peekers who confessed (lying behavior) (H2 and 3)

Five of the 227 peekers did not provide an interpretable answer about their lying. Out of the remaining 222 peekers, 50.7% (n = 113) lied about peeking, while 49.3%, (n = 109) confessed about their peeking. We performed a logistic regression with lying behavior (0 = liars, 1 = confessors) as a predicted variable and age (in months) was entered on the first step, followed by moral story condition on the second step and by the age x condition interaction on the third step. The first model was significant, $\chi2(1, 222) = 4.880$, Nagelkerke $R^2 = .029$, $p = .027$. The model showed that age predicted the lie-telling behavior of children, b = - .028, SE = .013, Wald(1) = 4.772, odds ratio = 0.973, 95% confidence interval = [.949, .997], p = .029. The odds ratio indicated that with each month increase in age, children were 0.973 times less likely to confess. The second step of the model was not significant, $\chi2(2, 222) = .281$, Nagelkerke $R^2 = .031$, p = .869, nor the third step, $\chi2(2, 222)=1.160$, Nagelkerke $R^2 = .037$, p =.560. Moral story condition and the age x moral story condition interaction was not a significant predictor of peekers' lying behavior, age being the unique predictor of lying behavior.

In order to have a preliminary outlook on preschoolers' tendency to report a minor transgression and their positive evaluations of truthful behavior, we first report the descriptive results (H4).

Regarding children's expected confession, results showed that out of 256 children, 86 % would confess about the minor transgression. Similarly, out of 201 parents, 92% believed their children would confess. Out of 230 children, 75% expected aversive consequences, mostly punishment, from their mother, and just 25% expected non-aversive consequences, mostly

praise. In contrast, out of 192 parents, 31% reported their child would anticipate aversive consequences such as punishment and 69% believed their child would anticipate non-aversive consequences, mostly praise.

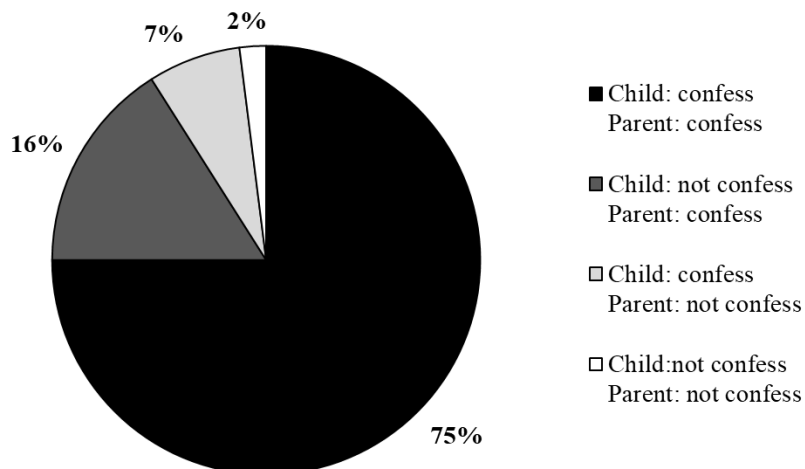**Figure 1.** *Children's and parents' reports on expected confession of the misdeed by the vignette protagonist*
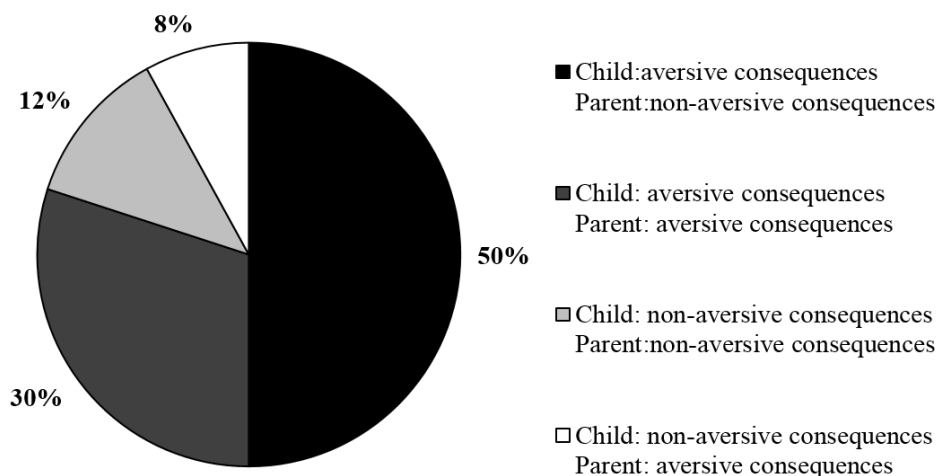

