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## A Punitive Environment Fosters Children's Dishonesty: A Natural Experiment

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The present study compared the lie-telling behavior of 3- and 4-year-old West African children ( $N = 84$ ) from either a punitive or a nonpunitive school. Children were told not to peek at a toy when left alone in a room. Most children could not resist the temptation and peeked at the toy. When the experimenter asked them if they had peeked, the majority of the punitive school peekers lied about peeking at the toy while significantly fewer nonpunitive school children did so. The punitive school children were better able to maintain their deception than nonpunitive school children when answering follow-up questions. Thus, a punitive environment not only fosters increased dishonesty but also children's abilities to lie to conceal their transgressions.

Deception is a prevalent phenomenon in nature. Animals from insects to primates use various means such as camouflage and mimicry to gain survival advantage over predators, preys, and even conspecifics (Searcy & Nowicki, 2005). Deception is a covert adaptive strategy particularly suited for the young and the weak because other strategies such as physical violence are often not an option for them (Bok, 1978; Jolly, 1999). For example, Whiten and Byrne (1988) observed that tactical deception was used primarily by young or low-ranked chimps. Given the adaptive nature of deception, one would expect that young human children would also resort to this strategy to gain advantages and minimize negative consequences. This expectation is consistent with the noble savage notion attributed to Rousseau (1762) who argued that children are naturally good and their dishonest behaviors are the result of the harsh environment that adults impose on them. There has been little direct empirical examination of this notion due to ethical constraints. The present study reports the results of a natural experiment that suggest that a punitive environment not only fosters dishonesty in

young children but also their abilities to lie to conceal their transgressions.

Although research on the development of lying in children dates back to the 19th century (Darwin, 1877; Stern & Stern, 1909), significant knowledge regarding this issue has been gained only in the last two decades (e.g., Lewis, Stranger, & Sullivan, 1989; Polak & Harris, 1999; Talwar & Lee, 2002, 2008). One common paradigm used to study children's lying behavior is a temptation resistance paradigm (TRP) where children are instructed not to peek at a toy while they are left alone. Due to the highly tempting nature of this situation, many children tend to peek. Later, children are queried as to whether they have peeked at the toy. This procedure creates a naturalistic situation where children are intrinsically motivated to lie to conceal their transgression and is similar to everyday situations where children tend to lie at home (Newton, Reddy, & Bull, 2000; Wilson, Smith, & Ross, 2003).

Existing studies employing the TRP have obtained a number of important findings (Lewis, 1993; Lewis et al., 1989; Polak & Harris, 1999; Talwar, Gordon, & Lee, 2007; Talwar & Lee, 2002, 2008). First, most children will peek at the target toy within a few seconds. Second, many preschoolers will lie and deny peeking with approximately half to two thirds lying between 3 and 4 years of age. Third, when children who have falsely denied peeking (i.e., the lie tellers) are probed with

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follow-up questions about the identity of the toy, younger children (6 years and younger) tend to blurt out the name of the toy. By doing so, they fail to make their responses consistent with their initial lie and reveal the fact that they had peeked at the toy and lied about peeking, which rendered their deceit readily detected by naïve adults. In contrast, about half of 6- to 7-year-old lie tellers tend to conceal their knowledge about the true identity of the toy by deliberately giving an incorrect name or simply feign ignorance. In such cases, children's deception was largely undetectable. With further increases in age, the majority of children become capable of maintaining consistencies between their initial lie and responses to the follow-up questions. This age-related increase has been found to be related to improvements in children's executive functioning (Talwar & Lee, 2008) and theory of mind understanding (Talwar et al., 2007).

While most research has examined the development of lying and its relation to children's cognitive abilities, little is known about social environmental factors that may contribute to the early development of dishonesty. It has been found that many delinquent behaviors such as cheating and stealing tend to co-occur with lying in adolescence and may be related to socialization factors in early childhood (Gervais, Tremblay, Desmarais-Gervais, & Vitaro, 2000; Stouthamer-Loeber, 1986). Like Rousseau, researchers have suggested that exposure to a harsh disciplinary style may be related to the development of antisocial deception, as children may seek to avoid severe punishments for their otherwise minor, impulse-driven transgressions (Lewis, 1993; Stouthamer-Loeber, 1986). Research has found that a punitive environment (e.g., authoritarian parenting, characterized by harsh physical and/or verbal punishment) has long-lasting effects on children and their behavior (Straus & Paschall, 2009; Tafa, 2002) by increasing negative behaviors including behavioral problems and moral transgressions (Dodge, 2002; Nix et al., 1999; Smetana, 2006; Turiel, 2006).

