Educators' Ability to Detect True and False Bullying Statements

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The majority of research investigating children's lie-telling behavior has focused on lay people and legal professionals' abilities to detect deception. Fewer researchers have assessed educators' abilities to evaluate the veracity of children's reports of bullying. In this study, educators' abilities to detect true and false accounts of bullying and educators' confidence ratings of their abilities to detect the veracity of children's bullying accounts were examined. Participants (93 educators) were shown video clips of children (between the age of 4 and 8 years) telling true and false statements about being bullied. Participants were asked to assess the veracity of the child's bullying statement and rank how confident they felt about their responses. Overall, educators' ability to detect both true and false accounts of bullying was not significantly above chance levels. Regardless of reported years of experience with children, detection rates were approximately the same; educational professionals with fewer years of experience yielded similar detection rates to those with more experience. In general, educators were not very confident in their abilities to distinguish between children's true and false reports. However, all educators were significantly more confident in their overall ratings of false stories than true stories. While educators are not accurate in detecting deception, the current findings suggest that they may be over confident when assessing false accounts of bullying; condemning students that are falsely accused of bullying could have negative consequences for student, their classmates, and for the teacher. Through understanding educators' perceptions of children's lie-telling behavior, especially with respect to bullying, appropriate and effective bullying interventions can be developed by school psychologists in collaboration with educators.

Introduction

Concerns among educational personnel, and parents about bullying behavior are often warranted; researchers have revealed that bullying often leads to serious and detrimental outcomes for victims of bullying incidents (Card & Hodges, 2008; Fekkes, Pijpers, & Verloove-Vanhorick, 2005). More specifically, researchers have shown that victims of bullying have higher rates of depression, bedwetting, sleep problems, and other health concerns (Fekkes et al., 2005). Since children spend the majority of their day in school, it is vital that educational personnel (e.g., educators, school psychologists and administration) are not only aware of effective bullying interventions (Fekkes et al., 2005), but are also trained in assessing the veracity of bullying reports.

Often, it is difficult to decipher whether or not a child is being truthful when reporting a bullying incident and it can be extremely challenging for school personnel to recognize when children are exaggerating accounts of victimization. In such situations, educators are challenged to assess the veracity of bullying reports and subsequently decide whether such accounts of bullying merit interventions. Falsely accusing a the student-teacher relationship and lead to penalizing student of bullying could have detrimental consequences for innocent students. Conversely, not providing proper intervention when a student states they are being bullied, but are not believed, may also have negative consequences. While it appears that teachers are confident in their abilities to detect deceptive accounts of bullying (Bauman & Hurley, 2005), research has shown that adults' ability to detect lie-telling behavior is unremarkable, hovering around the level of chance (DePaulo, Stone, & Lassiter, 1985; Ekman & O'Sullivan, 1991; Leach, Lindsay, Koehler, Beaudry, Bala, Lee, & Talwar, 2009; O'Sullivan, 2005; Vrij, 2000; Vrij & Mann, 2005).

The majority of research investigating children's lie-telling behavior has focused on lay people and legal professionals' abilities to detect deception (Leach, Talwar, Lee, Bala, & Lindsay, 2004). Conversely, there is a considerable lack of research examining educators' abilities to assess true and false stories. Fewer researchers have assessed educators' abilities to evaluate the veracity of children's reports of bullying. Through understanding educators' perceptions of children's lie-telling behavior, especially with respect to bullying, appropriate and effective bullying interventions can be developed by school psychologists in collaboration with educators. Thus, it is imperative to systematically explore educators' abilities to differentiate between truthful or deceitful accounts of bullying in order to appropriately respond to bullying incidents in school environments.

