

The Tendency to Lie and Make Impulsive Decisions Based on Reliability among Children

Ages 5-10

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Abstract

Unreliability in the social environment influences an individual to mistrust their peers. Lying is categorized as intentionally promoting a false statement in order to deceive others. Impulsivity is defined as making rash choices without prior thought. No previous research has investigated reliability in tandem with its effects on lying and impulsivity. Most investigations in this area have focused on lying or impulsivity individually without examining the relationship between the pair of attributes. Additionally, research exploring this potential relationship in children is necessary. Childhood, ages 5 to 10, is a key developmental stage in a person's life. These developmental years have been shown to influence behavior and mature choices in both adolescence and adulthood. It was hypothesized that reliability in the environment affects a child's tendency to lie, make impulsive choices, and develop techniques for deception and decision making. Children ages 5 to 10 were randomly assigned to two different groups (reliable and unreliable). Each child individually responded to a variety of behavioral tasks which measured their propensity to lie and make impulsive decisions utilizing the marshmallow task, moral disengagement task and lying vignettes. This research found that when a child was placed in an unreliable environment, they lack self-control and lie when confronted by a peer. Children tend to have a strong grasp on morality regardless of what type of condition they are placed in. Additionally, children lack the ability to form memories, which prevents them from recalling how many lies they have told in the past.

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Introduction

Lying, or deception, is defined as the promotion of an intentionally false statement. Previous research has shown that lies “violate moral rules” or are utilized typically “to benefit oneself at the expense of others.”^{16,33} Lying can lead to dangerous behaviors within society, as well as an antisocial lifestyle. Researchers often focus on how lying becomes integrated within normal life, as well as how, over time, the tendency to lie decreases. Compared data by Serota et al. in 2010 and Levine et al. in 2013 found that as age increases, the need or compulsion to lie decreases. Comparative data of a positive exponential model found data to be consistent amongst both hypotheses.^{29,36} Levine et al. (2013) found that teenagers, ages 14-18, told an average of 4 lies per day, while Serota et al. (2010) found that adults, ages 18 and over, told an average of 1.5 lies per day.^{29,36} However, convergent data analysis with the two studies amongst children performing self-reports surrounding lying has not yet occurred.^{29,36} Furthermore, it is still highly suggested that the younger a person is, the more likely they are to tell a lie throughout their day.^{29,36} The decrease in lying could be due to morality increasing as a person becomes older. The need to lie within a social, educational, or work environment is not as acceptable or as dire during adulthood when compared to childhood. Lying propensity may be associated with cognitive, emotional, and moral maturity as well. These changes in mind functionality develop with age and are more sustainable within adulthood.^{9,18,36}

Moral disengagement focuses on moral justifications, euphemistic language, advantageous comparisons, displacement and diffusion of responsibility, and minimizing consequences.^{4,6,7,32} Moral justification relates to the reasoning behind actions and words that a person may rely on in order to explain a certain aspect of their life.²⁷ Moral justifications can be

utilized to determine true intentions of a person's speech and behavior. Euphemistic language relates to the diction choice a person makes to express ideas or address their peers.³²

Advantageous comparisons relates to weighing the benefits and deficits of actions, words, and or opportunities.¹¹ Displacement and diffusion of responsibility relates to the way in which a person prioritizes their chores, work, or any matter of importance and delegate their problems amongst themselves or others.¹¹ Minimizing consequences relates to going through particular tasks in a responsible manner in order to minimize negative outcomes.⁵ Moral disengagement can both lead to or prevent lying as found by Doyle et al. in 2018.¹⁷ In this child-based study, a moral disengagement task was used to assess current morality and change behavior towards lying.¹⁷ Then, two vignettes involving telling a coached versus non-coached lie were given.¹⁷ The character in the story either lied for the benefit of someone else or for themselves.¹⁷ The participants then stated whether they would have lied or not in the situation presented by the story.¹⁷ Despite results being insignificant, the younger children, ages 6-7, told more lies than children ages 10-11.¹⁷

Reliability is related to how stable and secure a person feels within their environment.²⁵ Previous research has found that if a proctor lies about a potential aspect of the methodology to a participant, mindset and feelings are altered.²⁵ Lying can cause distrust and therefore force a person to feel less confident in the people around them.²⁵ Additionally, lying can influence a loss of sense of morality for decision-making.²⁵ Lack of trust in the environment negatively impacts self-control and may cause a greater tendency toward impulsive choices.²⁵ Kidd et al. in 2013 found that if a child is placed in an unreliable environment, that child will exhibit less self-control.²⁵