Thus, a punitive environment may also foster dishonesty in children. However, this has never been examined experimentally due to the ethical problems of randomly assigning children to punitive versus nonpunitive environments to test a causal relation between punitive environments and children's lie telling. To bridge this gap, the present study examined children's lying behavior by capitalizing on naturally occurring differences in the disciplinary philosophies in two schools in a West African country.

In this country, corporal punishment that involves inflicting physical pain for misbehavior or academic underachievement was first introduced by the French missionaries and widely practiced until its recent abolishment in public schools (Tafa, 2002). However, fee-paying private schools are exempted from this policy and allowed to decide their own discipline policies. As a result, some private schools continue to endorse the traditional punitive discipline model that is authoritarian in style (Tafa, 2002), whereas others reject such models, favoring the use of nonphysical child management techniques.

The deceptive behaviors in two groups of children living in the same West African neighborhood were examined. One group was enrolled in a private school that used a strict traditional authoritarian discipline model (henceforth referred to as the "punitive school"). Discipline in the form of beating with a stick, slapping of the head, and pinching was administered publicly and routinely for offenses ranging from forgetting a pencil or academic underachievement, to being disruptive in class (based on daily observation, school records, and school officials' reports). The education philosophy of this school is that children need reinforcement in order to learn and punitive discipline effectively teaches children not to misbehave so that learning will occur. In the other school, also private, (henceforth referred to as the "nonpunitive school"), children were disciplined for similar offenses with the use of time-outs and scolding, and for more serious offenses children were taken to the principal's office for further reprimand. These two schools thus offered a unique opportunity to examine the impact of punitive versus nonpunitive environments on young children's deceptive behaviors using the TRP.

## Method

### *Participants*

Children ( $N = 84$ ) from two West African schools were recruited. Half the children attended the punitive school: 21 three-year-olds ( $M = 3.41$  years,  $SD = 0.15$ ; 11 boys) and 21 four-year-olds ( $M = 4.23$  years,  $SD = 0.23$ ; 9 boys). The other half attended the nonpunitive school: 20 three-year-olds ( $M = 3.54$  years,  $SD = 0.22$ ; 11 boys) and 22 four-year-olds ( $M = 4.31$  years,  $SD = 0.27$ ; 13 boys). Informed consent was obtained from the children's parents. In all, 90% of all children who were eligible to participate received consent in both schools. All

children who received consent who were present on the days of testing were included in the sample.

*School characteristics.* The schools were two of several private schools in the same city that served parents with similar socioeconomic backgrounds in the region. Specific income levels of families were not available; however, both schools served children of wealthy families who could pay the school fees. Both schools were secular and did not include religious instruction. Both schools emphasized academics for their students. The nonpunitive school had approximately 250 elementary school students from 3 years onward, and the punitive school had approximately 350 elementary school students enrolled also from 3 years onward. However, the punitive school had a secondary school attached to it, whereas the nonpunitive school was only an elementary school. The nonpunitive school was also a newer school (established for less than 10 years) than the punitive school. The Peabody Picture Vocabulary Test—Third Edition (PPVT-III) was administered to a random sample of preschool children from both schools for receptive verbal ability. No significant differences were found between the two schools (punitive:  $M = 62.28$ ,  $SD = 4.16$ ,  $n = 16$ ; nonpunitive:  $M = 58.69$ ,  $SD = 7.63$ ,  $n = 16$ ).