Bullying in Schools

Bullying behavior often surfaces in school settings and is defined as any action that has the following defining features: a power imbalance, a conscious intention to harm, and a repetitive occurrence of the harmful behavior (Bauman & Hurley, 2005; Hazler, Miller, Carney, & Green, 2001; Olweus, 2001). These three bullying characteristics have been repeatedly supported in empirical literature (Mischna, Scarcello, Pepler, & Wiener, 2005). While the majority of literature highlights these defining characteristics of bullying, little research has focused on practical skills teachers use in the case of bullying incidences. Educators often have to intervene in cases of bullying based on intuition and preconceived biases of the children—which could lead to false accusations of bullying or even overlooking bullying when perpetrated by unlikely students. Although previous literature has attempted to conceptualize bullying through an

ecological perspective, researchers have neglected to provide teachers with the skills needed to properly assess accounts of bullying in a school setting.

Teachers and Bullying

Researchers, parents, and school personnel alike are aware that bullying is a problem in schools. Although teachers and educators believe that they have a responsibility to intervene and prevent bullying, many believe they lack the skills to intervene (Boulton, 1997). In a study by Boulton (1997), 138 educators (from infant to high school) were asked to complete a questionnaire about bullying. Overall, 98.6% felt they had a responsibility to prevent bullying in the class room and 91.3% on the playground. However, when asked to rate how confident they were in preventing and dealing with bullying on a scale from 4 (low confidence) to 20 (high confidence), the mean score was 9.2, indicating that educators did not have a great deal of confidence in their abilities to intervene.

Educators continue to struggle with targeting bullying behaviors and have difficulty differentiating between bullying, harmless teasing, and play fighting (Mishna et al., 2005). Researchers have also suggested that because teachers often associate bullying with physical harm, there is a tendency for teachers to focus on physical evidence of bullying incidents (Bauman & Del Rio, 2005; Hazler et al., 2001; Mishna et al., 2005; Mishna, Pepler, & Wiener, 2006). In turn, cases of indirect bullying are often disregarded, as the potential for physical harm is less overt (Bauman & Del Rio, 2005; Hazler et al., 2001; Mishna et al., 2005). Indirect bullying has been defined as an attempt to hurt or damage the self-esteem or social relationships of another (Atlas & Pepler,1998). As such, no physical evidence or physical actions are needed in order for someone to bully indirectly. Teachers tend to show

greater empathy towards victims of physical bullying versus victims of relational bullying (Bauman & Del Rio, 2005).

Indeed, educators have difficulty targeting less overt cases of bullying (Marshall, Varjas, Meyers, Graybill, & Skoczylas, 2009; Mishna et al., 2006). Another problem of bullying in school settings is that educators often hear accounts of bullying after it occurs, leaving them to make decisions about the situation based solely on verbal reports. More specifically, situations arise when students present conflicting accounts of a given event. While some children give false accounts of bullying, other children will falsely deny bullying behavior. Unfortunately, few studies have investigated educators' abilities to accurately assess children's stories, specifically with respect to bullying.

Confidence in judgments is often a considered when evaluating accuracy, given the relationship between perceived confidence and accuracy. For example, if someone is not confident in his or her decision, it may explain a lower rate of accuracy as it can be assumed the individual is simply "guessing". One study found that witnesses who were given more time to interact with a perpetrator had increased accuracy and confidence when judging the veracity of the perpetrator's statements (Bothwell, Deffenbacher, & Brigham, 1987). Many professionals who work with children, including lawyers, judges, and police officers believe that given their profession, that they have an enhanced ability to detect deception, and as such are overconfident in their own abilities (Ekman & O'Sullivan, 1991; Leach et al., 2004). However, researchers who have investigated untrained observers' deception detection in children have found that detection rates of truthful and deceitful statements hover around chance levels (Bond & DePaulo, 2006; Edelstein, Luten, Ekman, & Goodman, 2006; Talwar, Lee, Bala, & Lindsay, 2006). With respect to assessing bullying situations,

Bauman and Hurley (2005) explored educators' perceived confidence and found that educators often overestimate their ability to detect bullying incidents.