Impulsivity is categorized as making decisions without prior thought.^{19,22,39} Impulsivity can result in substance abuse, life-harming decisions, and often imprisonment.^{19,22,39} Neurologists have found that adolescents with higher testosterone levels, regardless of gender, have an inclination to act impulsively.^{14,26} Puberty, environmental factors, physical or mental abuse, and peer pressure can impact adolescents and cause them to act impulsively.^{14,26} Bromberg (2015) examined the use of an episodic thinking task and its ability to change impulsivity.¹⁰ Using the Episodic Future Thinking Task (EFTT), participants were asked to reflect on and write about past events, then discuss potential future events based on what was recalled.¹⁰ Results found that the EFTT was correlated with less impulsive choices involving the Delayed Discounting task (DD).¹⁰ The DD task is the most widely used non-behavioral questionnaire that measures impulsivity, focusing on specific time frames to a set level of reward.^{10,24} In previous research involving teenagers and the EFTT and DD tasks, most of the participants were deemed to be “somewhat non-impulsive” or “non-impulsive.”¹² Self-efficacy did not play a major role in how impulsive the participant felt following induction.¹² The High Self-Efficacy and Low Self-Efficacy conditions both had the same mean score ($m = 8.5714$), indicating that the results were insignificant.¹² Other stressors must be responsible for adolescent impulsivity other than the anticipated self-efficacy effect.¹²

Impulsivity can also be measured through the use of the Marshmallow Task.²⁸ The task is specifically designed to be utilized within a child demographic.²⁸ The task presents the child with sweet treats such as a marshmallow, cookie, or pretzel.²⁸ The child receives only one of their chosen snack, then they are told that they can either eat the treat now or wait several minutes while the proctor leaves the room.²⁸ The child will be rewarded with a second treat if they do not

eat while the proctor is gone.²⁸ The task measures self-control and delayed gratification within children.²⁸ If the child eats the treat right away, they have higher impulsivity and lower self-control.²⁸ If they hold off on eating for several minutes, they have lower impulsivity and higher self-control.²⁸ However, if the child eats while the proctor is gone, they are not rewarded with a second treat and are regarded as impulsive.²⁸ The Marshmallow Task has found a correlation between children who pass the task and adults who have greater success.²⁸ The practice of self-control as a child, especially within the task, demonstrates patience and the ability to wait for a reward.²⁸ The behavior is continued into adulthood and is associated with higher success.²⁸

Children are a viable demographic to research due to the fact that the mind and brain are at its most primitive stages of development.¹⁵ Childhood is identified as ages 5-10.¹⁵ Children are studied in relation to stress, anxiety, memory retention, problem-solving, self-efficacy, reliability in their environment and impulsivity.¹⁵ These factors can play a role in how the mind is programmed for future behaviors.¹⁵ A plethora of research has found that within children, having a higher self-efficacy relates to being more detailed within episodic writing and being less impulsive.²¹ In relation to moral disengagement and lying, the younger a child is, the more likely they are to lie or not be as attentive to moral standards.^{13,17} Children that are faced with an unreliable environment may lack self-control and even feel a great propensity to lie.^{17,27} However, most parenting techniques emphasize the improper morality to deception which can potentially explain the negative correlation of the number of lies per day versus increasing age.^{13,17}

Between the ages of 5 and 10, children are undergoing key processes within cognitive and mental development that can set the stage for adulthood behaviors and actions.¹⁵ Little research has investigated how comparative analysis of self-report lies in children correlate to the data found by separate studies performed on adults and teenagers by Serota and Levine, respectively.^{29,36} Additionally, no study has examined how reliability can impact impulsivity as well as the propensity to lie within children. Using a combination of self-report tasks, written episodic writing, and visual stimuli, researchers will be able to gauge better how the child-mind responds to lying and impulsivity dependent on a reliability group. The reliable group will be led by a non-lying proctor while the unreliable group will be led by a lying proctor.²⁵ The two extremes will allow for an analysis of how reliability influences a child to deceive or make rash choices.²⁵

Gap in Research

Research over the last decade performed by Serota et al. in 2010 and Levine et al. in 2013 has found a correlation between age and prevalence of lying.^{29,36} The demographics focused on, however, were adults, ages 18 and older, and high schoolers, ages 14 to 18.^{29,36} An exponential model, found that daily lying frequency decreases with age.^{29,36} Minimal research has been performed to investigate how children, ages 5-10, may respond to lying patterns. No study has explored if children will lie the more often with the same model given by Serota and Levine and whether this demographic will result in similar trends.^{29,36} In conjunction, few studies have seen how impulsivity amongst children could affect behavior. Age could play a major role in how children think about their future choices and how quickly they are able to make decisions. Lying and impulsivity among children is often not tested together using similar models.