*Discipline practices.* In the punitive school, disciplinary actions are routinely recorded in a log book for the elementary school so as to keep track of children's misbehavior and subsequent actions taken. An assessment of the log book revealed children in the punitive elementary school witnessed on average 40 incidents (range = 15–65 across grades) of corporal punishment (slapping, pinching, hitting with a stick) per day at the school. In addition, to the "serious" incidents that were logged in the log book, there were frequent uses of slapping the child on the head or hand when they committed minor offenses (e.g., forgetting a pencil, getting a math problem wrong). These were not recorded in the log book. However, a 4-day observation of the classrooms with 3- and 4-year-olds by researchers revealed such physical punishments were administered on average 15 times per day. In the nonpunitive school, there was no log book of children's misbehavior. However, a 4-day observation of the classrooms with 3- and 4-year-olds revealed no incidents of corporal punishment. For the current study, the authors were not allowed to copy log books and were unable to obtain records regarding the participating children's record of punishment. Therefore, only average numbers of incidents of

corporal punishment at the school level could be counted and reported here.

In both schools, 26 parents (14 from the punitive school) volunteered in one-on-one interviews that consisted of open-ended questions adapted from Oburu and Palmerus (2003) using six vignettes describing misbehaviors typical of children (e.g., refusing to sit in their chair or running into a busy street). Parents' answers to the question "What would you do?" were scored into four categories ranging from least intrusive to most intrusive: time-outs (sending child to a corner/out of room), reprimands (scolding, explaining why behavior is wrong), mild physical punishment (slapping, pinching, spank on the bottom), or severe physical punishment (repeated beating, kicking, whipping). The coding was done by two independent raters who were unaware of which school the parents' children attended, with 93% interrater reliability. When the data were combined for all six vignettes, among the four categories, most parents indicated they would use mild physical punishment for children's transgressions (punitive school: 67%; nonpunitive school: 69%), followed by reprimands (punitive: 28%; nonpunitive: 24%), but no parents endorsed using severe forms of physical punishment. Parents who were interviewed were also asked why they chose the respective schools for their children's education. Overall, 46% said reputation, 15% location, 31% reputation and location, and the rest gave other responses. No parents referred to the discipline model used by the school as a reason for choosing the school. However, over half (58%) of the parents from the nonpunitive school indicated that they felt the school could use corporal punishment (e.g., slapping the child) occasionally to discipline children.

#### *Procedure*

Children were seen individually and asked to play a guessing game by an experimenter who was born and raised locally. Children sat on chairs with their backs to the experimenter while she played a sound from a toy and they were asked to guess the toy's identity. This was done with two practice toys (a crying baby, a barking dog). Then the experimenter explained that she would have to leave to fetch an important item from her car parked on the street and would resume the game when she returned. She placed the target toy (lion) behind the children. The sound that accompanied it was unrelated to the toy (i.e., music from a greeting card) and could not be used to infer the identity of the

toy. Children were told, "Don't turn round to peek and look at the toy when I am gone." The experimenter left the room for 1 min and a hidden video camera recorded the child's behavior.

When the experimenter (who was unaware of the child's peeking behavior) returned, she told a child not to turn around and covered the toy with a piece of cloth. Once the toy was covered, the child was instructed to turn around in their chair. The child was then asked the critical question "When I was gone, did you turn around to look at the toy?" If children peeked at the toy but denied having peeked, they would be categorized as lie tellers; if they peeked at the toy and confessed their peeking, they would be categorized as confessors.

Children were then asked a follow-up question "What do you think the toy is?" To be successful in deceiving the experimenter, lie tellers must ensure consistency between their initial lie (that they had not peeked at the target toy) and their responses to the follow-up question. The lie tellers' answers to the follow-up question "What do you think the toy is?" were used to assess the lie tellers' ability to tell convincing lies. Lie tellers responded either by blurting out the correct answer ("a lion" or "large cat") and thereby implicating themselves in peeking and lying about peeking, or by giving incorrect but plausible responses that concealed their knowledge about the true identity of the toy and thus maintained consistency between their initial lie and their responses to the follow-up question (e.g., "I don't know," "a music instrument," or "a cellphone"). In our sample most children gave a guess about the identity, with only 10 children saying "I don't know."

It should be noted that the experimenter was not blind to which school she was testing in, as there was daily visible evidence of the discipline practices of each school. However, the experimenter was naïve to the hypotheses of the present study and the coders of video recordings were also naïve to the hypotheses of the present study and to the differences between the schools regarding discipline styles.

## Results

Preliminary analyses showed no sex differences and thus the data for both sexes were combined for the following analyses.

