A praise-based intervention does not increase the honest reports of children

Adam David Moline
University of the Pacific

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A PRAISE-BASED INTERVENTION
DOES NOT INCREASE THE HONEST REPORTS OF CHILDREN

By

Adam D. Moline

A Thesis Submitted to the
Graduate School
In Partial Fulfillment of the
Requirements for the Degree of
MASTER OF ARTS

College of the Pacific
Behavioral Psychology

University of the Pacific
Stockton, California

2020
A PRAISE-BASED INTERVENTION
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By

Adam D. Moline

APPROVED BY:

Thesis Advisor:  Corey Stocco, Ph.D.

Committee Member:  Matt Normand, Ph.D.

Committee Member:  Kevin Luczynski, Ph.D.

Department Chair:  Scott Jensen, Ph.D.
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By

Adam D. Moline
DEDICATION

This thesis is in honor of my late father, David G. Moline, whose love, support, and wisdom continues to bolster the pursuit of my goals and passions.
A PRAISE-BASED INTERVENTION
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Abstract

By Adam D. Moline

University of the Pacific
2020

Although lying is a major concern for many caregivers (Alwin, 1989; Gervais et al., 2000), there is little behavior analytic research on effective, practical interventions. Studies have shown that a moral story, instruction, or rule implying praise for honesty produced statistically significant improvements in children admitting a transgression (Lee et al., 2014; Talwar et al., 2015; Talwar et al., 2016). Although praise has been shown to function as a reinforcer (Dozier et al., 2012; Hall et al., 1968; Polick et al., 2012), it is unknown if an intervention package including praise for telling the truth would compete with reinforcement contingencies for lying. We evaluated an intervention package comprised of this moral story, instruction, and rule in combination with praising honest reports when reinforcement favored lying. We identified and used each participant’s preferred topography of praise using a multiple-stimulus without replacement preference assessment (MSWO; Deleon & Iwata, 1996). No or minimal increase in honest reports was observed following the praise-based intervention. However, reinforcement of correspondence produced a complete increase in honest reports when staggered across participants using a multiple baseline design.
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CHAPTER 1: INTRODUCTION

A Praise-Based Intervention Does Not Increase the Honest Reports of Children

Honesty is highly valued by caregivers (Alwin, 1989) and excessive lying is a commonly reported problem exhibited by children (Gervais et al., 2000). Based on observational research, lying can start as early as 2 years old (Lee, 2013; Wilson et al., 2003), tends to increase throughout childhood (Lee, 2013; Wilson et al., 2003), and persists into adolescence (Evans & Lee, 2011). Moreover, Engels et al. (2006) surveyed 671 parent-adolescent dyads and found that the reported frequency of child lying was correlated with a lower quality relationship between parent and child. Parents’ reports indicated that frequent lying was related to less communication and trust. The authors speculated that parents might talk less to their children “because of the fear of being lied to or simply because they can not believe what their children tell them anymore” (Engels et al., 2006, p. 950). Said differently, child lying might function as punishment for parent’s talking with their children, or frequently lying might lead to the child’s reports of events becoming an s-delta or a discriminative stimulus for some parental responses. For example, if a child frequently lies about events (e.g., homework completion), parents may ask fewer questions about daily activities (e.g., How was school today?). When the parent does ask about events, they may attempt to validate the child’s report by asking the teacher to verify homework completion or asking the child to elaborate on what they learned. However, verification is not always feasible (e.g., the teacher may not be accessible), and as children get older, those who lie tend to do so more convincingly (Talwar & Lee, 2002). Therefore, there is a

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1 See Allen and Warzak (2000) and Stocco and Thompson (2015) for more on the influence of child behavior on parent behavior, which is sometimes referred to as child effects.
need for strategies that parents can use to promote telling the truth without verifying the reported event.

Parenting books and websites describing interventions for addressing lying typically include recommendations to use strategies that focus on praising children for telling the truth ("10 Ways to Teach Your Children to be Honest", 2019; Ditkowsky, 2018). These recommendations are based on studies that have shown statistically significant differences in children than children who heard a story that implied punitive consequences for lying (The Boy Who Cried Wolf = ~ 35%, Pinocchio = ~ 30%), or a control story that involved a moral unrelated to lying (The Tortoise and the Hare = ~ 32%). Talwar et al. (2016) reported similar findings in a situation where participants were asked to keep a secret after an adult confederate broke a toy. After being read one of several moral stories, Talwar et al. found that a higher percentage of children were honest about the broken toy after being read the story that implied praise for honesty (George Washington and the Cherry Tree).

Using the same guessing game as Lee et al. (2014), Talwar et al. (2015) found that children were more likely to admit to cheating when a rule stated by the researcher indicated praise instead of reprimands for telling the truth. After a child cheated, the researcher stated a rule before asking if they peeked at the toy when the experimenter left the room. Researchers compared six rules that implied different combinations of consequences for telling the truth: (a) no punishment and external appeal, (b) no punishment and internal appeal, (c) no punishment and no appeal, (d) punishment and no appeal, (e) punishment and external appeal, or (f) punishment and internal appeal. External appeals implied that the experimenter would praise the participant for being honest (i.e., “If you tell the truth, I will be really pleased with you”). By contrast, internal appeals suggested honesty resulted in a feeling of satisfaction (i.e., “Telling the
truth is the right thing to do”). Rules indicating punishment for peeking implied a high likelihood of discipline for peeking (i.e., “If you peeked at the toy, you will be in trouble”), whereas rules without punishment implied no discipline for peeking (i.e., “If you peeked at the toy, it does not matter. No matter what happened, I would not be cross with you.”). The lowest proportions of children who lied about peeking were observed when the rule implied no discipline for peeking and an external appeal (~ 35%; i.e., “If you peeked at the toy, it does not matter. No matter what happened, I would not be cross with you. If you tell the truth, I will be really pleased with you. I will feel happy if you tell the truth.”).