Statement of Purpose

As cognitive and motor functions are still being developed in primitive stages, it is essential that children be tested in relation to their mental abilities to see how certain factors are correlated. Lying and impulsive decision making could be a hallmark of a child's development and potentially be at its peak prevalence between the ages of 5-10. This research aims to investigate how children make decisions and respond to prompts involving lying. The results of this study could allow adults to gain a better sense of parenting techniques to employ as well as how to properly teach children to be truthful and make decisions. Children are expected to be more impulsive when placed in a low, unreliable condition. However, children responding to the reliability task are predicted to be less impulsive. In comparison to data from Serota and Levine, children ages 5-10 will have the highest number of lies told daily. Children are expected to tell 5 or more lies in one day.^{29,36} It was hypothesized that children in the reliable group would tell fewer lies than those in the unreliable group.

Methods

1.1 Demographics

Both males and females were studied all within the age range of 5 to 10 years old. Ten children from the local area participated through voluntary basis. The child's parents were notified of the research opportunity through letters sent home and involvement in Elementary School Open House Nights in local school districts. The participant's parent/guardian was asked to make a note of any food allergies the student may have during the completion of the Experimental Consent Form.

2.1 Method of Data Collection

2.2 Recruitment of Participants

Before a child received surveys, both consent forms (HIPAA Consent Form and Experimental Consent Form) were completed and returned. Participants were required to complete all surveys. After all surveys were completed, the data was de-identified and analyzed. Children were interviewed one time at Pawling Library. Each session was approximately 30 minutes.

2.3 Consent Forms

Two consent forms were signed, completed, and returned by a parent/guardian prior to participation in the study. The HIPAA Consent Form required the parent/guardian to report any health issues the child may have. The Experimental Consent Form included a brief description of the research, risks, and stipulations. (Appendix 1 and 2)

2.4 Debriefing

Parents were notified of what group their child was in after the experimentation process concluded. The children were told what the purpose of the study was and praised for their participation. Parents signed a Debriefing Contract after the process was complete.

3.1 Measures

3.2 Lie Self-Report Surveys

Serota et al. 's 2010 study and Levine et al. 's 2013 study investigating the tendency to lie utilized the use of self-report lying grids. Participants were given a 5 x 2 table that correlated to the number of lies told in the past 24-hours in relation to two stipulations. The lies were told to either family members, friends, teachers, acquaintances, or strangers through either face-to-face conversation or mediated situations. For example, if a child told 2 lies to a friend over social

media, they would fill out a "2" in the friends x mediated situation box. The participants then had to self-report the number of lies they had told based on the various categories.

3.3 Reliability Task

Participants were randomly assigned to one of two conditions (reliable or unreliable). Each participant was told they would be completing an art project by drawing a picture of their favorite summer activity with various art supplies. The proctors of both groups instructed the child not to use the markers because they would provide brand new ones. ("If you wait, I will go get you brand new markers.") In the reliable group, the proctor would leave the room for 3 minutes and return with brand new markers. In the unreliable group, the proctor would leave the room for 3 minutes then, after they had returned, tell the child that they lied and only had old markers to use. ("I was just kidding. You can only use the old markers.")

3.4 Marshmallow Task

Participants were shown marshmallows, cookies, and pretzels. The participants were allowed to take one treat of their choosing. They were instructed that they could eat the treat "now" or, if they waited several minutes while the researcher stepped out of the room, they could have an additional treat. A bell was in the room with the participant and participants had the ability to ring the bell to have the researcher come back in, forfeiting the second treat. The researcher left the room for five minutes. If the participant ate the treat while the researcher was gone, the participant was not given a second treat.

3.5 Lie-telling moral disengagement scale

Participants were presented with 20 prompts surrounding topics of moral disengagement. Questions used were reworded and modified slightly from the set provided by Paciello, et al. in

2008 to be appropriate for this age demographic.²⁹ Some questions were removed due to their inability to be answered by a child. One prompt used, for example, was “Slapping and shoving someone is just a way of joking.”²⁹ The child was asked to read each prompt and respond using a Likert scale based on how much they agreed with the statement. 1 correlated to “do not agree at all” and 5 correlated to “completely agree.”

3.6 Lying Vignettes

Two vignettes were given to participants based on staged events depicted in research performed by Fogliati, et al. in 2014 and Doyle, et al. in 2018.^{17,20} The stories outlined two different events that surrounded a transgression. In the stories, a child character witnessed or did not witness a transgression. Then, the child in the story was coached to lie about whether they had seen the transgression or not. The two vignettes exemplify coached false denial and coached false allegation lying. To ensure the children understood the story, a small set of comprehension questions were given. If the answers were correct, the child would be asked about the child in the story’s decision and then, “If that were you in the story, what would you say?” The participant answered if they would lie or not.