A few studies have found that overall, adults were at level of chance in detecting children's lies, adults who have professional experience with children (e.g., educational psychologists and child care professionals) were better at detecting the veracity of children's reports of mundane events such as a true or false story of a trip to the museum (Crossman & Lewis, 2006; Talwar, Crossman, Muir, & Williams, 2011; Westcott, Davies, & Clifford, 1991). Because adults who have professional experience with children are better at detecting children's lies about mundane events, one would question whether these skills be transferred to specifically assessing the veracity of bullying allegations.

The current study will primarily address educators' (e.g., school, daycare, and preservice educators) abilities to detect true and false accounts of bullying. Since educators spend a considerable amount of time interacting with a variety of students, it is hypothesized that overall, educators will yield detection rates above chance levels. Furthermore, years of experience with children will also be examined to determine if participants reported years of experience impacts educators' detection abilities. Additionally, educators are often confident in their abilities to differentiate between true and false accounts of bullying (Bauman & Hurley, 2005). Thus, the current study will also examine educators' confidence ratings with respect to their beliefs about the veracity children's bullying accounts. In knowing educators' abilities to identify true and false accounts of bullying and their perceived confidence of their detection rates, psychologists may be more effective in their collaboration with educators in the development of appropriate interventions.

Method

Participants

A total of 93 educators (n = 32 elementary school, n= 32 daycare, n= 28 preservice teachers) participated in this study, in which 90.32 % were female (one participant did not report his/her gender). Gender differences within the study are representative of Canadian employment statistics, which state that 69% of elementary school teachers (Lin, 2006), and 95.9% of daycare educators (servicecanada.org) are female. School and daycare teachers were recruited during professional development workshops; preservice teachers were recruited by a research assistant who made announcements about the study in various university classrooms. Upon completion of the study, all participants received ten dollars compensation for their participation in the study.

The age range of educators was between 19 and 65 years (school educators, M = 37.07, SD = 10.40; daycare educators, M = 36.13, SD = 10.06; and preservice educators, M = 23.00, SD = 3.95). In the school and daycare educator groups, all participants had prior experience working with children ranging from infancy to 12 years of age. Participants' direct experience working with children ranged from 0 to 100- hours per week; years of reported teaching experience were self-reported and could range from professional teaching experience (e.g., school teacher) to more informal teaching experience (e.g., camps, religious lessons). Year of experience varied across educational professions (school, M = 11.41, SD = 8.39; daycare, M = 8.88, SD = 7.27; and preservice, M = 4.27, SD = 4.29) and ranged between 0 and 33 years.

Materials

Participants in this study were shown video clips of children (between the age of 4 and 8 years) telling true and false statements about being bullied. Children's true stories were about an actual bullying event they had experienced and their false stories were about a bullying event they had never experienced; the veracity of the stories were verified by the children's parents. Children were given 10 minutes to practice before being asked to report their story. Children were informed that they would tell both true and false accounts of bullying to an interviewer and were asked to try and convince the interviewer that their story was true. The interviewer was blind to whether the story was true and false and prompted children with open-ended question (e.g., "Tell me what happened"). Children's reports were approximately 5 minutes in length. Upon completion and the children all received a small toy as compensation.

Procedure

Educators were asked to watch the aforementioned videos of the children telling true or false statements about being bullied. All participants viewed videos of 8 children telling true or false statements about being bullied. Participants were notified that some of the children were prompted to tell true stories about being bullied, while other children were asked to fabricate false bullying events. The videos were shown to groups of teachers (ranging from 5 to 10 participants per group) at a professional development event. Accompanying the video, the participants were given a questionnaire; participants were asked to state whether they thought children were being honest or dishonest in their

statements and were then asked to rate their perceived level of confidence supporting their choices using a 5-point scale (1 = not confident, 5 = very confident). Although the videos were watched in a group setting, the questionnaires were completely individually. Notably, the entire study took each participant approximately one hour and the order of the videos, with respect to true and false bullying accounts, was counterbalanced.