Despite finding that moral stories and instructions (Lee et al., 2014; Talwar et al., 2016) or rules (Talwar et al., 2015) implying praise for honesty can increase the likelihood of truth-telling, none of the aforementioned studies delivered praise or other consequences for telling the truth or lying. Reinforcement has been shown to influence honest reports of previous play activities (Baer et al., 1984; Israel & O’Leary, 1973; Ribeiro, 1989; Risley & Hart, 1968; Shillingsburg et al., 2017) and academic tasks (Cortez et al., 2014; Guevremont et al., 1986; Sauter et al., 2020). Participants have included typically developing children (Baer et al., 1984; Cortez et al., 2014; Guevremont et al., 1986; Risley & Hart, 1968), children with intellectual disabilities (Whitman et al., 1982), and adults with intellectual disabilities (Deacon & Konarski, 1987). As a result, the only evidence-based recommendation from the behavior analytic literature to address lying is to reinforce telling the truth, which researchers have described as correspondence training (Lloyd, 2002). In do-say correspondence training, participants are placed in a situation in which the

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2 It should be noted that increasing honest reports through correspondence training does not necessarily decrease lying in the aggregate. For example, a child may tell the truth about homework completion following correspondence training but continue to lie about hitting a sibling.
participant’s behavior (doing) and subsequent report of that behavior (saying) can be monitored and reinforcement is delivered contingent on accurate reports (i.e., correspondence or truth-telling). For example, Ribeiro (1989) demonstrated that the accuracy of children reporting previous play activity was influenced by whether reinforcement was contingent on correspondence. Six toys were available for participants to play with during all conditions. Correspondence was measured when researchers asked participants with which toys they had played. In baseline, high levels of honest reports were observed when reinforcement was delivered independent of accuracy. Ribeiro observed increases in lying for some children when reinforcement depended on reports of playing with toys, even if reports were inaccurate. When reinforcement remained in place for reports of playing with toys and reports occurred in a group setting, more children engaged in high levels of lying. Ribeiro hypothesized that lying was induced in the group setting because other children provided instructions or models that indicated lying would be reinforced. However, only providing reinforcement for accurate reports—i.e., correspondence training—resulted in the return of honest reports for all participants.

Because consequences are ubiquitous and influential, little is known about the generality of inducing truth-telling through the sole use of moral stories, rules, and instructions under more typical contexts. In a recent systematic replication of Lee et al. (2014), Sauter et al. (2020) found that a moral story and instruction implying praise for telling the truth produced temporary, inconsistent, or no effects on children’s reports of math answers when differential consequences were delivered for honest reports and lies. Participants completed worksheets that included math problems two grade levels below (easy) and above (hard) their current grade. After 5 min elapsed, participants reported their answers and the researcher delivered points that were
exchangeable for computer time contingent upon participant reports of correct math answers. Prior to reporting math answers, researchers read *George Washington and the Cherry Tree* and instructed participants to be like George Washington and tell the truth. Low levels of telling the truth about incorrect or incomplete math answers were observed when points were contingent on reports of correct math answers. However, similar to Ribeiro (1989), two of three children did not start lying until a confederate provided instructions and models describing or showing reinforcement for lying. Once participants started lying, Sauter et al. found that lasting improvements in telling the truth was dependent on reinforcing accuracy. Although the moral story and instruction implied praise for telling the truth, one limitation of Sauter et al. is that the researchers did not deliver praise for reports of incomplete or incorrect math answers. Because the moral story and instruction alone produced temporary or inconsistent improvements in telling the truth for two participants, a lasting and more consistent increase in honest reports may have been observed if researchers delivered praise for accurate reports of incorrect or incomplete math answers. Another limitation of Sauter et al. is that participants did not lie about a transgression, which is among the most common lies told by children (Wilson et al., 2003).

Because praise can function as a reinforcer under some conditions (Dozier et al., 2012; Hall et al., 1968; Polick et al., 2012), providing praise may be an effective means of promoting truth-telling. However, concurrently available reinforcers for lying may compete with praise as a reinforcer. For example, lying about homework completion might result in access to preferred activities (e.g., video games), or at the very least, escaping or avoiding more homework. Research in other areas has shown that different forms of attention can effectively compete with the reinforcement that maintains problem behavior (Payne & Dozier, 2013). For example, Gardner et al. (2009) found that providing high-quality attention (i.e., frequent eye contact,
physical contact, body orientation, and enthusiastic praise) for appropriate alternative responses (e.g., “Great job finishing your work!”) produced lower levels of escape-maintained inappropriate behavior when escape remained in place. In contrast, low-quality attention (i.e., no eye contact, far proximity, oriented away, and negative verbal statements) did not effectively compete with escape for inappropriate behavior. When high-quality attention was available during the demand condition of a functional analysis, low rates of problem behavior were observed. When low-quality attention was delivered, high rates of problem behavior were observed during the escape condition. Therefore, it is possible that praise could compete with reinforcers for lying, such as access to preferred activities.

Researchers have also reported differences in the efficacy of and preference for various forms of praise (Payne & Dozier, 2013; Polick et al., 2012; Weyman & Sy, 2018). For example, Weyman and Sy (2018) found that enthusiastic praise for correct responses produced slightly quicker acquisition in match-to-sample performance compared to neutral or no praise. The authors also found individual differences in the preference for enthusiastic praise (high pitch, fluctuation, and volume), neutral praise (monotone voice, low pitch, fluctuation, and volume), and no praise (withholding praise). The researchers used a multiple-stimulus-without-replacement preference assessment (MSWO) to identify each participant’s preferred type of praise (Deleon & Iwata, 1996). Next, each participant was taught three different match-to-sample targets with enthusiastic, neutral, or no praise as the consequence for correct matching. Results from the preference assessment showed one participant preferring enthusiastic praise and undifferentiation with the other two. Although enthusiastic praise resulted in the quickest acquisition for all three participants, the difference was minimal for two participants. The largest difference in acquisition speed was observed for Ophelia, who preferred enthusiastic praise.
These findings highlight the importance of assessing preference rather than assuming the efficacy of common consequences such as praise. However, individual differences appear to exist in the extent to which various topographies of praise are preferred. Moreover, delivery of praise may not function as reinforcement and could even function as punishment given certain learning histories.