4.1 Data Destruction

Data was collected online via Google Forms. All data was de-identified and stored on a secure file. In 2020, the data was destroyed by removal and permanent deletion of the file.

Results/Data Analysis

Lie Self-Report Surveys

Each stipulation for the lie, based around whom it was told to and how it was told, was averaged across all participants. Because the reliability induction had not yet occurred, these

averages were an indicator for the general child population on how many lies are told each day. It was found that lies were only told in-person and none were told in another way. Participants that were age 10 told the most lies in the past 24 hours. Results indicate that boys told more lies than girls.

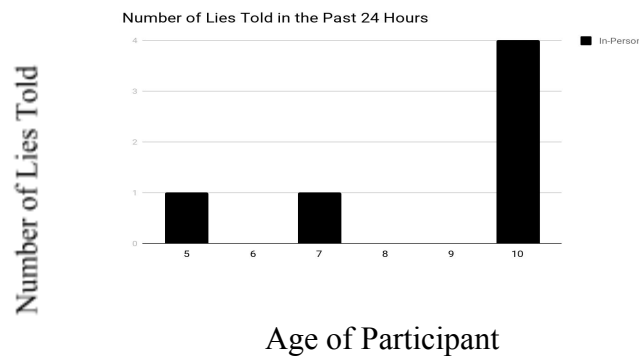


Figure 1: *Number of Lies Told in the Past 24 Hours* This graph compares the number of lies told by the individual age of the children.

Reliability Tasks

Participants were randomly selected for the two groups. Group A served as the experimental group and was placed in an unreliable, non-attentive environment. Group B served as the control group and was placed in a reliable, supportive environment. There were 5 participants in each group. There were four 5-year-olds, one 6-year-old, two 7-year-olds, one, 8-year-old, no 9-year-olds, and 2 ten-year-olds. There were 6 males and 4 females tested.

Reliable (Control) Group

Age/Gender	Male	Female
5	1	1
6	1	0
7	0	0
8	0	1
9	0	0

10	1	0
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Table 1: Reliable (Control) Group Demographics The table shows the number of children in the group dependent on their age and gender.

Unreliable (Experimental Group)

Age/Gender	Male	Female
5	1	1
6	0	0
7	1	1
8	0	0
9	0	0
10	1	0

Table 2: Unreliable (Experimental) Group Demographics The table shows the number of children in the group dependent on their age and gender.

Marshmallow Task

If the participant only ate one snack, they were given a +1 score. If the participant ate two snacks, they were given a +2 score. Within the individual reliability conditions, the number of participants to eat one or two treats were recorded. Results demonstrate that when children were exposed to the unreliable environment, they were more impulsive, and ate only one treat when compared to the reliable group.

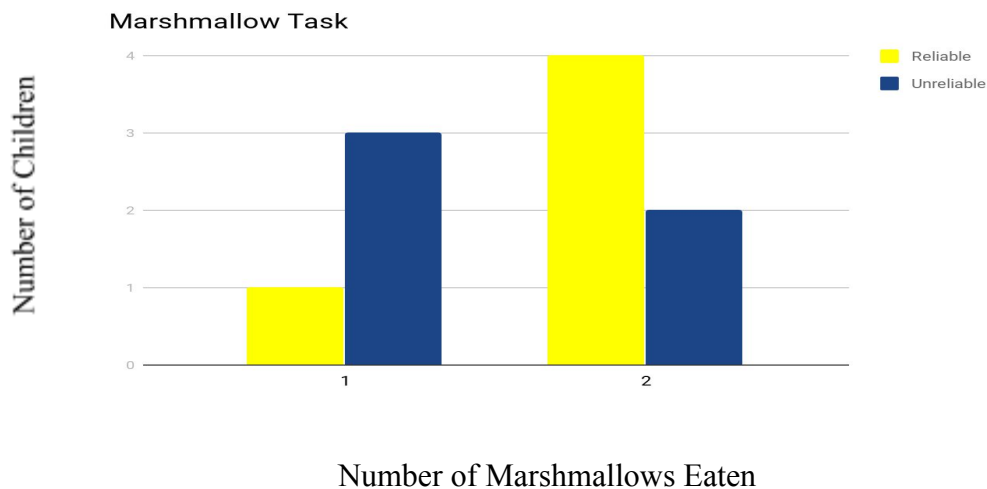


Figure 2: Marshmallow Task This graph shows the number of marshmallows eaten by each child dependent on their randomly assigned group.