Results

Accuracy

The overall accuracy in deception detection was calculated for all participants (see Table 1). On average, educators were 49.85% accurate in their detection abilities (*SD* = 15.87, range 12.50 to 87.50%), which was not significantly better or worse than chance, $t(86) = -0.85$, *ns*. Educators detected children who told false bully stories 45.11% (*SD* = 21.85) of the time and children who told true bully stories 54.40% (*SD* = 23.15) of the time. In order to determine whether statistically significant differences occurred between accuracy in truth and false accounts of bullying, a *t*-test was computed. Results suggest that participants were more accurate at detecting true than false accounts of bullying, $t(85) = 2.81$, $p = .006$, d = .43, 95% CI [2.804, 16.381]..

A composite score of total accuracy was calculated by adding the accuracy in detecting true and false accounts of bullying. Additionally, reported years of experience were grouped into three groups (from 1 to 4 years, 5 to 9, and 10 or more). For determining the effect of educational professional group and years of experience on participants' accuracy at differentiating between true and false accounts of bullying, a 3 (school teachers, daycare workers and students) by 3 (from 1 to 4 years, 5 to 9 years, and 10 or more) ANOVA was computed. The results indicate there were no

significant differences between educational professional groups, $F(2,57) = 2.20$, *ns,* or between years of experience in total accuracy, $F(2,57) = 0.28$, *ns*.

Table 1
Descriptive Statistics of Accuracy and Confidence and by Group

	Accuracy			Confidence		
”	Mean % (SD)	Standard Error	Range %	Mean (SD)	Standard Error	Range
School Educators						
True Accounts	57.76 (24.19)	4.49	25 – 100	2.53 (0.77)	.14	1.5 – 4.5
False Accounts	45.69 (21.20)	3.94	0 - 75	2.61 (0.73)	.13	1.25 – 4
Total	51.72 (12.82)	2.38	25 – 75	2.57 (0.66)	.12	1.5 – 4.25
Daycare Educators						
True Accounts	61.61 (20.95)	4.08	25 - 100	2.40 (0.86)	.17	1 – 4.5
False Accounts	42.86 (20.25)	3.91	0 - 75	2.44 (0.72)	.14	1 – 4.25
Total	52.78 (16.74)	3.22	25 – 75	2.42 (0.74)	.15	1 – 4.13
Preservice Educators						
True Accounts	46.43 (18.90)	3.75	0 -75	2.38 (0.58)	.11	1.25 – 3.25

False Accounts	46.43 (25.20)	4.99	0 - 100	2.61 (0.71)	.14	1.25 - 4
Total	47.60 (17.33)	3.40	12.5 – 87.5	2.49 (0.55)	.11	1.25 – 3.5

Signal Detection

Accuracy reflects the following two separate aspects of the participants' decision-making process, described by signal detection theory: (1) their ability to discriminate between true and false statements (e.g., deception detection ability, usually referred to as *d'*), and (2) biases (e.g., the tendency to favor a particular response, usually referred to as *criterion c*). To explore adults' lie-detection skill further, analyses were computed using signal detection theory. Signal detection analysis is based on the proportion of hit rates (detecting true accounts of bullying) and false alarms (rating an account as truthful when it was a lie).

Discrimination abilities (*d'),* or the ability to differentiate between true and false stories, ranged from -1.82 to 1.82, with a score of zero indicating that there is no discrimination occurring between the two stories. Table 2 shows the descriptive statistics of *d'*. Overall discrimination ability was not significantly different from zero, (M = - 0.05; SD = 0.83), $t(92) = -.67$, *ns*. Overall, educators were not able to distinguish children's true and false accounts of bullying.

A one-way ANOVA was computed to examine whether there were significant differences in discrimination between participants' educational professional group. When comparing educators' abilities to detect true from false reports by educational professional group, no significant differences were found, $F(2,89) = .60$, *ns* (See Table 2).