Taken together, multiple studies have reported a higher likelihood of children admitting transgressions after hearing a moral story, instruction, and rule that indicated praise for honesty (Lee et al., 2014; Talwar et al., 2015; Talwar et al., 2016). Despite reporting statistically significant outcomes, questions remain about the reliability and generality of these effects because researchers used a group design with a single posttest that did not evaluate the influence of praise or other consequences. Further evaluation showed that the moral story and instruction used in Lee et al. (2014) produced temporary, inconsistent, or no improvement in telling the truth when reinforcement favored lying (Sauter et al., 2020). Although praise has been shown to function as a reinforcer (Dozier et al., 2012; Hall et al., 1968; Polick et al., 2012), it is unknown if an intervention package including praise for telling the truth would compete with reinforcement contingencies for lying. The purpose of the present investigation was to evaluate the efficacy of a praise-based intervention that included a moral story, instruction, rule, and praise for telling the truth when lying produced escape from an academic task and access to preferred activities.
CHAPTER 2: METHOD

Participants and Setting

Participants included three typically developing boys: Nick (5 years old) and monozygotic twins Andrew and Steve (9 years old). Participants were recruited by approaching parents at local community centers and libraries. Recruitment consisted of asking parents to complete a questionnaire based on Alwin (1989; see Appendix A). The questionnaire asked for parents to rank the importance of various qualities for their child, including honesty. If honesty was ranked as one of the most important qualities, researchers asked caregivers if lying was currently a concern at home or school. When a caregiver reported concerns about lying, the experimenters described the purpose of our study and informed parents about the inclusion criteria (i.e., typical development, between 4 and 9 years old). All caregivers of participants reported that honesty was highly valued and lying was a concern. We included the first three participants who met our inclusion criteria, and for whom we obtained caregiver consent.

We obtained approval from the Institutional Review Board (IRB) at the University of the Pacific. We obtained informed consent from the parents and assent from the children before conducting sessions. The experimenter told parents about the structure of sessions and requested that they did not tell their children about the purpose of sessions, the hidden camera, or incorrect math answers on the answer key.

Sessions were conducted in two research rooms at the University of the Pacific (see Appendix B). The rooms were connected by a door that was left open and equipped with tables and chairs. The participant sat in one room at a table facing the door to the other room. The experimenter sat in the opposing room out of sight for the participant and facing away from the
connecting door. We video recorded sessions by hiding a Canon Vixia HF R800 video and audio recorder in a fake tree in the corner of the participant’s room. We hid the camera to minimize the possibility that its presence influenced responding. Each room was connected to an observation room with a one-way mirror. Nick’s mother occasionally watched sessions with a research assistant from the observation room.

**Preassessments**

We conducted two preassessments to ensure that participants could follow instructions and comprehend stories and to assess participant preference for types of praise. Before the first assessment, we told participants the purpose of participation was to work on math skills. Additionally, we instructed parents to avoid mentioning the purpose of the study to their children.

**Instruction-Following**

A worksheet was used to assess the necessary prerequisite skills for participation such as walking into the session room, sitting at a table, answering questions, and following instructions (Appendix E). The experimenter instructed the participant to answer each question. For example, participants were asked on the first day they meet the experimenter to, “Write the letter A.” The experimenter then instructed the child to say if they got the answers correct or incorrect after the experimenter read all of the answers.

**Story Comprehension and Preference Assessment**

We assessed the participant’s recall of facts about five stories and their preference for different types of praise using vignettes from Bussey (1999) and a concurrent-chains arrangement. The stories included an instance of a child lying or telling the truth about engaging in various transgressions (Appendix F). For example, in one story, Anna accidently spilled a
glass of milk on the carpet. When her mother asked if she spilled the milk, Anna said, “No, the dog knocked over the glass of milk.” For each trial, we printed the same story on three different colored pieces of paper and presented them to the participant on a table. Each trial consisted of (a) the child selecting one of the three pieces of paper, (b) the experimenter reading one of the five stories, (c) the child responding to one of three comprehension questions about the story (e.g., “Who is the story about?” , What did she do?” , and “Did she tell the truth or a lie?”), and (d) the experimenter providing one of three types of praise for correct responses to comprehension questions. The experimenter provided an opportunity to choose a different type of praise for each question.

We systematically replicated the praise preference assessment included in Weyman and Sy (2018). The first type of praise was enthusiastic and included fluctuating intonation, high volume, eye contact, and positive facial expression (e.g., “I love how you’re being honest!”). The second was neutral praise, and included monotone, normal volume, eye contact, and neutral facial expression (e.g., “Thanks for being honest”). The third option was a no-praise control where the experimenter withheld praise and eye contact. Before the start of the first trial, the experimenter described the experiences associated with selecting each color of paper and provided a model of the different types of praise. The experimenter then instructed the participant to “choose the color paper you’d like to hear the story from” and allowed the participant to select a paper. The corresponding type of praise was delivered following the participant’s correct answer to each question. To measure story comprehension, we recorded the accuracy of answers to questions about the story. Preference for praise was measured by recording participant’s selections of colored paper associated with the three different types of praise. We ended the assessment for Nick and Steve when one type of praise was selected four
times more than any other type. For Andrew, we read eight stories because a preference appeared to be emerging after reading five stories and session duration was not a concern. We used the results of the preference assessment to inform the type of praise we included when evaluating the praise-based intervention.

**General Procedures**

Participants were told the purpose of participation was to practice math skills. Each child participated in sessions 2 to 3 days a week with 1 to 5 consecutive sessions a day. Each session was no more than 15 minutes and as short as ~10 to 11 minutes. Similar to Sauter et al. (2020), sessions consisted of giving the participant a maximum of 5 min to complete a worksheet comprised of 10 math problems, after which the participant reported the accuracy of their answers to the experimenter. Participants received points exchangeable for a preferred activity contingent on reports of correct math answers. Preferred activities were identified through caregiver report. For each participant, the caregivers identified playing games or watching videos on a tablet as a preferred activity. Caregivers reported restricting tablet use at home.

