

HOW TO DETECT DECEPTION? ARRESTING THE BELIEFS OF POLICE OFFICERS, PROSECUTORS AND JUDGES

LEIF A. STRÖMWALL and PÅR ANDERS GRANHAG

Department of Psychology, Göteborg University, Sweden

In this paper we examined beliefs about deception held by legal professionals. Three groups of presumed expert lie-catchers were investigated: police officers ($n = 104$), prosecutors ($n = 158$), and judges ($n = 251$). The experts' beliefs about deception were remarkably inconsistent with the general pattern resulting from studies mapping actual cues to deception. For example, a majority of police officers believed there is a strong relationship between (a) deceptive behaviour and gaze aversion and (b) deceptive behaviour and an increase in body movements. The scientific literature does not support this view. Furthermore, all three professional groups believed that truthful consecutive statements are more consistent than deceptive, and that it is easier to detect deception in interactive than non-interactive contexts. Research on deception shows the opposite. For five of the seven investigated items we found significant between-group differences. Both the genesis and the implications of these differences are discussed. Judging from self-ratings, the presumed experts admitted knowing close to nothing about scientific research on deception.

Keywords: Beliefs about deception; Experts' opinions; Deception detection

Many situations in public and private life call for an accurate assessment of the veracity of others. The consequences of misjudgement are perhaps never more severe and far-reaching than in the legal field. For example, incorrect witness statements are the single most contributing reason for people being found guilty of crimes they have not committed (Wells, 1993). Hence, that for example police officers and judges should be able to judge credibility accurately is imperative.

In deception detection research, a distinction is usually made between actual and believed cues to deception (Zuckerman *et al.*, 1981). Actual cues are indicators that in research have been found to be associated with deception. Believed cues are what people generally think is indicative of deception.

Meta-analyses and reviews regarding actual indicators of deception have revealed some nonverbal cues that distinguish liars' from truth-tellers' behaviour. For example, the general pattern resulting from a large number of studies shows that liars tend to speak with a higher-pitched voice and make fewer leg/foot and hand/arm movements (for a recent overview see Vrij, 2000). Although the majority of these studies are experimental, it is important to note that, for example, the finding that body movements are decreased during deception have been

Correspondence to: Leif Strömwall, Department of Psychology, Göteborg University, Box 500 SE 405 30 Göteborg, Sweden. E-mail: leif.stromwall@psy.gu.se, Phone: +46 31 773 1665, Fax +46 31 773 4628.

echoed by studies examining real-life interrogations (Mann *et al.*, 2000; Vrij and Mann, 2001). Despite these empirical findings, suggesting it is possible to discriminate between liars and truth-tellers, the deception detection accuracy has not been found to be remarkable. Most studies report a hit rate (the percentage of correct veracity judgments) of just over the level of chance (Vrij, 2000). Obviously, people have not used the actual indicators of deception, and the question is: why not?

The answer can be found in studies of believed indicators of deception. What emerges from such studies is a stereotypical set of beliefs, not in accordance with the actual indicators. For example, people believe that eye contact will decrease during deception, when in fact it is more likely that eye contact will increase or remain unchanged (Vrij, 1995). Generally, people associate nervous behaviours with deception, but most of the typical nervous behaviours are rarely shown by liars. This mismatch between believed and actual cues to deception leads to poor accuracy levels.

Most deception studies have used students as judges of veracity. Students have been found to hold stereotypical beliefs, resulting in a mediocre deception detection performance. This study set out to investigate if professional lie-catchers hold the same stereotypical beliefs.

RESEARCH ON EXPERTS' BELIEFS

Research on experts' beliefs regarding deceptive behaviour has previously been conducted in, for example, The United Kingdom (Akehurst *et al.*, 1996, examining beliefs regarding both nonverbal and verbal cues to deception) and The Netherlands (Vrij and Semin, 1996, examining only nonverbal behaviour). Previous surveys of experts' beliefs have contrasted police officers and students (Akehurst *et al.*, 1996) and students, prisoners and 'professional lie detectors', comprising police officers, customs officers, prison guards, and patrol police officers (Vrij and Semin, 1996). The findings are highly similar for experts and lay people (college students). Furthermore, the converging evidence is that experts consider nervous behaviours to be indicative of deception (Vrij, 2000). The indicator experts and lay people alike rely most upon is a decrease in eye contact, which is not a reliable predictor (Vrij, 2000).