Additionally, in order to examine the effect of years of experience in discriminant index, a one-way ANOVA was computed. Descriptive statistics for years of experience are displayed on Table 3. Results suggest that groups of years of

experience (1 to 4; 5 to 9; 10 and above) do not differ in the discriminant index, $F(2,71) = 0.96$, *ns*. Therefore, ability to detect true or false statements of bullying does not depend on number of years of experience with children.

In order to examine adults' tendency to display either a truth or a lie bias, a *criterion c* analysis, which measures participants' tendency to display a bias towards true or false statements when responding, was computed. *Criterion c* measures were found to range between -1.15 to 0.67, with a score of zero indicating that no bias exists. Descriptive statistics for *criterion c* are shown in Table 2. Overall, *criterion c* ($M = -0.13$, $SD = 0.39$) was found to be significantly different from zero, $t(92) = 24.59$, $p = .000$, d = 2.56, 95% CI [.576, .677] indicating a truth bias. Thus, educators tended to believe in children's accounts of bullying, regardless of the veracity of their report.

To examine if there were any significant differences in *criterion c* between educational professionals (school, daycare and preservice educators) a one-way ANOVA was computed. A statistically significant difference was found when the *criterion c* index was compared between the educational professional groups, $F(2,89) = 3.28$, $p = .042$, $\eta^2 = .07$. Post-hoc analyses indicate that daycare educators differ significantly from preservice educators (*Tukey HSD*, Mean Difference= .25, $p = .013$, 95% CI [.033, .276]). In other words, preservice educators tend to have a higher truth bias than daycare educators. No other significant differences were found. To examine if there were any significant differences in *criterion c* based on years of experience a one-way ANOVA was computed. No significant differences were found (See Table 2).

Confidence Ratings

In order to assess educators' confidence in their judgments, participants rated their confidence from 1 (not confident) to

5 (very confident). Descriptive statistics for total confidence are presented in Table 1. A one-way repeated measures ANOVA was computed to compare the effect of educational professional group (school, daycare and preservice educators) on confidence in true and false accounts of bullying.

Table 2
Descriptive Statistics for Signal Detection Indexes

	d'			Criterion c		
	Mean (SD)	Standard Error	Range	Mean (SD)	Standard Error	Range
School Educators	-0.01 (0.73)	.08	-1.82 – 1.35	-0.16 (0.45)	.05	-1.15 - .67
Daycare Educators	0.05 (0.87)	.10	-1.35 – 1.35	-0.25 (0.32)	.04	-.91 - .34
Preservice Educators	-0.18 (0.89)	.11	-1.82-1.82	0.00 (0.36)	.05	-.67 - .67
1 to 4 years	-0.21 (0.74)	.10	-1.82 – 1.35	-0.02 (0.35)	.05	-.91 - .67
5 to 9 years	-0.13 (0.89)	.14	-1.35 – 1.35	-0.17 (0.29)	.06	-1.15 - .34
10 or more years	0.08 (0.77)	.08	-1.82-1.35	-0.21 (0.38)	.05	.91 - .67

Descriptive statistics for confidence in judgment of true and false accounts of bullying are presented in Table 1. No significant differences were found between their reported confidence with respect to false and true bullying reports or in confidence in their judgment between the different educational professionals.

When examining the effect of years of experience on reported confidence ratings, no significant results were found.

Discussion

Educators are frequently asked to assess the veracity of children's accounts of bullying in school settings. However, deception detection research has neglected to focus on the one profession that requires interaction with children on a regular basis: educators. The purpose of the current study was to: (a) assess educators' abilities to detect true and false accounts of bullying; (b) examine educators' accuracy in detecting true and false accounts of bullying based on their years of experience with children; and (c) to examine educator's confidence ratings of their abilities to detect the veracity of children's bullying accounts.