We made several modifications to the procedures in attempt to address some limitations of Sauter et al. First, instead of arranging three easy and seven difficult math problems per worksheet, our worksheets included ten difficult math problems. Difficult math problems at least two grade levels higher than the participant’s current grade level, based on the California State Common Core requirements (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). For example, if the participant was in third grade, we used 10 fifth-grade level math problems (Appendix C). Similar to Sauter et al., math problems answered correctly across two consecutive sessions would have been removed and replaced with math problems similar to those not answered correctly in previous sessions or from
a higher grade-level. However, because participants did not answer any math questions correctly, we never needed to modify the math worksheets. Second, whereas the experimenter stated the correct answer and the child reported their answers one problem at a time in Sauter et al., we provided the child with an answer key and asked them to self-grade their work and report the total number of problems they solved without cheating. Before the start of each session, the experimenter placed one math worksheet and answer key face down on the table with two pencils. We distinguished the answer key from the worksheet by labeling it (“Answer Key”) in 24-point, black font. To further confirm that a participant cheated by copying answers, we put incorrect, but plausible, answers on the key. Third, to induce lying, Sauter et al. provided one minute of access to a moderately preferred activity (e.g., books) for reporting incorrect or incomplete answers. Participants then engaged with the moderately preferred activity while waiting to access the highly preferred activity, with one minute being earned for each report of a correct math answer. Despite this arrangement, a confederate rule and model of lying was added because 2 of 3 participants did not begin to lie. To increase the likelihood of inducing lying without including instructions, rules, and models from an adult confederate, we increased the difficulty of the math worksheet and removed the moderately preferred activity during the delay. Moreover, the moderately preferred activity was replaced by participants reviewing their math worksheet during the waiting period. Teachers often prompt students to review answers to an exam while waiting for more preferred activities (“27 Ideas For Students Who Finish Their Work Early,” 2019). Lastly, experimenters left the participant’s room at the beginning of math completion to sit out of sight in a connected room (Appendix B). This modification from Sauter et al. provided an opportunity for participants to peek at the answer key. Following the
completion of the math worksheet, the participant approached the experimenter and reported completion.

We made these modifications for three main reasons. First, although researchers observed lying in Sauter et al., participants only had the opportunity to lie about writing a correct answer, not a transgression. Because lying about a transgression is the most common type of lie told by children (Wilson et al., 2003), providing participants with the answer key arranged the opportunity for them to lie about cheating. Second, we thought that arranging only difficult math problems and asking participants to review math instead of reading a book during the delay to the preferred activity might increase the likelihood of lying. It is important to note that a major limitation of Sauter et al. was inducing lying by introducing instructions, rules, or models from an adult confederate. Third, these changes may more closely resemble the typical conditions under which children lie; as such increasing the ecological validity of our procedures.

At the start of the first session, the experimenter told the participant how to complete and self-grade the math worksheet. Next, the experimenter explained the session structure using a familiar example. The experimenter stated, “This is like in school when you have homework to do in a book with the answers at the back of the book.” Finally, the experimenter described how correct answers resulted in access to a tablet.

You are to complete the worksheet in front of you. Once you are finished, or when the timer goes off, grade your answers with the answer key in front of you. If you got a question right circle it with the pencil. If you got it wrong put an X through it. Write at the top of your worksheet how many questions you got right and let me know when you’re finished. I will ask you how many questions you got right before looking at the answer sheet. You will then look over your math worksheet for as many minutes as math questions that you got wrong. Next, you may put your worksheet away and trade your correct answers for play time with the tablet. Each point is worth one minute. For example, if you get all 10 questions right, you will be allowed to play for 10 minutes. If you get 6 right, you will look over your math for 4 minutes before you can play with the tablet for the last 6 minutes. You will have 5 minutes to complete the worksheet, but if you finish early then come let me know. You can start your worksheet now.
After the first session, the experimenter provided abbreviated instructions that covered the main points. If the child interrupted the experimenter and indicated they knew the procedures (e.g., “yeah, yeah, I know”), the experimenter stopped describing the procedures and asked the child to finish them. If the child inaccurately described any detail, the experimenter described all the procedures. The experimenter informed the participant when 1 min remained. The participant approached the experimenter when the math worksheet was completed or after 5 min elapsed. The experimenter then said, “How many questions did you get correct before looking at the answer sheet?” and instructed the participant to review their math worksheet or provided access to the tablet depending on the participant’s reports.

**Measurement and Interobserver Agreement**

Honesty and lying were scored by comparing the correspondence between the recorded report and written answer for each problem on the worksheet. Lying was defined as reporting answers as correct, and honesty was defined as reporting answers as incorrect or an admission of copying answers from the answer key. During session 21, Nick admitted to not being able to do the math, which we recorded as honest. We recorded this report as honest because of Nick’s repeated exposure to the difficult math problems without getting any answers correct. Answers were recorded as copied, incorrect, or blank by comparing the completed math worksheets with the answer key. Copied answers were defined as identical to the answer key with 2 exceptions. During sessions 6 for Andrew and 21 for Nick, the participant copied at least 75% of the answer from the key (e.g., 112 was copied from 112.1). Additionally, video recording allowed for confirmation that answers were copied during these sessions. Incorrect answers were defined as those different from the answer key and blank answers had no writing. We also measured the latency to and duration of looking at the answer key, which typically included observing and
recording when and how long participants flipped over the answer key to reveal the answers. However, during sessions 1 and 2 for Nick, we also recorded looking at the answer key when we saw him looking at answers through the back of the answer key due to the ink bleeding through the paper. Furthermore, in session 2 we scored one answer as copied because we observed Nick looking at the answer key while writing the answer and because the written answer reversed the numerals in the same way that they would have been seen while the answer key was still faced down on the table (See Appendix D). We recorded the offset of looking at the answer key when the participant flipped it over so the answers were face down on the table or when the answer key was face up but the participant left the table to report answers to the experimenter. During sessions 1 and 2 when Nick peeked through the paper, we recorded the offset when he transitioned from looking at the answer key to the worksheet. We reported the percentage of honest reports for blank, incorrect, or copied math answers by session. We used event diagrams to depict the within-session durations and patterns of looking at the answer key. The primary observer recorded data on reports during sessions and on looking at the answer key by watching video recordings of sessions. The completed worksheets served as permanent products for recording honest and dishonest reports during session.

Secondary observers recorded data for 45% (Andrew), 38% (Steve), and 45% (Nick) of all conditions. Secondary observers recorded honesty and lying using completed math worksheets and video recordings of sessions. An agreement was scored for each math problem for which the primary and secondary observers recorded the same performance (i.e., copied, incorrect, blank) and vocal report of correct answers. We calculated trial-by-trial interobserver agreement by dividing the number of trials with agreement by the total number of trials and converting the ratio to a percentage. Agreement for math performance was 98% for Andrew,
97% for Nick, and 100% for Steve (Table 2). Agreement for vocal and written reports and correspondence was 100% for Andrew, Steve, and Nick.