Figure 2. *Children's and parents' reports on expected consequences of the confession of the misdeed by the vignette protagonist*

Figure 1 shows children's and parents' matched reports regarding the confession of the vignette protagonist. We can observe that 75% parent-child dyads agreed the protagonist would confess to the minor transgression, whereas only 2% parent-child dyads agreed the protagonist would not confess to the minor transgression. *Figure 2* shows children's and parents' matched reports regarding their expected consequences. We can see from the figure that 50% parent-child dyads did not agree with the expected consequences, as children expected aversive consequences, mainly punishment for the misdeed, whereas parents believed their child would expect non-aversive consequences for truth-telling (H5).

Also, children's expected confessions and expected consequences were not related to their actual lying behavior.

Discussion

The aim of our study was to investigate the potential effect of moral stories on honesty, in a Romanian sample of preschoolers (3-to-6 year-olds), replicating the second experiment from Lee et al. (2014). Additionally, we explored the connection between children's expected confession in a hypothetical scenario, its expected consequences and children's actual lying behavior. Parents also reported their thoughts on their child's expected confession and on the expected consequences. Our main findings revealed that most children peeked at the target toy, and half of the peekers lied about their transgression. Age did not predict peeking behavior, but predicted lying behavior. Older preschoolers were more likely to lie. Moral stories did not have a significant effect on children's honesty. Children's expected confessions and expected consequences were not related to their actual lying behavior. Most parents and children expected that the protagonist of the vignette would confess to their minor transgression. While most children expected aversive consequences for the transgressions being discovered (punishment) most parents expected non-aversive ones, mainly praise.

Limits

A few caveats to our findings are warranted. First, we assessed children's expected confession and expected consequences after we had previously used the temptation resistance paradigm to examine peeking and lying behavior. We used just a single item based on a vignette to assess children's expected confession and also a single task, the resistance to temptation paradigm, to assess children's deceptive behavior. Future studies should use more complex and

contextually similar methods of assessing children's lying in relation to their perception of deception

Conclusions

Despite these limitations, our study adds important new findings regarding the development of deception. Our results suggest moral stories potentially lack a definitive impact on children's honesty. Despite their long historical use and they popularity among parents and educators, classic moral stories not always advance children's socio-moral development, as their message might not always be reflected into children's day to day behavior (Lee et al., 2014). More studies are needed to clarify their effect on children's deception at various ages and across different cultural backgrounds, using both real and fictional characters. Importantly, our results showed that older children showed a higher propensity to engage in deception following a minor transgression. Parents and educators should be mindful of this normative age-related increase and understand that children's deception at this age is not necessarily an indicator of problematic behavior.

The study also provides an innovative perspective on children's and parents' views of deception and their expected consequences for transgressions. These findings could shape parental and educational practices meant to encourage honesty. Both children and parents anticipate that the child would confess about a minor transgression. This shows that, despite the occasional documented propensity for deception (Walczyk & Fargerson, 2019), children recognize the importance of honesty and, at least hypothetically, expect others to be honest. This is encouraging for parents teaching children about honesty, as it shows children can endorse these practices, at least at the level of their declarative expectations regarding children's prototypical behavior. However, while children mostly anticipated punitive consequences, parents anticipated non-aversive ones. This incongruence in perception suggests parents should rely more on rewarding truth-telling rather than on punishing deception, in order to elicit honesty. Finally, given that we found no significant connection between children's anticipated confession and their deceptive behavior, parental and education practices can take into account this cognitive incongruence between anticipated and actual behavior. While young children still internalize social norms about honesty, there might be a developmental gap between what children think about lying and its consequences, and whether or not they actually decide to lie,

which is a decision based upon multiple criteria, many of them not even entering children's awareness (Walczyk & Fargerson, 2019).