Contrary to our hypothesis, educators' overall ability to detect both true and false accounts of bullying was not significantly above chance levels. Similar to findings in deception detection literature with other professionals (e.g., Bond & DePaulo, 2006; Edelstein et al., 2006; Leach et al., 2009; Vrij, 2000) educators were not able to distinguish true from false accounts of bullying. Conversely, a few studies that examined the detection abilities of professionals working with children found that experience with children yields higher deception detection rates (Crossman & Lewis, 2006; Westcott et al., 1991). The results of the current study suggest that experience with children does not improve detection rates when assessing the veracity of bullying events. While educators of the current study hover around chance levels when detecting true accounts of bullying, they performed significantly worse than chance in their detection of false accounts of bullying.

Analyses revealed that educators tended to believe children's accounts of bullying, regardless of the veracity of the report. In other words, educators tended to hold a truth bias. Specifically, preservice educators exhibited the greatest truth bias, while daycare educators showed the least truth bias. These results lend support for educators' significantly

lower than chance detection rates of false stories. Although this truth bias could be problematic, this bias has many advantages in educators' assessment of bullying situations. Since educators seem to hold a truth bias, they may be more likely to investigate accounts of bullying regardless of their perceived veracity—which is important given the importance of intervening in bullying incidents in school. Bullying can have negative and detrimental effects on students (Fekkes et al., 2005; Card & Hodges, 2008) and merit serious investigation. Conversely, truth biases could lead to false accusations of bullying behavior—wrongfully condemning students for bullying. In turn, students who are notoriously acting out and then are wrongfully accused of a bullying incident may be unjustly punished for allegedly bullying. Educators should be made cognizant of their tendency to hold this bias and the influence it may have on their decision-making processes in school settings.

Further, it was hypothesized that educators' years of experience would have a positive influence on detection rates; however, this was not supported. Regardless of reported years of experience with children, detection rates were approximately the same; educational professionals with fewer years of experience yielded similar detection rates to those with more experience. There is no relationship between accurate detection abilities and years of experience, suggesting that detecting false accounts is not an intuitive ability, but a skill that must be learned and practiced. Therefore, it should not be assumed that more years of experience yields better deception detection abilities.

Although it has been reported that educators are often confident in their abilities to differentiate between true and false accounts of bullying (Bauman & Hurley, 2005), this was not the case in the current study. Overall, educators were not very confident in their abilities to distinguish between

children's true and false reports. However, all educators were significantly more confident in their overall ratings of false stories than true stories. While educators are not accurate in detecting deception, the current findings suggest that they may be over confident when assessing false accounts of bullying; condemning students that are falsely accused of bullying could have negative consequences for student, their classmates, and for the teacher.

While research has shown that professionals with experience working with children yield detection rates above chance levels when assessing the veracity of mundane life events (Crossman & Lewis, 2006; Westcott et al., 1991), this ability does not translate to accounts of bullying. Therefore, educators should be cautious when assessing the veracity of bullying reports, knowing that their detection abilities hover around chance. Educators must also be aware that they have the tendency to be overconfident in their assessment of false accounts. Thus, educators should ensure that their perceived confidence does not lead to hasty conclusions about bullying events. Both false allegations of bullying and neglecting to intervene in real bullying situations could lead to detrimental outcomes.

Notably, children's true and false accounts of bullying were presented without a great deal of context in this study; however, bullying often occurs within a larger context and typically involves the interaction between numerous people (Olweus, 2001; Rodkin, 2004). Arguably, the video stimuli used in this study do not account for the nuanced nature of true and fabricated accounts of bullying in school settings. However, in presenting isolated video clips free of context, possible implicit assumptions about a given child were eliminated. While the unnatural context of a video clip may be seen as a limitation of this study, the current research project highlights the tendency for educators to hold a truth bias even when they do not know the children and the

contexts. In turn, the current study highlights educators' truth biases and subjectivity even in fairly objective and isolated presentations of accounts of bullying. Therefore, educators should be especially cautious in contexts in which they may be more prone to biases.