**Experimental Design and Conditions**

We planned on evaluating the efficacy of the praise-based intervention on honest reports using a reversal design for all participants. However, a reversal was not used due to observing no or minimal effects when we implemented the praise-based intervention. Effects of correspondence training were evaluated using a multiple-baseline across participants.

**Baseline**

Point delivery was dependent on the reports of correct answers. The participant received a point for the total number of answers reported as correct. The experimenter did not see the child’s written answers and did not check for accuracy during sessions. The experimenter did not present any instructions or rules about honesty or praise during this phase.

**Praise-Based Intervention**

Points exchangeable for a preferred activity were still provided only for reports of correct answers, but a praise-based intervention was programmed for honesty. The components of the praise-based intervention stem from developmental literature showing increases in truth-telling produced by moral stories and instructions (Lee et al., 2014; Talwar et al., 2016) or rules (Talwar, et al., 2015). Following the completion of the math worksheet, the experimenter read *George Washington and the Cherry Tree*. Next, experimenters provided a variation of an instruction and rule (Table 1) such as, “Now I want you to be like George Washington and tell the truth. If you tell the truth, I will be really pleased with you and it will make me feel happy if you tell the truth.” Experimenters then delivered the participant’s preferred form of praise for admitting that they copied answers from the answer key or for honest reports of incorrect or
incomplete math answers. For example, if the participant reported 4 answers as correct, the experimenter said, “Thanks for being honest about the 6 you got wrong, you earned 4 minutes of tablet.” The experimenter did not provide praise for reports of correct math answers. If the participant reported all answers as correct, the experimenter delivered the tablet but withheld praise. Experimenters continued to read the George Washington story every session if there was no effect of the praise-based intervention during the first session. One purpose of repeated exposure was to assess if the lack of an initial effect was due to the participant not attending during the first story. An additional reason is the possibility that participants may have required multiple exposures to the story for the imbedded rule to influence their honest reports.

We modified the rule and contingencies for Nick during sessions 8 to 12. Instead of praising any degree of honest reports, the experimenter told Nick that he would only praise honest reports for all math answers for which he cheated, wrote an incorrect answer, or left blank: “Now I want you to be like George Washington and tell the complete truth. If you tell the truth about all 10 math questions, I will be really pleased with you and it will make me feel happy if you tell the truth.” The experimenter provided the preferred activity without any praise if the participant reported either some or all of the math questions as correct.

**Correspondence Training**

Because the praised-based intervention failed to increase honest reports of math answers, correspondence training was implemented. The procedures were identical to those used by Sauter et al. (2020) with one exception. During this phase, points were dependent on reports of incorrect math answers or peeking at the answer key. That is, if the participant reported getting all math questions incorrect, they were allowed 10 minutes with the tablet. Additionally,
Experimenters provided a rule that matched the contingencies present in this phase.

Experimenters began this phase by saying the following:

We’re going to do something different today. I’m going to give you points and time with the tablet for being honest with me. That means if you can’t do this math and you tell me right now, you can go straight to the tablet. Also, if you get them all correct and you tell me you got them all right, you can also go straight to the tablet. Even if you peek at the answer key while you’re working and tell me that you peeked, I’m going to give you time with the tablet for telling me the truth.

**Parent Implementation**

For Nick, we conducted additional probes evaluating the generality of our arrangement and findings by having his mother run sessions. There are several reasons to suspect that there might be different outcomes when parents conduct sessions. First, parental praise may be more valuable than that of experimenters if the child has experienced a history of parental praise being correlated with other reinforcers. Additionally, because instruction and rule following can come under conditional stimulus control after a history of differential reinforcement (Galizio, 1979; Hayes, 1989), children may be more likely to follow instructions and rules stated by a parent. We also included this phase as a means of training Nick’s mother on interventions that she could implement at home. This phase consisted of Nick’s mother conducting baseline, praise-based intervention, and correspondence training sessions using methods similar previous sessions. Due to time constraints, we made one procedural modification throughout these sessions. Instead of arranging a maximum of 10 min of access to the tablet following a report of answers, we arranged a maximum of 5 min. This modification allowed us to conduct 5 sessions per day, all of which were conducted in 1 day.

Prior to mom’s first session, the experimenter instructed Nick’s mother how to conduct session, modelled implementation, practiced rehearsing, and provided feedback. Subsequent sessions included booster training as needed, which involved a brief overview of procedures,
opportunities for questions, and feedback on procedural integrity. The scripts for parental implementation were identical to those used during experimenter implementation with the exception of the correspondence training plus reprimands phase (see below). The experimenter stood near Nick’s mom to provide prompts if needed while she conducted sessions but did not interact with Nick.

**Correspondence training + reprimands.** Experimenters altered correspondence training during parent implementation for Nick. This change was in response to a complaint from Nick’s mother that correspondence training had addressed the dishonesty but not cheating. That is, Nick’s honest reports during correspondence training consisted of admissions of peeking. This phase was identical to the previous correspondence training phase with one exception. Following the admission of peeking, Nick’s mother reprimanded him for peeking prior to providing access to the tablet. For example, Nick’s mother stated, “I’m going to give you a full 5 minutes on the tablet because you were honest. However, I’m not happy that you peeked. Peeking to finish your homework is cheating and I’m disappointed that you cheated.”
CHAPTER 3: RESULTS

Figure 1 depicts each participant’s cumulative initial-link selections from the praise preference assessment. The top (Andrew), middle (Steve), and bottom (Nick) panels in Figure 1 depicts enthusiastic praise as the most commonly chosen type of praise during the MSWO preference assessment. Out of 7 total selections, Steve selected enthusiastic praise 5 times (71%), neutral praise 1 time (14%), and no praise 1 time (14%). Out of 11 total selections, Nick selected enthusiastic praise 7 times (64%), neutral praise 3 times (27%), and no praise 1 time (9%). Andrew’s selections, however, never reached the predetermined criteria. Out of 24 total selections, Andrew selected enthusiastic praise 10 times (42%), neutral praise 6 times (25%), and no praise 8 times (33%). Despite the criteria for preference not being met when compared to no praise, enthusiastic praise was selected as most preferred for Andrew as a result of being selected 4 times more than neutral praise.