### *Children's Peeking Behavior*

Overall, 80% of children peeked at the toy. A binary logistic analysis was performed with the

peeking behavior (peeking vs. no peeking) as the predicted variable and age group and type of school as predictors. The model containing age group, type of school, and the interaction between the two as predictors did not yield significant results. Children in both schools were equally likely to peek at the toy when left alone (Table 1) and there were no significant age effects. A 2 (school)  $\times$  2 (age) analysis of variance (ANOVA) was conducted on peeking latency, which yielded no significant age or school effects (see Table 1). Levene's test of equality of error variances was also not significant. Children in both schools on average resisted a comparable amount of the time before they succumbed to temptation and peeked at the target toy.

### *Children's Lie-Telling Behavior*

Another logistic regression with the peekers' lying or confessing behavior as the predicted dichotomous variable and type of school and age group as the predictors was performed. The final best fitting model only contained the main effects of the two predictors, Nagelkerke  $R^2 = .28$ ,  $\chi^2(2, N = 67) = 14.05$ ,  $p = .001$ , whereas the interaction between the predictors was not significant. Inspection of the model revealed that only the school effect was significant above and beyond the combined contributions of the school and age group factors,  $\beta = 2.47$ , Wald (1) = 9.34,  $p = .002$ , odds ratio = 11.78 (Figure 1: 94% lied in the punitive school compared to 56% in the nonpunitive school). The odds ratio suggests that the peekers in the punitive school were 11.78 times more likely to lie to deny peeking than the peekers in the nonpunitive school. There were no significant age differences.

Table 1  
*Children's Peeking and Lying Behavior*

	Number of peekers	Mean peeking latency (SD)	Number of liars	Number of liars who concealed
Punitive school				
3 years	14	8.14 s (10.20)	13	10
4 years	17	4.75 s (2.91)	16	10
Nonpunitive school				
3 years	16	7.59 s (5.44)	8	3
4 years	20	8.95 s (14.94)	12	3

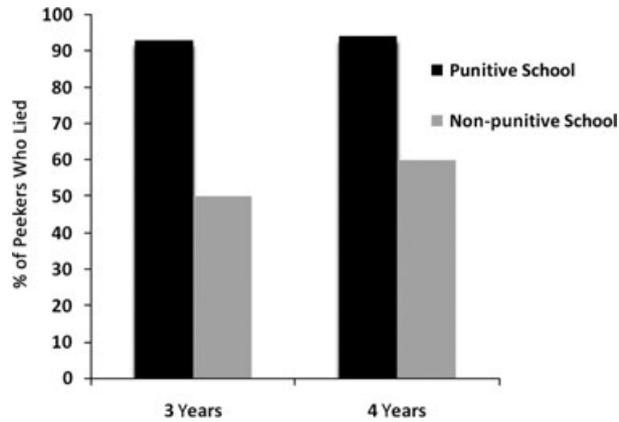


Figure 1. Percentage of the peekers who lied.

#### Response to the Follow-up Question

A logistic regression with the lie tellers' response (either the correct name of the target toy or other responses) as the predicted variable and type of school and age group as the predictors was performed. The final best fitting model contained only the type of school and age group main effects, Nagelkerke  $R^2 = .21$ ,  $\chi^2(2, N = 49) = 8.44$ ,  $p = .015$ . However, inspection of the model shows that only the school effect was significant above and beyond the combined contributions of the school and age group factors,  $\beta = 1.65$ , Wald (1) = 6.67,  $p = .01$ , odds ratio = 5.23 (Figure 2: 31% of the punitive school lie tellers provided the correct name for the toy whereas 70% of the nonpunitive school lie tellers did so). The odds ratio suggests that the lie tellers in the punitive school were 5.23 times more likely to give incorrect but plausible responses consistent with their initial lie that they did not peek at the toy. There were no significant age differences.