Educators have pervasive and ongoing relationships with their students. Thus, if educators do not validate students' bullying statements, students may lose confidence in their teachers and be less likely to report future instances of bullying (Atlas & Pepler, 1998; Mishna et al., 2004; Mishna et al., 2005). Conversely, educators who falsely accuse students of bullying may also damage the student-teacher relationship. Future research should aim to develop specific training protocols that will aid educational professionals in their abilities to correctly detect deceitful bullying statements, while preserving relationships with students. Since educational professionals have shown that they are able to detect deception in mundane life events (Crossman & Lewis, 2006), these skills should be used as a starting point to develop more accurate programs for educators, building on educators' existing abilities and addressing problem areas highlighted in the current study. In turn, more appropriate training programs for educators can be developed. Finally, educators should be cognizant of their truth bias and over-confidence when assessing the veracity of bullying statements.

There is little research surrounding educators' abilities to differentiate between true and false accounts of bullying. Hopefully, this study will provide impetus for future studies to examine educators' abilities to assess the veracity of bullying statements. Since bullying poses serious physical and psychological consequences for children (Fekkes et al., 2005; Card & Hodges, 2008) and often occurs in school settings, it is vital to explore educators' abilities to detect truthful and false accounts of bullying in order intervene when

appropriate and to avoid false bullying allegations. The current study has practical implication for school-based bullying interventions, as it will inform both educators and school psychologists about educators' lie-detection abilities and perceived level of confidence with respect to assessing the veracity of bullying statements.

References

Atlas, R. S., & Pepler, D. J. (1998). Observations of bullying in the classroom. *The Journal of Educational Research, 92*, 86-99. doi: 10.1080/00220679809597580

Bauman, S., & Del Rio, A. (2005). Knowledge and beliefs about bullying in schools. *School Psychology International, 26*, 428-442. doi: 10.1177/0143034305059019

Bauman, S., & Del Rio, A. (2006). Preservice yeachers' responses to bullying scenarios: Comparing physical, verbal, and relational Bullying. *Journal of Educational Psychology, 98*, 219-231. doi: 10.1037/0022-0663.98.1.219

Bauman, S., & Hurley, C. (2005). Teachers' attitudes and beliefs about bullying -- Two exploratory studies. *Journal of School Violence, 4*, 49 - 61. doi: 10.1300/J202v04n03_05

Bond, C. F., & DePaulo, B. M. (2006). Accuracy of deception judgments. *Personality and Social Psychology Review, 10*, 214-234. doi: 10.1207/s15327957pspr1003_2

Bothwell, R.K., Deffenbacher, K.A., Brigham, J.C. (1987). Correlation of eyewitness accuracy and confidence: Optimality hypothesis revisited. *Journal of Applied Psychology, 72,* 691-695. doi: 10.1037/0021-9010.72.4.691

Boulton, M.J. (1997). Teachers' views on bullying: Definitions, attitudes and ability to cope. *British Journal of Educational Psychology, 67,* 223-233. doi: 10.1111/j.2044-8279.1997.tb01239

Card, N. A., & Hodges, E. V. E. (2008). Peer victimization among schoolchildren: Correlations, causes, consequences, and considerations in assessment and intervention. *School Psychology Quarterly, 23*, 451-461. doi: 10.1037/a0012769

Crossman, A. M., & Lewis, M. (2006). Adults' ability to detect children's lying. *Behavioral Sciences and Law, 24*, 703-715. doi: 10.1002/bsl.731

DePaulo, B. M., Stone, J. I., & Lassiter, G. D. (1985). Telling ingratiating lies: Effects of target sex and target attractiveness on verbal and nonverbal deceptive success. *Journal of Personality and Social Psychology, 48,* 1191-1203. doi: 10.1037/0022-3514.48.5.1191

Edelstein, R. S., Luten, T. L., Ekman, P., & Goodman, G. S. (2006). Detecting lies in children and adults. *Law and Human Behavior, 30*, 1-10. doi: 10.1007/s10979-006-9031-2

Ekman, P., & O'Sullivan, M. (1991). Who can catch a liar? *American Psychologist, 46*, 913-920.