Figure 2 represents the multiple-baseline across participant’s data for honest reports and math performance. The left panels for each participant represents the percentage of honest reports of blank or incorrect math answers. The right panels for each participant represents the child’s report of answers with individual boxes representing a report of each of the 10 questions from the math worksheet. Math performance is denoted by the shade of each box. Honest reports are plotted above and lying is plotted below the horizontal line. Figure 2 shows all participants lying during baseline about every math question either immediately (Andrew and Steve; top and middle panel) or after a decreasing trend of honest reports during the first 2 sessions (Nick; bottom panel). Following the praise-based intervention, Andrew and Steve continued lying about all copied or incorrect math answers. In contrast, we observed temporary,
minimal increases in honest reports for Nick during the first two sessions of the praise-based intervention. He accurately reported one copied answer (session 5) and one incorrect answer (session 6) before returning to lying about all copied and incorrect answers. Nick continued to lie about copied and incorrect answers after we implemented the modified rule and contingencies for the praise-based intervention. Following the implementation of correspondence training, honest reports increased to high levels for all participants.

The right panel of Figure 2 shows that math performance varied across participants and phase. During baseline, participants copied answers from the answer key at high levels (Andrew and Steve, 93%; Nick 80%). During the praise-based intervention, the level of copied math answers remained high for all participants (Andrew and Nick, 93%; Steve, 98%). Following the implementation of the new rule during the praise-based intervention for Nick, the level of copied math answers increased to 100%. During correspondence training, the percentage of copied math answers decreased to 8% for Andrew and 25% for Steve. Steve incorrectly answered 92% incorrectly and Steve copied 25% of answers. Nick continued to copy math answers at a high-level throughout correspondence training (100%).

Figures 3–5 represent event diagrams depicting peeking throughout session. Each line represents the duration of each session with peeking shown as elevated lines. Patterns of participant peeking consisted of long durations (Andrew; Figure 3, e.g., session 1), brief durations and frequent (Steve; Figure 4, e.g., session 1), and variable (Nick; Figure 5, e.g., sessions 1 & 10). Nick’s peeking began with brief ($M = 3.7s$) and frequent (2.9 peeks per minute) instances until session 3 when he transitioned to long durations ($M = 45s$) throughout a majority of the sessions. Each participant peeked every session throughout baseline and praise-intervention phases. Following correspondence training, both Andrew and Steve stopped
peeking with the exception of session 8 (Andrew) and session 11 (Steve) when 4 and 10 answers were copied, respectively. However, Nick continued to peek throughout a majority of the session throughout correspondence training.

During parent implementation, Nick answered all math questions incorrectly and lied about 100% of the questions during baseline and the praise-based intervention. Following correspondence training, Nick’s honest reports increased in level to 100%. However, Nick began cheating by copying 100% of math answers during correspondence training (Figure 2). After adding the reprimand to correspondence training, Nick’s honest reports remained at 100%. During the first session of correspondence training + reprimand, but prior to the first reprimand during session 20, Nick continued peeking to copy 100% of math answers. However, during session 21 Nick stopped peeking, left the math worksheet 100% blank, and reported he couldn’t complete the math worksheet.
CHAPTER 4: DISCUSSION

This is the first study to evaluate the effects of a praise-based intervention package on children’s reports of events when competing reinforcement was arranged for lying. Although the intervention was comprised of components shown to produce statistically significant improvements in honest reports (Lee et al. 2014; Talwar et al., 2015; Talwar et al., 2016), we found that the praise-based intervention produced temporary and minimal (Nick) or no (Andrew and Steve) improvements in honest reports when lying resulted in escape from academic demands and access preferred activities. Moreover, the reliability of these findings during probe sessions with Nick’s mom add to the external validity of these findings. Similar to decades of research (Cortez et al., 2014; Domeniconi et al., 2014; Lloyd, 2002; Sauter et al., 2020), we found that correspondence training was necessary to ensuring the accuracy of reports. These findings suggest that using a praise-based intervention for lying about cheating or academic performance may be ineffective when competing reinforcement in the forms of escape from academic tasks or access to preferred activities are provided for lying.

These findings extend the results of Sauter et al. (2020) by evaluating the influence of a praise-based intervention package that included programming praise for honest reports. There are several plausible explanations for the ineffectiveness of an intervention package comprised of instructions, rules, or praise delivered by an experimenter. One interpretation could be that Andrew and Steve did not comprehend the instructions, story, or rules that implied praise for honest reports. Another could be that Andrew and Steve had little to no experience with the experimenter delivering instructions or rules that were predictive of reinforcement (Baron & Galizio, 1983; Guinther & Dougher, 2013). However, both interpretations seem unlikely
because preassessments did not identify deficits in instruction following or story comprehension.
Moreover, we observed an immediate and complete increase in honest reports for Andrew and Steve following the rule in correspondence training, indicating comprehension of the described contingencies. Therefore, it seems most likely that we did not observe an effect for Andrew and Steve because praise either did not function as reinforcement or did not compete with the reinforcement programmed for lying. However, because honest reports of blank, incorrect, or copied math answers did not contact praise during intervention for Andrew and Steve, it is difficult to draw firm conclusions about the function or relative value of praise. By contrast, Nick’s reports did contact praise for admitting to one copied and one incorrect answer. It is possible that the instructions and rules about honesty included in the intervention package induced those honest reports but the effects were temporary because praise from the experimenter did not function as reinforcement. To clarify interpretations of these results, future research could replicate these procedures with a few modifications. First, when participants do not contact reinforcement programmed as part of intervention, a prompt fading procedure could be used to induce honest reports of blank, incorrect, copied math answers. Second, despite including preferred forms of praise in the intervention, it is reasonable to suspect that we may have obtained different outcomes if we paired the experimenter’s praise with other reinforcers. Researchers have found that contingent pairing with reinforcers may be required to establish praise as a reinforcer for individuals diagnosed with Autism Spectrum Disorder (Axe & Laprime, 2016; Lugo et al., 2017). However, little is known about the effects of pairing procedures for individuals without a diagnosis. Lastly, resulting from a limitation of our methods, Nick’s responding optimized reinforcement by contacting the maximum amount of time with preferred
activities while still receiving praise. Future research could address this limitation by requiring 100% honesty to contact the reinforcers arranged for honesty.