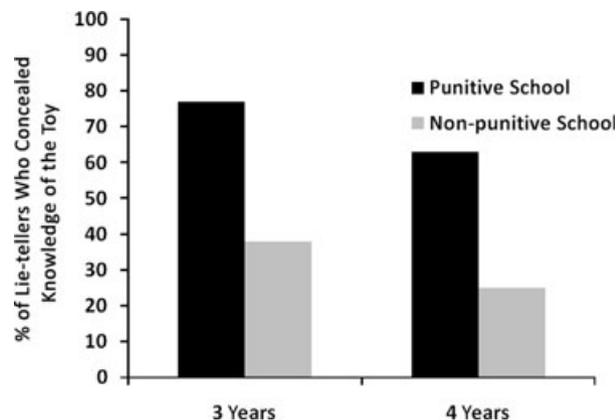


Figure 2. Percentage of lie tellers who concealed knowledge of the identity of the target toy.

#### Discussion

The present study revealed that young children from the punitive school were significantly more inclined to lie to conceal their minor transgression than those from the nonpunitive school. Consistent with previous studies examining North American children's lie-telling behavior (Lewis et al., 1989; Talwar & Lee, 2002), just over half of the children in the nonpunitive school lied. In contrast, almost all children from the punitive school lied. Moreover, after telling an initial lie of denying peeking, 69% of the lie tellers from the punitive school concealed their knowledge about the true identity of the toy by giving incorrect but plausible responses to the follow-up question.

It should be noted that this high rate of knowledge concealment has been found in previous studies (Talwar & Lee, 2002, 2008) only with children over 6 years of age with no known exposure to punitive parenting or schooling. Talwar and Lee (2002) further found that when child lie tellers give such knowledge-concealing responses, naïve adults fail to detect their deceit; instead, they are perceived as being truthful. Thus, the present findings suggest that children from the punitive school were not only more dishonest than those from the nonpunitive school but also were more advanced in their ability to tell convincing lies. Future analyses of children's ability to conceal nonverbally may also reveal children's abilities to conceal (or not). However, it should be noted that previous research has found that even when children do reveal nonverbal cues to their lying, they tend to be subtle and not easily detected by adults (Lewis et al., 1989; Talwar & Lee, 2002).

In contrast, while the children from the nonpunitive school were equally likely to peek than those in the punitive school, about half of the nonpunitive children lied about their peeking. Furthermore, most of these children failed to conceal their knowledge about the true identity of the toy by blurting out the toy's correct name. These results are highly comparable to those obtained from Western preschoolers with no known exposure to a punitive environment (Polak & Harris, 1999; Talwar & Lee, 2002, 2008; Talwar et al., 2007), suggesting that the West African children from the nonpunitive school are similar to their Western counterparts in terms of both their tendency and ability to lie convincingly.

The present evidence thus suggests that a punitive environment not only fosters dishonesty but also children's ability to lie to conceal their

transgressions. The 3- and 4-year-old lie tellers in the punitive school behaved as if they were over 6 years of age from a nonpunitive environment. This finding is surprising because studies with children from nonpunitive environments have shown that the ability to lie convincingly is significantly related to children's improvements in both executive functioning and theory of mind abilities (Talwar & Lee, 2008; Talwar et al., 2007). However, existing studies have consistently found that children from punitive environments tend to suffer general delays in cognitive development as well as specific deficits in executive functioning and theory of mind understanding (Hughes & Ensor, 2006; Karreman, van Tuijl, van Aken, & Dekovic, 2006; Pears & Moses, 2003; Ruffman, Perner, & Parkin, 1999; Smith & Brooks-Gunn, 1997; Straus & Pascall, 2009). It should be noted, however, that 3- and 4-year-olds in the punitive school had similar PPVT scores to those in the nonpunitive school, suggesting that the children in the punitive school had not yet shown signs of detrimental effects of harsh environment on general intellectual ability.

Thus, cognitive factors alone appeared not to be able to explain the findings of the present study. These findings may need to be explained in terms of social and motivational factors. One possibility is that children may use lying as a deliberate strategy to subvert the unfair and authoritarian school disciplinary policies. According to Turiel's moral theory of subversion (2005), in situations where there is inequalities and injustices in an oppressive and hierarchical system, individuals will use strategies such as deception to resist and to protect themselves. Indeed, it has been found that although adults and adolescents view deception in general as undesirable, they also see deception as an acceptable strategy to deal with unfair restrictions imposed by those in greater power and control (Perkins & Turiel, 2007). It is thus possible that the children in the punitive school might find the school's disciplinary policies to be unfair and unjust; they not only found lying to be justifiable to conceal their minor transgressions to avoid punishment but practice this strategy to subvert and protect themselves from the school's policies.