3.3. Study 3. Predictors of individual differences in lie acceptability in adolescence: Exploring the influence of social desirability, callous unemotional traits and somatization[2]

Introduction

Lying represents a form of dishonesty which allows people to communicate false information with the intent to deceive others (Talwar & Crossman, 2011). During everyday interactions, lying is a commonly occurring behavior (DePaulo et al., 1996) which can be perceived as inappropriate, undesirable and potentially generating social conflicts. Researchers have reported that most people lie on average one to two times a day (Vrij, 2008), and those who reported daily lying were more likely to report a lower quality of life, lower school performance (lower GPAs), and poorer self-esteem (Grant et al., 2019).

One of the important reasons for individual differences in lying behavior is that some people relate to lying as being more acceptable than others. Lie acceptability is defined as an attitude toward lying that can vary along a continuum, from completely unacceptable to perfectly acceptable. Studies show that lie acceptability is influenced by various dimensions, such as *age (*Bussey, 1999*), or *gender* (Goosie, 2014).

It is essential that we study the factors which are associated with individual differences in lie acceptability if we are to better understand the mechanisms generating it and to design appropriate interventions to limit its disruptive potential for social interactions. This consideration is especially salient during the sensitive developmental window of adolescence, when frequent reliance on deception can become problematic (Talwar & Crossman, 2011). Children's lie telling emerges in preschool years as an early, normative aspect of development. As children become older and learn about social norms, they start to tell lies to avoid personal costs. However, lie-telling can become a problematic behavior as children reach late childhood and adolescence in terms of frequency or inappropriate use (Talwar & Crossman, 2011).

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As such, given the problematic aspect of lie-telling, especially in adolescence, and taking into consideration that lie acceptability is closely associated with lying, our research has focused on individual differences in lie acceptability as potential predictors of such maladaptive behaviors.

Current study

The present study aimed *to investigate predictors of individual differences in lie acceptability in the case of a sample of Romanian adolescents (14-19 years).* We aimed to examine predictors of individual differences in lie acceptability by looking at candidate variables such as callous-unemotional traits, gender, social desirability, and somatization, while controlling for mothers' education level, and family income. To our knowledge, this is one of the first studies which focused on a variety of individual differences associated with lie acceptability during the sensitive development window of adolescence.

We hypothesized the following: We hypothesized that the callousness of the ICU (and less so the unemotional dimension) will predict individual differences in lie acceptability (H1); We hypothesized that the uncaring dimensions of the ICU will predict individual differences in lie acceptability (H2); We also expected male adolescents, as compared to females, to manifest increased lie acceptability (H3); We predicted that higher social desirability would be negatively related to greater lie acceptability (H4); Lastly, we also aimed to explore if somatization predicts lie acceptability.

Method

Participants

The sample consisted of 167 adolescents (91 girls, 75 boys) enrolled in grades 9 to 12 ranging from 14 to 19 years ($M = 16.9$, $SD = 1.02$). The mean age for boys was 16.89 ($SD = 0.99$) and for girls, it was 16.93 ($SD = 1.05$).

Measures

The adolescents completed a brief questionnaire regarding demographic characteristics such as age, gender, parental occupation, parental education and family income.

Behavior Assessment Scale for Children, 2nd edition (BASC-2; Reynolds & Kamphaus, 2004; for the Romanian version see Mitrofan, Ion, & Iliescu, 2005*).* The BASC-2 is a standardized and norm-referenced rating scale that is used to assess the emotional and behavioral functioning via

self-perceptions of adolescents. Then the BASC- 2, Somatization (7 items) scale was administrated, which measures somatization complaints.