Another way in which we extended Sauter et al. (2020) was adding to the external validity of our findings through parent implementation. This is the first study to have caregivers implement a praise-based intervention for lying. Parent implementation data for Nick suggests that novelty of the experimenter’s praise was not the reason for the ineffectiveness of the praise-based intervention. However, the external validity of our findings can only be partially inferred due to the lack of experimental design for Nick and data for Andrew and Steve. Similar to previous studies, the external validity of our findings are limited in two ways. First, despite attempts to improve the ecological validity of our methods (i.e., removal of confederate, reporting math answers at once, and self-grading), our experimental arrangement is an approximation of the conditions in which lying typically occurs. For example, experimenters conducted sessions in a university clinic, arranged only difficult math questions, and used an answer sheet with incorrect math answers. Kazdin (1979) describes experimental arrangements as obtrusive if the measures are salient to the subject that their behavior is being evaluated. Reactivity, the influence of the subject’s awareness of the experimental arrangement, can be a problematic side effect of obtrusive measures if the subject’s awareness leads to different behavioral outcomes. Although our experimental arrangement could be considered obtrusive, reactivity is unlikely given participant responding after losing points for cheating during correspondence training (Kazdin, 1979; e.g., “The answer key says I got that one right!”). Second, our methods included a limited class of responses (i.e., lying about cheating), but lying encapsulates a broader class of responses (e.g., exaggerations, fabrications, white lies; Lee, 2013; Wilson et al., 2003). More research is needed on the reliability and generality of conditions that
evoke, and interventions that address, lying. Moreover, future research should include more thorough evaluations of the extent to which researchers would obtain similar findings when caregivers implement procedures.

Although preliminary, our findings from sessions implemented by Nick’s mom also suggest interesting directions for future research on correspondence training. Despite decades of research showing the generality of correspondence training across a variety of responses and settings (Cortez et al., 2014; Domeniconi et al., 2014; Lloyd, 2002), little is known about the social validity of correspondence training when it includes reinforcing honest reports of transgressions. Wolf (1978) argued for the widespread use of social validity measures to ensure the social significance of goals, appropriateness of procedures, and importance of outcomes. Social validity assessments often take the form of a questionnaire with the goal of evaluating the acceptability and viability of behavior change programs (Schwartz & Baer, 1991). Using social validity questionnaires to evaluate the outcomes of intervention allows for prediction and potential prevention of caregiver nonadherence. The paucity of social validity measures is a major limitation of this line of research given our findings. Nick’s mother reported concerns about the continuation of Nick’s peeking after observing the experimenter implementing correspondence training. Because Nick’s mother expressed concerns with providing access to a tablet for honest reports of peeking, we modified correspondence training to include a reprimand for Nick’s report of peeking in her final two sessions. Nick’s mother asked to include a reprimand for cheating because Nick began cheating during the parent implementation sessions of correspondence training. Following the addition of reprimands to correspondence training, Nick stopped peeking, left the worksheet blank, and reported he was unable to complete any of
the math worksheet (see Figure 2). Future research should include social validity questionnaires to ensure the viability of correspondence training in natural settings.

Another interesting extension would be evaluating alterations of correspondence training to address lying and cheating. During parent implementation sessions with Nick, correspondence training increased honest reports, but cheating decreased only after the addition of reprimands. Future studies may use a similar arrangement to understand the conditions that evoke and interventions that address lying in conjunction with cheating. Our study provides one of the first experimental arrangements that evaluated lying and cheating using a single-case design. However, one limitation of our arrangement was not knowing if the participant cheated until reviewing the video and completed worksheet after each session. Therefore, questions still remain about how caregivers could implement correspondence training in schools or homes. For example, without knowledge of a child’s cheating prior to their report, the procedural integrity of consequences delivered for cheating or lying may be limited. As illustrated in this study, using a hidden camera is one option. However, caregivers may find spying on their children using a hidden camera unacceptable (Schwartz & Baer, 1991). Alternatively, caregivers could rely on permanent products, such as completed homework, to verify reported events. One problem of permanent products is lying and cheating potentially producing different products across responses (LeBlanc et al., 2016). Therefore, future research could investigate reliable, socially acceptable ways of confirming reported behavior.

The efficacy of do-say correspondence training can be attributed to arranging higher value reinforcers for honesty compared to those for lying. The present investigation is the first study to evaluate whether an intervention package that included arranging praise for honesty competed with reinforcers concurrently available for lying. In our arrangement, the
consequences that previously maintained lying were delivered for honest reports of math answers regardless of performance. However, the reinforcers maintaining lying may not be known or easily malleable outside of experimental arrangements. For example, extinction for lying may not always be possible. In the praise-based intervention, we attempt to address this limitation by arranging reinforcers for honesty without removing the reinforcers for lying. Despite the inefficacy of the praise-based intervention, there is reason to believe programming reinforcement for honest reports could compete with unchanged reinforcement contingencies for lying. Athens and Vollmer (2010) found that altering dimensions of reinforcement such as quality, duration, and delay increased appropriate behavior when problem behavior was not placed on extinction. Furthermore, they found that altering these dimensions in combination proved more effective than in isolation. Although the experimenter- and caregiver-implemented praise-based intervention proved ineffective at improving honest reports, an intervention comprised of more immediate access to longer durations of higher quality reinforcement for honest reports may compete with reinforcement for lying. Future research should evaluate the competitive value of consequences for honesty with alterations such as help on difficult math, preferred snacks, a break before returning to the worksheet, or a synthesis of these options.