Complementary to the first possibility, another possibility is that children in the punitive school might have learned to improve their ability to lie to conceal transgression via trial and error or social learning. The punitive school in the current study uses a highly strict authoritarian discipline regime. In such an environment, children witness or experience for themselves that one can be severely

disciplined for minor offenses. They may learn quickly that if they commit a transgression, they have nothing to lose by lying: They will be punished for the transgression if discovered but if they lie and lie convincingly they may be able to conceal the transgression and completely avoid punishment. Thus, the harsh punitive environment serves to increase the motivational pressure for children to learn to lie for self-protection. With enhanced need for self-protection, children in the punitive school might learn from their own and others' experiences of success and failure in lying with much greater intensity than those in the nonpunitive school.

Some caveats should be noted when interpreting the present findings. One is that like any natural experiment, children were not randomly assigned to different schools. Thus any preexisting differences between the schools might have contributed to the group differences seen here. For example, parents who prefer and use punitive disciplinary methods at home may choose to send their children to the punitive school, although our survey seemed to show that parents from both schools apparently equally prefer "mild" forms of corporal punishment (e.g., slapping, pinching). Another possibility is that children from the two schools might be different in and of themselves. However, the PPVT scores for preschoolers from both schools were highly comparable and so were the latency to peek. Nevertheless, to draw a firmer causal conclusion that the school environment causes the group differences found here, one would need to use the unethical random assignment of children to punitive or nonpunitive environments. Another caveat is that although general data on the practices of each school were collected, we were unable to measure the specific degree and amount of punitive and nonpunitive discipline each participating child had received. However, given that discipline in the punitive school was a public event and created an atmosphere of expectations and consequences, even children who were not themselves regularly disciplined may have been influenced by such techniques. Yet another caveat is that it is unclear whether our findings indicated that children's lying was situation specific or person specific. That is, children in the punitive school might act dishonestly only when they encounter punitive environments. Alternatively, the punitive school might have fostered dishonesty in the children in a generalized way such that they act dishonestly regardless of whether they are in a punitive or nonpunitive environment. To address this issue, one needs to test the same children in two different contexts, one

punitive and the other nonpunitive. Such future studies will address the issue of specificity of honesty in children from the punitive environment. Also, they will help answer whether children would use lying as a deliberate strategy to subvert the unfair and unjust school disciplinary policies (Turiel, 2005) because they should be more inclined to lie and lie convincingly in the punitive environment than in the nonpunitive environment.

In summary, the present study revealed that preschool children who are exposed to punitive school environment are more inclined to lie to conceal their transgression and are able to tell more convincing lies than those from nonpunitive school environment. Thus, consistent with Rousseau's (1762) hypothesis, children's dishonest behaviors may be fostered as a result of the harsh punitive environment imposed on them by adults.