THE PRESENT STUDY

The present study is a survey of presumed expert groups' beliefs about deception. To our knowledge, no studies of the beliefs held by prosecutors and judges have been conducted. We expand on the previous research by investigating these groups, in addition to police officers. Furthermore, we not only compared these expert groups' beliefs with each other, but also added a within-group analysis.

Based on previous research, including both laboratory-based studies and studies with higher ecological validity, (see *e.g.*, Vrij and Mann, 2001) we identified seven important items regarding various aspects of deception. Two verbal indicators: number of details and consistency, and three nonverbal behaviours: gaze aversion, pitch of voice, and body movements. Furthermore, we asked whether it is easier to detect deception when conducting an interrogation or when watching the same interrogation on videotape. The rationale for including this item is that previous research, somewhat counter-intuitively, has found that deception detection performance is poorer in interactive contexts than in non-interactive contexts (Ambady and Rosenthal, 1992, Granhag and Strömwall, 2001). In addition, we asked which of verbal and nonverbal cues are more reliable. This item was included in order to further map the

extent to which the day-to-day working situation, characterizing each of the three professional groups, are mirrored in terms of differences in beliefs about deception.

We predicted that we would find the same stereotypical beliefs for police officers, prosecutors and judges as have previously been reported for both lay people and other expert groups (e.g., Vrij, 2000). Hence, we expected to find beliefs that liars are more prone to (a) be gaze averse; (b) increase their body movements; (c) speak with a higher pitch of voice, and (d) include fewer details in their statements.

The groups examined meet with suspects at different stages in the legal process, in different contexts, and with different objectives. Speculatively, the police officers, which usually interact with the suspects face-to-face, could be more attuned to focusing on nonverbal behaviours, compared to prosecutors and judges. Partial support for this idea can be found in a study by Vrij *et al.*, (in press), who found that police officers focused more on nonverbal than verbal cues when attempting to detect deceit.

Previous research has shown that lie-catchers assessing veracity on the basis of repeated interrogations put considerable trust in the 'consistency heuristic'. That is, the assumption that inconsistency implies deception and consistency implies truth (see for example Granhag and Strömwall, in press a; Greuel, 1992). We believe all groups subscribe to this particular heuristic. To our knowledge, the interrogators *vs.* observers item has not been investigated in previous surveys. Given the scarcity of research on within-group differences, we refrained from making any detailed predictions regarding disagreements within each professional group.

Finally, the data reported here is one part of a large study on experts' beliefs. The results concerning questions about eyewitness testimony will be presented elsewhere (Granhag and Strömwall, 2000c).

METHOD

Participants

Data from the completed questionnaires of 523 participants, 104 police officers (mean age 46.0 yr, 38 women, 64 men), 158 prosecutors (mean age 47.2 yr, 61 women, 97 men), and 261 judges (mean age 50.5 yr, 59 women, 190 men)¹, were analyzed in this study.

All Police authorities, Offices of the Public Prosecutors, District and City Courts and Courts of Appeal in Sweden were approached. For the police officers, we directed an inquiry to the person responsible for administration and asked him or her to distribute the questionnaire to members of their organization with experience in questions of eyewitness testimony, deception detection, and interrogation. For the prosecutors and judges the inquiry was sent to the person in charge (e.g., the chief prosecutor, the chief judge in district/city court, the president of the court of appeal), and asked him or her to distribute the questionnaire to experienced prosecutors/judges. In all, 708 questionnaires were distributed, and a total of 523 questionnaires were returned, resulting in an overall response rate of 73.9% (police officers: 98.1%, prosecutors: 79.0%, and judges: 64.9%).

¹Some participants chose not to answer the sex and/or age questions. A one-way ANOVA showed a significant overall difference between the groups in terms of age, $F(2,500) = 11.64, p < .001$. The judges were, on average, older than the police officers and the prosecutors. A χ^2 -test showed that the distribution of men/women in the groups were not equal, $\chi^2(2, N = 509) = 12.34, p < .01$. The police officers and the prosecutors had a higher share of women than the judge group.