Despite these limitations, these findings have important implications for caregivers looking to address child lying in homes or schools. Many parenting websites and books recommend praising honesty in order to address lying (“10 Ways to Teach Your Children to be Honest”, 2019; Ditkowsky, 2018). However, when homework completion results in access to preferred activities, children may cheat or lie, and our results suggest that a praise-based intervention may not be sufficient to evoke or maintain honest reports of homework completion. Our findings contradict studies showing improvements in honest reports following a moral story,
rule, and instruction. Moreover, the addition of making the imbedded and explicit rules accurate by providing praise for honesty did not improve the efficacy of these procedures. These findings are likely due to the increased ecological validity of experimental methods by including competing consequences for lying and honesty as well as repeated opportunities to contact these contingencies. These findings should caution caregivers attempting to improve honesty from using a moral story, instruction, rule, and praise without considering competing reinforcement in place for lying.
REFERENCES


https://doi.org/10.1007/s40732-014-0009-z

https://doi.org/10.1901/jaba.1987.20-391

https://doi.org/10.1901/jaba.1996.29-519


https://doi.org/10.1007/s40732-014-0009-z

https://doi.org/10.1901/jaba.2012.45-721

https://doi.org/10.1007/s10964-006-9082-1

https://doi.org/10.1037/a0023425
https://doi.org/10.1901/jeab.1979.31-53

https://doi.org/10.1901/jaba.2009.42-343

http://doi.org/10.1080/016502500383340

https://doi.org/10.1901/jaba.1986.19-215

https://doi.org/10.1037/13938-001

https://doi.org/10.1901/jaba.1968.1-1


Table 1
Variations of the rule and instruction delivered during the praise-based intervention

<table>
<thead>
<tr>
<th>Rule and Instruction Variations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>
Table 2
*Interobserver agreement for answers and correspondence*

<table>
<thead>
<tr>
<th>Interobserver Agreement</th>
<th>Math Performance (Copied, Blank, Incorrect)</th>
<th>Vocal Reports</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew</td>
<td>98%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Steve</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Nick</td>
<td>97%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 1. Results from the concurrent chains praise preference assessment for Andrew (top panel), Steve (middle panel), and Nick (bottom panel).
Figure 2. Results for Andrew (top panel), Steve (middle panel), and Nick (bottom panel) displayed in a multiple-baseline across participants design.
Figure 3. The graph depicts peeking for Andrew during session. Each line represents the duration of a session. Increases in line elevation show the participant’s peeking throughout session. The dip in line elevation at the end of each line shows the participant stating completion.
Figure 4. The graph depicts peeking for Steve during session. Each line represents the duration of a session. Increases in line elevation show the participant’s peeking throughout session. The dip in line elevation at the end of each line shows the participant stating completion.
Figure 5. The graph depicts peeking for Nick during session. Each line represents the duration of a session. Increases in line elevation show the participant’s peeking throughout session. The dip in line elevation at the end of each line shows the participant stating completion.

Note: *Camera Malfunction
Qualities Survey

1. Please rank the following items as 1 (not important), 2 (important), or 3 (extremely important):

   a. That he/she has good manners. 
   b. That he/she tries hard to succeed. 
   c. That he/she is honest. 
   d. That he/she is neat and clean. 
   e. That he/she has good sense and sound judgement. 
   f. That he/she has self-control. 
   g. That he/she acts like a boy/girl should. 
   h. That he/she gets along well with other children. 
   i. That he/she obeys his/her parents well. 
   j. That he/she is responsible. 
   k. That he/she is considerate of others. 
   l. That he/she is interested in how and why things happen. 
   m. That he/she is a good student.

   1  2  3
   1  2  3
   1  2  3
   1  2  3
   1  2  3
   1  2  3
   1  2  3
   1  2  3
   1  2  3

2. Of the qualities listed above, which three would you say are the most desirable for your child to have?

   1.
   2.
   3.

3. Of the three you listed, which is the most desirable?

4. If you would like your child to be included in an honesty study, please provide your name and email below.
APPENDIX B:
A DIAGRAM OF THE SESSION AND OBSERVATION ROOMS

Observation Room

<table>
<thead>
<tr>
<th>One-way Mirror</th>
<th>One-way Mirror</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimenter Table</td>
<td>Participant Table</td>
</tr>
<tr>
<td>Experimenter</td>
<td>Participant</td>
</tr>
<tr>
<td>Hidden Camera</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C:
SAMPLE MATH WORKSHEET USED DURING EXPERIMENTAL SESSIONS

Name: __________________________
Date: __________________________

1. 23 x 90 = __________

2.  109   3.  8   4.  6
   x 0.1  x 7  ÷ 60

5.  977   6.  97   7. \(9^2\)
   x 85.9  x 499

8.  19   9.  972   10.  96
   ÷ 4  x 2  ÷ 5
APPENDIX D:
PICTURE OF ANSWER COPIED THROUGH THE KEY AND WRITTEN BACKWARDS BY NICK ON THE LEFT WITH THE ANSWER KEY ON THE RIGHT

\[
\begin{array}{c}
8. \quad 1130 \\
- \quad 6.55 \\
27191
\end{array} \quad \begin{array}{c}
8. \quad 1130 \\
- \quad 6.55 \\
16
\end{array}
\]
APPENDIX E:
LETTER WORKSHEET USED DURING PREASSESSMENT

Name: __________________________
Date: __________________________

1. Write the letter A: __________

2. What letter comes after S? __________

3. Write the letter C: __________

4. What letter comes after X? __________

5. Write the letter E: __________


7. What letter comes after M? __________

8. Write the letter B: __________

9. Write the letter D: __________

10. What letter comes after Y? __________
APPENDIX F:
SAMPLE MATERIALS USED TO ASSESS STORY AND HONESTY COMPREHENSION
DURING PRAISE PREFERENCE ASSESSMENT

Participant:
Date:

Robyn didn’t brush her teeth before she went to bed. Robyn’s father asked Robyn if she had brushed her teeth. Robyn said, “No, I didn’t brush them.”

1. Who is the story about? _________________________________________________

2. What did she do? ________________________________________________________

3. Did she tell the truth or a lie? ____________________________________________

Anna accidentally spilled a glass of milk on the carpet. Later, Anna’s mother asked Anna if she spilled the milk. Anna said, “No, the dog knocked over the glass of milk.”

1. Who is the story about? __________________________________________________

2. What did she do? ________________________________________________________

3. Did she tell the truth or a lie? ____________________________________________

Tina took one of her sister’s coloring felt pens. Tina’s sister asked Tina if she had the coloring felt pen. Tina said, “Yes, I do have it.”

1. Who is the story about? _________________________________________________

2. What did she do? ________________________________________________________

3. Did she tell the truth or a lie? ____________________________________________


1. Who is the story about? _________________________________________________

2. What did she do? ________________________________________________________

3. Did she tell the truth or a lie? ____________________________________________