Inventory of Callous–Unemotional Traits (ICU; Frick 2004, RO Version – Roșan. The ICU is a self-report scale designed to assess callous and unemotional traits in youth.

Children's Social Desirability Scale (*CSD; Crandall, Crandall, & Katkovsky, 1965*). The scale is suitable for children from grade 3 to grade 12.

Revised Lie Acceptability Scale (*Oliveira & Levine, 2008*). The scale measures the individual-level variability in attitudes toward deception and contains 11 items .

Procedure

Before involving the adolescents` participation in the study, we obtained school approval and parental written informed consent.

Results

In order to investigate the contribution of different predictors to lie acceptability in our adolescent sample, we ran a three-step hierarchical regression with Lie Acceptability as a dependent variable. Missing data imputation was done via Expectation Maximization (EM) in SPSS. In the first Step we entered baseline variables such as mothers` education level, family income and adolescent gender. In the second Step, we entered social desirability. In the third Step, we entered the internal dimensions of callousness, uncaring, unemotional and somatization. The regression model included at Step one significantly predicted Lie acceptability, $F(3,163) = 7.75$, p = .000, and accounted for 12.5% of the variation in Lie Acceptability. Out of all the predictors included in Step 1, only adolescent gender ($\beta = .24$, $p = .003$) significantly predicted Lie Acceptability. More specifically, males had a more positive attitude towards lying.

The variables included in Step 2 explained an additional 3.4%, with ΔR^2 being significant, $F(1, 162) = 6.524$, p = .012. Out of the variables included in Step 2, Adolescent Gender ($\beta = .25$, $p = .002$) and Social Desirability ($\beta = -.19$, $p = .012$) significantly predicted Lie Acceptability.

The variables included in Step 3 explained an additional 15.5%, with ΔR^2 being significant, $F(4, 158) = 8.916$, p = .000. Out of the variables included in Step 3, Adolescent Gender ($\beta = .21$, $p = .005$), Callousness ($\beta = .16$, $p = .047$), Uncaring ($\beta = .30$, $p = .000$), and Somatization ($\beta = .19$, $p = .008$) significantly predicted Lie Acceptability. In addition to gender, adolescents who were high in callousness, uncaring or on somatization also tended to consider that lying was more acceptable.

Discussion

The aim of our study was to investigate the predictors of individual differences in lie acceptability in a sample of Romanian adolescents (14-19 years old). More specifically, we aimed to examine if lie acceptability was predicted by individual differences in callous-unemotional traits, gender, social desirability, and somatization, while controlling for mothers' education level and family income. First, our findings showed that callousness and uncaring dimension, not the unemotional dimension of the CU traits predicted lie acceptability. To our knowledge, our work is the first to study the three dimensions of the CU traits, in predicting lie acceptability. Adolescents with these dimensions display a lack of guilt and remorse through behavior, and are more likely to accept lying as a tool for obtaining different personal goals. Second, gender predicted lie acceptability, more specifically, adolescent males were more accepting of lying than females. Third, we expected social desirability to predict lie acceptability, but we failed to show relationship between lying an social desirability. One possible explanation could be our measure of social desirability, that might not be sensitive enough to identify more nuanced individual differences in social desirability. Fourth, we included in our study a novel predictor of lie acceptability, somatization. We found out that lie acceptability was also predicted by somatization. Our results are consistent with literature regarding somatization disorder and lying, which suggested that sometimes somatization symptoms can be manifested as a form of deceit which frequently appears with the function of obtaining several benefits (e.g., medical care or obtaining the benefits of the "sick" role; Ford, 2004). In this way, somatization might be a form of deceit which frequently appears with the function of obtaining several benefits. To sum up, school counselor should be aware of these predictors of lie acceptability in order to shape educational practices meant to reduce deceptive behavior in adolescent.