The questionnaire

We identified seven items to be included in the survey, namely (1) details, (2) gaze behaviour, (3) consistency of consecutive statements, (4) body movements, (5) pitch, (6) whether interrogators or observers are more accurate, and (7) whether verbal or nonverbal cues are more reliable. For each item, the participants had to indicate their opinion on forced-choice answer scales. For items 1–5, the response alternatives were framed in terms of less/more or lower/higher, such as the following (using body movements as an example):

- A. Liars make *fewer* body movements than truth-tellers
- B. Liars and truth-tellers *do not differ* in terms of body movements
- C. Liars make *more* body movements than truth-tellers
- D. Don't know

For item (6), which concerns the accuracy of interactive interrogators, compared to non-interactive observers (watching a video recording of the same interrogation), the following alternatives were presented:

- A. It is easier to detect deception when interrogating the suspect face-to-face
- B. It is equally difficult to detect deception when interrogating as when observing on videotape
- C. It is easier to detect deception when observing the same interrogation on videotape
- D. Don't know

For item (7), the reliability of verbal and nonverbal cues, the following alternatives were presented:

- A. It is more reliable to focus on nonverbal cues
- B. Nonverbal cues are about as reliable as verbal cues
- C. It is more reliable to focus on verbal cues
- D. Don't know

The participants also made a rating of how up-to-date they were on the scientific literature in the deception detection area on a scale from 1 (not at all) to 7 (very much so). Finally, they filled out some questions regarding their background characteristics (gender, age, yr of professional experience). All questionnaires were completed anonymously.

RESULTS

In this section, we present analyses of differences between and within the groups of participants. First, however, an examination of the frequencies of 'don't know' answers is presented.

Distribution of 'don't know' answers

In order to investigate differences between the three groups in using the 'don't know' alternative, chi-square tests were conducted after recoding the data so that 1 = taking a stand (alternative A, B, or C) and 2 = 'don't know' (alternative D). Six of the seven chi-squares were significant; Details [$\chi^2(2, N=520)=25.17, p < .001$], Gaze behaviour [$\chi^2(2, N=521)=12.03, p < .01$], Consistency [$\chi^2(2, N=519)=14.52, p < .001$], Body movements [$\chi^2(2, N=523)=22.55, p < .001$], Pitch [$\chi^2(2, N=520)=6.64, p < .05$], and Verbal/nonverbal [$\chi^2(2, N=518)=20.08, p < .001$], all indicating differences between the groups in using

the 'don't know' answer alternative. For each of these significant results, the judges chose the 'don't know' alternative more often than the other two groups. Almost one quarter (23.8%) of all chosen alternatives by the judges were 'don't know.' The corresponding percentage for the police officers was 9.8% and for the prosecutors 15.5%.

Between-group comparisons

To be able to compare differences between the groups, the three first answer alternatives were recoded into -1, 0 and 1 (the 'don't know' alternative was left out of this analysis). The second column of Table I gives a more detailed description for each item. Table I contains directional scores for the three groups on each of the seven items. Table I also shows the results of Kruskal-Wallis analyses of variance and Mann-Whitney post hoc tests comparing the three groups.

Details

All three groups indicated that deceptive statements contain fewer details than truthful statements. This belief was most apparent in the prosecutor group, which differed significantly from the judges and the police officers. These two groups, in turn, differed significantly, with the judges trusting this belief to higher extent than the police officers.

Gaze behaviour

The majority of the police officers expressed the belief that liars are more gaze averse than truth-tellers. This belief was significantly less pronounced for the prosecutors and judges, who were both split between 'liars are more gaze averse' and 'no difference.' Very few respondents, in all groups, indicated 'liars are less gaze averse.'

Consistency

For this item, all three groups showed a belief in deceptive statements being less consistent over time than truthful statements. No significant between-group differences were revealed.

TABLE I Differences in beliefs about the items for the expert groups

Item	Minus sign indicates	Police officers	Prosecutors	Judges	χ^2 -value ^a
Details	Less when lying	-.31 _a	-.78 _b	-.57 _c	22.13***
Gaze	Less when lying	-.63 _a	-.43 _b	-.36 _b	16.62***
Consistency	Less when lying	-.74 _a	-.53 _a	-.58 _a	4.16
Body movements	Less when lying	.65 _a	.28 _b	.28 _b	26.36***
Pitch of voice	Lower when lying	-.05 _a	-.09 _a	-.06 _a	0.19
Interrogator/observer	Easier detect deception when interrogating	-.58 _a	-.65 _a	-.84 _b	13.89**
Verbal/nonverbal	Nonverbal cues more reliable	-.13 _a	.07 _a	.31 _b	25.38***

Notes: Means with different subscripts differ significantly by the Mann-Whitney test with a family wise error rate controlled by the Dunn-Sidak procedure, $p \leq .017$.