Lie-telling moral disengagement scale

For each question, the points generated from the Likert scale were averaged dependent on individual reliability condition. Mean score comparisons between the two groups for each question showed how reliability affects the morality of the participants.

Child-Modified Lie-telling moral disengagement scale statements	Mean Reliable Group Score	Mean Unreliable Group Score
It is alright to get mean to protect your friends.	1.2	2.6
Slapping and shoving someone is just a way of joking.	1.8	1
Breaking someone's toy is no big deal.	2	3.2
It is not bad to tell small lies because they don't hurt anyone.	3	2.8
Some people deserve to be treated badly.	2	1.8
It is alright to be mean to someone who speaks badly about you.	3.2	2.4

It is okay to hit mean kids because you are just teaching them "a lesson."	2	1
Stealing some money or candy is not too serious compared to people who steal a lot of money or candy.	1.6	3.2
Kids do not mind being teased because it shows other kids have interest in them.	1.2	1.6
It is okay to treat someone badly if they behave like an animal.	1	1.6
If kids don't pay attention to where they leave their toys, it is their own fault if they get stolen.	2.8	2.6
It is alright to fight or get angry when your friends are getting picked on.	3	2.6
Taking someone's toy without their permission is just "borrowing it."	1.4	2
It is not serious to be mean to a friend because beating him/her up is worse.	1.2	2.4
Kids can't be blamed for using bad words when all their friends do it.	1.4	2
Teasing someone does not really hurt him/her.	1.6	1
Someone who is annoying does not deserve respect.	2.2	2.4
It is alright to lie to keep your friends out of trouble.	1.6	2.8
Compared to other bad things people do, taking an object from a store without paying for it is not very serious.	2.4	1.8
Being mean to others does not hurt anyone.	1	1

Table 3: *Child-Modified Lie-telling moral disengagement scale statements* This table compares the mean group scores of each condition with each question on the LTMD scale

Lying Vignettes

All participants correctly answered all 6 reading comprehension questions. If the participant said they would lie, they were given a +1 score. The scores were then totaled together for both vignettes dependent on reliability condition. The total scores in terms of lies told per group were compared. Results show that children in the unreliable group are more likely to lie when coached by a friend, while the reliable group lied minimally in both situations.

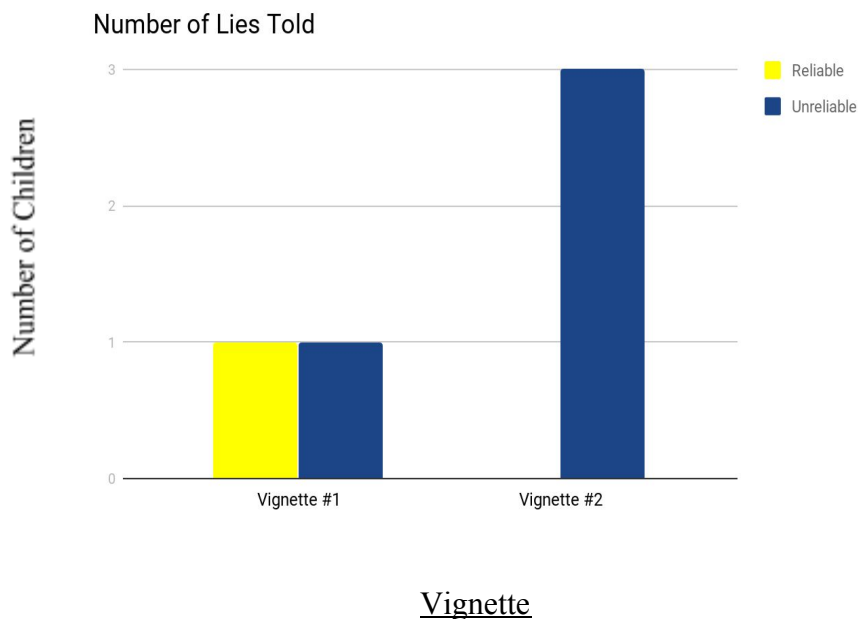


Figure 3: Lying Vignettes This graph shows the number of lies told in each vignette dependent on reliability condition.

Twin Analysis

During data collection, it was found that two sets of twins were present within the participant sample. The two sets were composed of GIRL/GIRL and BOY/BOY both aged 5 years old. One twin was placed in the unreliable group while the other was placed in the reliable. Although this was not the main intention of the study, the ability to view the differences between twin behaviors was accessible.