### References

- Bok, S. (1978). *Lying: Moral choice in public and private life*. London: Quartet Books.
- Darwin, C. (1877). A biographical sketch of an infant. *Mind*, 2, 285–294.
- Dodge, K. A. (2002). Mediation, moderation, and mechanisms in how parenting affects children's aggressive behavior. In J. G. Borkowski, S. L. Ramey, & M. Bristol-Power (Eds.), *Parenting and the child's world: Influences on academic, intellectual and social development* (pp. 215–229). Mahwah, NJ: Erlbaum.
- Gervais, J., Tremblay, R. E., Desmarais-Gervais, L., & Vitaro, F. (2000). Children's persistent lying, gender differences, and disruptive behaviors: A longitudinal perspective. *International Journal of Behavioral Development*, 24, 213–221.
- Hughes, C., & Ensor, R. (2006). Behavioral problems in 2-year-olds: Links with individual differences in theory of mind, executive function and harsh parenting. *Journal of Child Psychology and Psychiatry*, 47, 488–497.
- Jolly, A. (1999). Primate communication, lies, and ideas. In A. Lock & C. Peters (Eds.), *Human symbolic evolutions* (pp. 167–177). Oxford, UK: Blackwell.
- Karremans, A., van Tuijl, C., van Aken, M. A. G., & Dekovic, M. (2006). Parenting and self-regulation in preschoolers: A meta-analysis. *Infant and Child Development*, 15, 561–579.
- Lewis, M. (1993). The development of deception. In M. Lewis & C. Saarni (Eds.), *Lying and deception in everyday life* (pp. 90–125). New York: Guilford.
- Lewis, M., Stranger, C., & Sullivan, M.W. (1989). Deception in 3-year-olds. *Developmental Psychology*, 25, 439–443.
- Newton, P., Reddy, V., & Bull, R. (2000). Children's everyday deception and performance on false-belief tasks. *British Journal of Developmental Psychology*, 18, 297–317.
- Nix, R. L., Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Pettit, G. S., & McFadyen-Ketchum, S. A. (1999). The relation between mothers' hostile attribution tendencies and children's externalizing behavior problems: The mediating role of mothers' harsh discipline practices. *Child Development*, 70, 896–909.
- Oburu, P. O., & Palmerus, K. (2003). Parenting stress and self-reported discipline strategies of Kenyan caregiving grandmothers. *International Journal of Behavioral Development*, 27, 505–512.
- Pears, K. C., & Moses, L. J. (2003). Demographics, parenting, and theory of mind in preschool children. *Social Development*, 12, 1–20.
- Perkins, S., & Turiel, E. (2007). To lie or not to lie: To whom and under what circumstances. *Child Development*, 78, 609–621.
- Polak, A., & Harris, P. L. (1999). Deception by young children following noncompliance. *Developmental Psychology*, 35, 561–568.
- Rousseau, J. J. (1762). *Emile ou de l'éducation*. Paris: A LA Haye.
- Ruffman, T., Perner, J., & Parkin, L. (1999). How parenting style affects false belief understanding. *Social Development*, 8, 395–411.
- Searcy, W. A., & Nowicki, S. (2005). *The evolution of animal communication: Reliability and deception in signaling systems*. Princeton, NJ: Princeton University Press.
- Smetana, J. G. (2006). Social domain theory: Consistencies and variations in children's moral and social judgments. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 119–154). Mahwah, NJ: Erlbaum.
- Smith, J. R., & Brooks-Gunn, J. (1997). Correlates and consequences of harsh discipline for young children. *Archives of Pediatric Adolescent Medicine*, 151, 777–786.
- Stern, C., & Stern, W. (1909). *Recollection, testimony and lying in early childhood*. Washington, DC: American Psychological Association.
- Stouthamer-Loeber, M. (1986). Lying as a problem behavior in children: A review. *Clinical Psychology Review*, 6, 267–289.
- Straus, M. A., & Paschall, M. J. (2009). Corporal punishment by mothers and development of children's cognitive ability: A longitudinal study of two nationally representative age cohorts. *Journal Aggression, Maltreatment & Trauma*, 18, 459–483.
- Tafa, E. M. (2002). Corporal punishment: The brutal face of Botswana's authoritarian schools. *Educational Review*, 54, 17–26.
- Talwar, V., Gordon, H., & Lee, K. (2007). Lying in the elementary school: Verbal deception and its relation to second-order belief understanding. *Developmental Psychology*, 43, 804–810.
- Talwar, V., & Lee, K. (2002). The development of lying to conceal a transgression: Children's control of expressive behavior during verbal deception. *International Journal of Behavioral Development*, 26, 436–444.

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- Talwar, V., & Lee, K. (2008). Socio-cognitive correlates of children's lying behaviour: Conceptual understanding of lying, executive functioning, and false beliefs. *Child Development, 79*, 866–881.
- Turiel, E. (2005). Resistance and subversion in everyday life. In L. Nucci (Ed.), *Conflict, contradiction, and contrarian elements in moral development* (pp. 3–20). Mahwah, NJ: Erlbaum.
- Turiel, E. (2006). The developmental of morality. In W. Damon, R. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional and personality development* (6th ed., pp. 789–856). New York: Wiley.
- Whiten, A., & Byrne, R. (1988). Tactical deception in primates. *Behavioral and Brain Sciences, 11*, 233–273.
- Wilson, A. E., Smith, M. D., & Ross, H. S. (2003). The nature and effects of young children's lies. *Social Development, 12*, 21–40.