Our results could shape parental and educational practices meant to reduce deceptive behavior in adolescents. Techniques which help adolescents with callous-unemotional traits to be sensitive to the benefits and costs of telling the truth, should be more focused on by school counselors. Also, school counselors could use methods like exposing adolescents to models who are rewarded for truth-telling, or exposing them to situations in which the consequences of lie-telling are evident. Literature shows that increased lying behavior toward parents was associated with greater psychosocial maladjustements, psychopathic attributes. (Setoh et al., 2020). In this case, parents could be an important factor in preventing deceptive behavior in adolescents.

Future studies should focus in designing methods for preventing psychosocial maladjustments. Our findings bring in the center of the literature the fact that a specific population, namely adolescents (men) with high callousness and uncaring traits, and higher somatization, are a population "at risk" which should be taken into account, when we are talking about lie acceptability and deceptive behavior.

4. IMPLICATIONS AND CONCLUSIONS

The present doctoral thesis included three scientific studies which focused on investigating deception and attitudes toward deception in young children, adolescents and their parents.

Through our thesis we aimed in our first step to examine perceptions of lies and truths in young children (4-6 years) and to measure parenting by lying. Further, after this step, in our second study we assessed the actual lie-telling of children, using an experimental design, we tested whether moral stories promote honesty in a preschool sample of 3 to 6-year-olds and we examined the congruence between children' and parents' reports of children's expected confession and its consequences on a hypothetical scenario. Lastly, we examined lie acceptability in adolescence, as in this stage, lie-telling can become a problem behavior. The summary of our present thesis is presented in Table 1.

Table 1. *Summary of empirical contribution of the thesis.*

Nr	Variables	Population age (N)	Instrument	Analytical approach	Main results and conclusions
Study1	Parental Instrumental lies Parent's lie acceptability Children's deceptive vignettes Children's age Parent's report about children's lie-telling behavior Parent's reports about their explicit lie instruction about lie-telling	4-6 y (N=59) + parents	*Parenting by lying* (Heyman et al., 2013) *Parent's approval of parenting by lying* (Heyman et al., 2013) *Child lie acceptability* (Heyman et al., 2013) *Revised Lie Acceptability Scale* (Oliveira & Levien, 2008) Parents were asked questions about their children's lie-telling and about their explicit lie instruction about lie-telling: Deceptive Vignettes (Bussey, 1999) Children were asked if they usually lie and to respond to what it means to lie	Descriptive analysis Correlational analysis Regression analysis	1. Most parents lie to their children. 2. Parent's tendency to approve of parenting by lying and explicit lie instruction about lie-telling differ, as 93 % of parents instruct their children not to say lies, but they approve of parenting by lying. 3. Children of 5 year-olds and older are more likely to identify correctly lies in deceptive vignettes, than children of 4 year-olds. 4. Children's moral evaluation of lies revealed mostly negative rating for lie-telling, whereas children's moral evaluation of truth revealed mostly positive rating for truth-telling, but we did not find age differences. 5. Children of 5 year-olds and older are more likely to rate punishment for lie deceptive vignettes, than children of 4 year-olds. 6. Parenting by lying is not associated to children's perceptions of lies and truths.
Study 2	Peeking behavior Lying behavior Children's age Moral story condition Comprehension question	3-6 y (N=296)	The modified temptation resistance paradigm Moral stories (positive-*The Prince and the Cherry Tree-the positive story*;	Descriptive analysis Logistic regression Cross-tabulation analysis	1. Most children peeked at the target toy, and half of the peekers lied about the transgression 2.Age predicted lying behavior 3.Moral stories did not have an effect on children's honesty.