GIRL/GIRL

Neither of the girls said they lied in the past two hours. Both girls ate the number of treats as predicted for their group, the reliable eating two and the unreliable eating one. Both girls chose mainly “strongly disagree” for their moral disengagement responses. Their similar answers

can be due to their upbringing and their ability to work with their proctor's behavior. The girl in the unreliable group lied about vignette #2 while the reliable group girl did not lie at all.

BOY/BOY

One of the boys said they lied in person in the past 24 hours while the other did not. Both boys ate the number of treats as predicted for their group, the reliable eating two and the unreliable eating one. The boy placed in the unreliable group "strongly agreed" with many of the moral disengagement questions, showing his morality was not strong for both physical and emotional situations. However, this was also evident to be the same for the boy placed in the reliable group, showing that this particular aspect of the reliability induction did not alter the morality of the boys. The boy in the unreliable group lied about vignette #2 while the reliable group boy did not lie at all, just like the female twins.

Discussion

Childhood sets the behavioral and emotional foundation that a person continues throughout their lifetime. If a child fails to learn the basic and correct ways to process emotions and handle interventions with others, they may fall victim to several issues such as mental disorders or a poor relationship with their environment. Research on children focuses on a plethora of mental aspects, however, no study has combined a reliable environment's influence on the propensity to tell lies and make impulsive decisions. Dependent on the surroundings a child grows up in, their lie-telling and choices will cause a negative, less empathic lifestyle.

Lie Self-Report Surveys

The data gathered was self-report and was more scattered than hypothesized. Younger children, ages 5-6, do not have a great ability to recollect memories as their brain structure and

function are still being built. Due to their primitive brain structure, it was difficult for the children to recall if they had told any lies in the past 24 hours. However, as the children got older, between the ages of 7-10, they were able to recall better. These children reported an average number of lies told in the past 24 hours at about 0.6 lies. In comparison to teenagers who tell an average of 4 lies per day and adults that tell an average of 1.5 lies per day, children ages 5-10 tell 0.6 lies per day and always in-person versus any other form of communication. This is most likely due to the fact that their moral compass is still being formed and are unaware of the full consequences of lying. Potentially, the average number is higher; however, the lack of memory recollection ability in younger children may prevent the real average number to be impossible to determine. Due to these factors, the hypothesis was not supported.

Marshmallow Task

As predicted, children placed in a reliable environment, had more self-control and ate two treats after five minutes of waiting. Children in the unreliable condition possessed less self-control and chose the immediate option of one treat. The results coincide with that found in previous research. If a child feels supported and comfortable with the people around them and in the overall environment, their decision-making will be more thought out and less impulsive. Although some of the children chose to have one more or one less marshmallow dependent on their group, this can be due to the fact that some children appeared to be less affected by the conditions versus others. Some children, when asked how they felt during the experimentation, said they could not decipher over-enthusiastic behavior or more cold behavior (dependent on their group) from their proctor. In future research, proctors should use more specific language with either kinder or harsher connotations. Overall, however, children placed in the unreliable

group exhibited less self-control and a higher propensity to make impulsive choices, supporting the hypothesis.

Lie-telling moral disengagement scale

Moral disengagement questions were asked in order to investigate how ethical a child was dependent on the environment they were randomly placed in. The results were somewhat not anticipated. The unreliable group scored higher in ten questions. The reliable group scored higher in nine questions. One question was answered with the same score among both groups. The unreliable group appeared to score higher with questions that surrounded stealing, lying, physical fighting. The reliable group answered higher with questions regarding emotional crudeness such as yelling at someone. However, both groups scored the same and agreed that being mean to others does cause the person to become hurt. In the Likert scale, the numbers never exceeded more than a 3.2. Individual scores varied from being low extremes to high extremes. Therefore, most children did have some gauge on a proper moral compass, regardless of their group.

As for the reliable group scoring higher than the unreliable group, this could be due to the emotional versus physical nature of the questions. The reliable group was more easily ready to be verbal to defend the emotions of others while the unreliable group would rather get physical. The reliable group may have felt more emotionally in control and would rather be willing to defend theirs or other's emotions. On the other hand, the unreliable group was in a generally cold environment and could have the urge to combat their environment physical. Regardless, most children appeared to have a sound grasp on morality which supports the hypothesis.

Lying Vignettes

The different scenarios utilized coached lies with both adults and children in order to see how the participants would respond to those situations themselves. The participant responses showcase how the environment influences the propensity to tell lies. All children were able to answer the comprehension questions for the scenarios successfully.