Fekkes, M., Pijpers, F.I.M., & Verloove-Vanhorick, S.P. (2005). Bullying: Who does what, when and where? Involvement of children, teachers and parents in bullying behavior. *Health Education Research*, *20*, 81 – 91. doi: 10.1093/her/cyg100

Hazler, R. J., Miller, D. L., Carney, J. V., & Green, S. (2001). Adult recognition of school bullying situations. *Educational Research, 43*, 133 - 146. doi:10.1080/00131880110051137

Leach, A. M., Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2004). Intuitive lie detection of children's deception by law enforcement officials and university students. *Law and Human Behavior*, *28,* 661–685. doi: 10.1007/s10979-004-0793-0

Leach, A. M., Lindsay, R. C. L., Koehler, R., Beaudry, J. L., Bala, N. C., Lee, K., Talwar, V. (2009). The reliability of lie detection performance. *Law and Human Behavior, 33,* 96-103. doi: 10.1007/s10979-008-9137-9

Lin, J. (2006). The teaching profession: Trends from 1999 to 2005. *Education Matters: Insights on Education, Learning and Training in Canada, 3*(4). Retrieved from: http://www.statcan.gc.ca/pub/81-004-x/2006004/9540-eng.htm

Marshall, M. L., Varjas, K., Meyers, J., Graybill, E.C., & Skoczylas, R.B. (2009). Teacher responses to bullying: Self-reports from the front line. *Journal of School Violence, 8*, 136 – 158. doi: 10.1080/15388220802074124

Mishna, F., Pepler, D., & Wiener, J. (2006). Factors Associated With Perceptions and Responses to Bullying Situations by Children, Parents, Teachers, and Principals. *Victims & Offenders, 1*, 255 - 288. doi: 10.1080/15564880600626163

Mishna, F., Scarcello, I., Pepler, D., & Wiener, J. (2005).Teachers' Understanding of Bullying. *Canadian Journal of Education / Revue Canadienne de l'éducation, 28*, 718-738.

O'Sullivan, M. (2005). Emotional intelligence and detecting deception. Why most people can't "read" others, but a few can. In Riggio, R. and Feldman, R. (Eds.), *Applications of Nonverbal Communication* (pp. 215–253). Mahway, NJ: Erlbaum.

Olweus, D. (2001). Peer harassment: A critical analysis and some important issues. In J. Juvonen & S. Graham (Eds.), Peer harassment in school: The plight of the vulnerable and victimized (pp. 3–20). New York: Guilford Press.

Rodkin, P. C. (2004). Peer ecologies of aggression and bullying. In D. L. Espelage & S. M. Swearer (Eds.),

Bullying in American schools: A social-ecological perspective on prevention and intervention (pp. 87-106). Mahwah, NJ: Erlbaum.

Service Canada (updated 2011*). Early childhood educators and assistants.* Retrived from: http://www.servicecanada.gc.ca/eng/qc/job_futures/statistics/4214.shtml

Talwar V., Crossman, A., Williams, S., & Muir, S. (2011). Adult detection of children's selfish and polite lies: experience matters. *Journal of Applied Social Psychology 41,* 2837 – 2857. doi: 10.1111/j.1559-1816.2011.00861.x

Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2006). Adult's judgment of children's coached reports. *Law and Human Behavior, 30*, 561-570. doi: 10.1007/s10979-006-90388

Vrij, A. (2000). *Detecting lies and deceit: The psychology of lying and the implications for professional practice*. Chichester: John Wiley.

Vrij, A., & Mann, S. (2005). Police use of nonverbal behavior as indicators of deception. In R. E. Riggio, & R. S. Feldman (Eds.), *Applications of nonverbal communication* (pp. 63-94). Mahwah, NJ: Lawrence Erlbaum Associates.

Westcott, H., Davies, G., Graham, M., & Clifford, B. (1991). Adults' perceptions of children's videotaped truthful and deceptive statements. *Children and Society*, *5*, 123-135. doi: 10.1111/j.1099-0860.1991.tb00378.