	Expected confession/ consequences children-parent report		negative- *The Prince and the Cherry Tree- the negative story* and control story *The Tortoise and the Hare*). Misdeed Vignette		4.Children's expected confession and consequences were not related to their actual lying behavior. 5.Most children expected aversive consequences for the protagonist confession (punishment), while most parents expected non-aversive, positive ones (mainly praise and encouragement).
Study 3	Lie acceptability Callous-unemotional traits Gender Social Desirability Somatization Mother's education level Family income	14-19 y (N=167)	*Behavior Assessment Scale for Children, 2nd edition (BASC-2;* Reynolds & Kamphaus, 2004; *Inventory of Callous–Unemotional Traits* (ICU; Frick 2004, *Children's Social Desirability Scale* (CSD; Crandall et al., 1965 *Revised Lie Acceptability Scale* (Oliveira & Levine, 2008).	Correlation analysis Regression analysis	1.Callousness and uncaring dimensions (not the unemotional dimension) of the CU predicted lie acceptability. 2.Males considered that lying was more acceptable than females 3.Social desirability did not predict lie acceptability 4.Somatization predicts lie acceptability.

4.1. Methodological contributions

From a methodological point of view, an important contribution of this thesis is that it combines the quantitative methodology with the qualitative one.

Second, another important contribution of our thesis is represented by the use of experiment from Study 2. We used the resistance to temptation paradigm, a well known paradigm which is a natural condition, which examines children's natural propensity to lying. Using experiments, as a scientific method is really important and valuable.

Third, our measure of vignettes in study 2 is an innovative method of evaluating children's expected confession and consequences using both child and parent report.Another important aspect is that children and parents were asked to give free responses and after answers were coded at the final in two categories: aversive consequences and nonaversive consequences.

4.2. Limitations

Our thesis has several limitations and we explicitly assumed specific limitations for each study. First, the sample of our thesis is one of convenience and therefore generalization must be made with caution. Second, we assessed only the immediate effect of moral story on children's honesty, without using methods with lasting effects on children's honesty. Third, study 1 was mainly correlational, thus it prevented us to draw causality, and prospective longitudinal studies might be able to resolve these issues. Fourth, we used self-reports measures, which might not be the best way to discover people's attitudes and behaviors.

4.3. Future directions

The contributions of this paper helps us to the advancement of empirical psychological knowledge about deception and attitudes toward lies and opens up new directions of research that can be explored. Forward studies should evaluate the long-term effects of methods for promoting honesty through longitudinal research. In our research we examined only one time the effect of moral stories and immediately after they heard the stories.

It it would be also extremely important to assess methods to promote honesty and children's perceptions of truth-telling and lying in different cultural backgrounds, different social environments, ethical backgrounds, different religious communities and ethnic groups.

Further exploration regards the temptation resistance paradigm from our experiment, specifically the procedure in which we investigated children's minor transgression. Future studies ought to examine the influence of moral stories on children's more serious and deliberate wrongdoings. It would be helpful to find out the effect of moral stories or other methods of promoting honesty on events more morally or emotionally charged.

4.4. Practical implications

Educational and parenting contributions:

First, one important recommendation could refer to the use of moral stories in young children. Moral stories have been used for years, and simply because of their long history use it does not mean that they are productive in promoting honesty. As literature also shows, our research demonstrated that simply reading children classical moral stories does not change their honest behavior, as it is not reflected in their actual lie-telling behavior.

Another recommendation refers to the practical implication in parenting. Our different reports of children and parents regarding the consequences of confession should make parents to utilize more rewards for truth-telling rather that punishing deception, in order to elicit honesty. Also, parents should also make the difference between a child's wrongdoing punished by parent but being unconfessed by the child, and in contrast, a wrongdoing punished but in the same time being confessed by the child. Parents should make differences between them and reward children who confessed their wrongdoing. Children should deal with the cost of not confessing it.

Finally, lying can be seen as a lack of strategy in problem-solving, in a concrete situation. Someone can lie in situations in which they fear to say the truth, because he/she can't deal with the situation, having a lack of self-regulating behavior and social immaturity. Lying can be also be seen as a strategy to reduce the negative effects of conflict with others, and in time, becomes part of a pattern of maladjustment. As educational recommendation professional workers should focus on problem-solving strategies in different contexts and training on asertiveness, and social abilities. They could develop activities and trainings in order to develop the abilities. School counselor should be aware of the somatization symptoms that could appear in lying, identify the consequences and teach them another perspective. Our results could shape the development of programms meant to prevent such symptoms.

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