Within Vignette #1, participants read a task involved telling a coached lie from an adult. One child lied from the reliable task and one child lied from the unreliable task. The one child that lied in the reliable task could have chosen deception in order to protect an adult figure from getting in trouble. The child that lied in the unreliable group answered as to what was expected. Within Vignette #2, no children from the reliable group lied whereas more than half of the children in the unreliable group lied. These results follow the hypothesis more as to what was expected. However, the drastic difference between vignettes can be due to the easier nature of lying to protect a friend versus protecting an adult. Also, it may be easier to communicate with friends and listen to what they say versus lying to an adult as told by an adult. Children may be too scared to lie to an adult when getting another adult in trouble. However, it can be easier to lie to an adult when only a child would be getting in trouble. Regardless, the lying vignettes follow the anticipated outcome.

Twin Analysis

Each pair of twins, GIRL/GIRL and BOY/BOY was split into one of the two groups and compared to one another and the other twins. It was found that the two sets performed similarly to each other in the behavioral tasks, but then answered similarly to their twin in the morality task. Three out of the four children could not recall telling any lies in the past 24 hours, most likely due to the inability to retain detailed memories at the age of 5. Both sets of twins ate as

many treats in the Marshmallow Task as predicted for their reliability group. Because this is a behavioral task, their responses were most likely due to the environment they were placed in. The same can be said for the lying vignettes for the boy and girl placed in the unreliable group lied, while the two in the reliable group did not.

The biggest difference between the two sets of twins were their responses to the Lie-telling moral disengagement scale. While the girls answered mainly “strongly disagree” for most of their answers, the boys answered mainly “strongly agree.” As for the totally different opinion to the statements between the genders, this can be due to the stereotype that boys should be raised to be fighters and be more aggressive while girls are expected to be calm and more passive. Dependent on the upbringing of the children, this can reflect why they answered their questions the way they did. However, this shows that upbringing does, in fact, play a key role in a child's morality. The similarities in their answers despite their groups are most likely due to being taught the same form of morality and being affected by their proctor at differing extents.

Future Considerations and Limitations

Children ages 5-6 should undergo a separate, unbiased lying measure in order to gauge how many lies they tell on average. A new task should be developed in order to determine the child's propensity to lie dependent on their own account. The task could be behavior based and should include the research telling a false story about lying themselves to see if the younger children could respond. Additionally, more participants should be tested with this specific methodology as well. Recruitment of children was difficult due to the nature of the tests and concerns from parents. However, with better outreach and explanation of the lack of negative side-effects, more participants can be reached.

The actual reliability task could be strengthened. The proctors could be more deliberate in their actions and be harsher on the children. The reliable group was more in line with what was anticipated while the unreliable group fell somewhat short. Therefore, the unreliable group should be run with a more explicit atmosphere of untrustworthiness.

The lie-telling moral disengagement task can also be further modified for the children. If their responses to the questions were written out versus using a Likert scale, their responses could be coded for adjectives or words that suggest their opinion on the subject. This may be able to create more diverse choices.

Conclusion

The purpose of this research was to view how many lies per day are told on average by children. Additionally, the study aimed to see how reliability in the environment influenced a child's propensity to tell lies and make impulsive decisions. A series of behavior-based tasks were given to analyze the correlation between external factors to a child's internal processing. Most hypotheses for the project were supported. Children placed in an untrustworthy environment will have a higher propensity to tell lies and will lack self-control. Most children had a strong grasp on morality, while others simply disregarded the importance of a moral compass. Younger children have a difficult time retaining memories, therefore, making it difficult to assess how many a lies a child tells per day on average. Overall, the experiment found that a child's behavior will be less thought-out and be more prone to negative consequences when placed in an unreliable environment.

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Appendix 1: HIPAA Consent Form



AUTHORIZATION FOR RELEASE OF HEALTH INFORMATION PURSUANT TO HIPAA
[This form has been approved by the New York State Department of Health]

OCA Official Form No.: 568

Patient Name _____	Date of Birth _____	Social Security Number _____
Patient Address _____		

I, or my authorized representative, request that health information regarding my care and treatment be released as set forth on this form. In accordance with New York State Law and the Privacy Rule of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), I understand that:

1. This authorization may include disclosure of information relating to **ALCOHOL and DRUG ABUSE, MENTAL HEALTH TREATMENT**, except psychotherapy notes, and **CONFIDENTIAL HIV* RELATED INFORMATION** only if I place my initials on the appropriate line in Item 9(a). In the event the health information described below includes any of these types of information, and I initial the line on the box in Item 9(a), I specifically authorize release of such information to the person(s) indicated in Item 8.
2. If I am authorizing the release of HIV-related, alcohol or drug treatment, or mental health treatment information, the recipient is prohibited from redisclosing such information without my authorization unless permitted to do so under federal or state law. I understand that I have the right to request a list of people who may receive or use my HIV-related information without authorization. If I experience discrimination because of the release or disclosure of HIV-related information, I may contact the New York State Division of Human Rights at (212) 480-2493 or the New York City Commission of Human Rights at (212) 306-7450. These agencies are responsible for protecting my rights.
3. I have the right to revoke this authorization at any time by writing to the health care provider listed below. I understand that I may revoke this authorization except to the extent that action has already been taken based on this authorization.
4. I understand that signing this authorization is voluntary. My treatment, payment, enrollment in a health plan, or eligibility for benefits will not be conditioned upon my authorization of this disclosure.
5. Information disclosed under this authorization might be redisclosed by the recipient (except as noted above in Item 2), and this disclosure may no longer be protected by federal or state law.
6. **THIS AUTHORIZATION DOES NOT AUTHORIZE YOU TO DISCUSS MY HEALTH INFORMATION OR MEDICAL CARE WITH ANYONE OTHER THAN THE ATTORNEY OR GOVERNMENTAL AGENCY SPECIFIED IN ITEM 9 (b).**

7. Name and address of health provider or entity to release this information: _____	
8. Name and address of person(s) or category of person to whom this information will be sent: _____	
9(a) Specific information to be released: <input type="checkbox"/> Medical Record from (insert date) _____ to (insert date) _____ <input type="checkbox"/> Entire Medical Record, including patient histories, office notes (except psychotherapy notes), test results, radiology studies, films, referrals, consults, billing records, insurance records, and records sent to you by other health care providers. <input type="checkbox"/> Other: _____ Include: (Indicate by Initialing) _____ Alcohol/Drug Treatment _____ Mental Health Information _____ HIV-Related Information	
Authorization to Discuss Health Information (b) <input type="checkbox"/> By initialing here _____ I authorize _____ Initials Name of individual health care provider to discuss my health information with my attorney, or a governmental agency, listed here: _____ (Attorney/Firm Name or Governmental Agency Name)	
10. Reason for release of information: <input type="checkbox"/> At request of individual <input type="checkbox"/> Other: _____	11. Date or event on which this authorization will expire: _____
12. If not the patient, name of person signing form: _____	13. Authority to sign on behalf of patient: _____

All items on this form have been completed and my questions about this form have been answered. In addition, I have been provided a copy of the form.

Signature of patient or representative authorized by law: _____ Date: _____

* Human Immunodeficiency Virus that causes AIDS. The New York State Public Health Law protects information which reasonably could identify someone as having HIV symptoms or infection and information regarding a person's contacts.

Appendix 2: Experimental Consent Form (Page 1)

EXPERIMENTAL CONSENT FORM

Experimental Title: The Tendency to Lie & Make Impulsive Decisions Based on Reliability among Children ages 5-10

Purpose of Study: To investigate the frequency of a child to lie, and to explore how a child's behavior is altered by the reliability of a proctor. Specifically, this research study explores the potential relationship between impulsivity and lying, and changes within/between these variables associated with their dependency on a child's mood. Past research has examined commonalities between a child's tendency to lie or act impulsively, yet few studies have aimed to explore any correlation between lying and impulsivity and its relationship to the trustworthiness of a proctor. This research is essential to the area of child psychology, as this developmental stage has been significantly shown to influence successful moral behavior during adolescence and adulthood.

Your child's role: By giving consent to allow your child to be studied within the experiment, they will take part in a craft project and a series of surveys to test reliability versus lying and impulsivity.

Risks & Benefits for your child: Children will be minimally at risk. Children will be allowed to eat a treat (a marshmallow, cookie, or pretzel) as described in one task. Children randomly placed in the non-reliable group will be lied to about having access to “new markers and decorations” are part of the experimental variable. This will stimulate a feeling of distrust and

Appendix 2: Experimental Consent Form (Page 2)

loss and morality for the participants. After the study is complete, the children will learn about why they were lied to and thanked for their participation. The surveys are low-risk for participants. Your child will be able to learn more about the way they think and the many fascinating capabilities of the mind.

Contact Information: If you have any questions or concerns, please email childresearchstudy@gmail.com.

I have read over the terms of the following consent form and give full permission to allow my child, _____, to take part of the study.

Parent Signature _____

Date _____

The following information will be de-identified and the researcher will not know which participant is which. The information below serves solely for population demographic information. Your child will be referred to by their identification number. Please note all data and information will be destroyed in 2 years.

Parent's Email Address: _____

Parent's Cell Phone Number: _____

Child's Age at Time of Participation: _____

Child's Gender: _____

Please state if your child has any food allergies: _____