^a Chi-squares values resulting from Kruskal-Wallis analysis of variance ($df's = 2$).

** $p < .01$, *** $p < .001$.

Body movements

On a group level the police officers subscribed to the belief that there is an increase in body movements during deception. This belief was held to a significantly lower degree by prosecutors and judges. The 'more body movements when lying' alternative was more frequently chosen than 'less body movements when lying' for both the prosecutors and judges. However, the most frequently chosen alternative for these two groups was 'no difference.'

Pitch of voice

None of the three groups showed a clear preference for any of the alternatives, and the most frequently chosen of the three alternatives included in this analysis was the 'no difference' alternative. No between-group differences were revealed.

Interrogator/observer

All three groups expressed a strong belief in that is easier to detect deception when interrogating a suspect face-to-face, than when watching the same interrogation on videotape. Furthermore, the judges expressed this belief significantly more strongly than the other groups.

Verbal/nonverbal

The judges indicated a belief in verbal content being a more reliable indicator than nonverbal behaviour when discerning truth from deception. The post hoc tests showed that the judges were significantly more convinced of this than the prosecutors. This was the only item in which a between-group difference in mean direction was found (see Table I). That is, on a group level the police officers expressed a weak belief in that nonverbal behaviour is a more reliable indicator than verbal content (negative value), whereas both prosecutors (weakly) and judges expressed a belief in that verbal content is a more reliable indicator than nonverbal behaviour (positive values). Furthermore, both the police officers and prosecutors chose the 'no difference' alternative most frequently.

To summarize the significant results of the between-group analyses: three differences were revealed between police officers and prosecutors; five differences were found between police officers and judges and three differences were revealed between prosecutors and judges. Hence, the overall differences discovered cannot be attributed to any particular group.

Figures 1 to 7 present the percentages for the four answer alternatives for each item and by each group. Here, the 'don't know' alternative is included.

Within-group analyses

In order to examine the extent to which there were within-group agreements on each item, we decided on a cut-off point of 75%. That is, at least three quarters of the group members had to choose the same alternative (of the A, B and C alternatives, *i.e.*, the alternatives that meant taking a stand) for us to claim that group to be in consensus on that item². Table II presents,

²If we check for within-group agreements with the 'don't know' alternative included, which would be an even more conservative test, for only three of the in total 21 items do we find an agreement in opinion. In order: the prosecutors on the Details item (81.9% chose the 'less details when lying' alternative), the police officers on the Consistency item (78.8% chose the 'less consistent when lying' alternative), and the judges for the Interrogator/observer item (78.5% chose the 'it's easier to detect deception when conducting the interrogation' alternative).

TABLE II Within-group percentage shares for the most often expressed belief for each item

<i>Item</i>	<i>Police officers</i>	<i>Prosecutors</i>	<i>Judges</i>
Details	61.4	<i>86.4</i>	73.4
Gaze	69.1	48.8	54.6
Consistency	<i>82.0</i>	71.9	74.0
Body movements	69.2	43.9	59.9
Pitch of voice	39.7	52.7	60.6
Interrogator/observer	<i>76.8</i>	74.8	<i>88.4</i>
Verbal/nonverbal	51.0	41.3	44.5

Notes: Figures in italic indicate that the group is in consensus. The percentages are based upon the three alternatives that showed the respondents taking a standpoint on the item, i.e., the 'don't know' alternative is excluded.

for each item, the percentage of the group members that chose the most common alternative. See also Figures 1–7 for the distribution of answer alternatives within each group.

Details

The prosecutors were in agreement about this item; 86.4% indicated a belief in 'fewer details in deceptive statements.' The judges fell just short of the cut-off point (73.4%) when expressing the same belief as the prosecutors.

Consistency

The police officer believed, to an large extent (82.0%) that 'consecutive statements from liars are less consistent than consecutive statements from truth-tellers.' Both the prosecutors

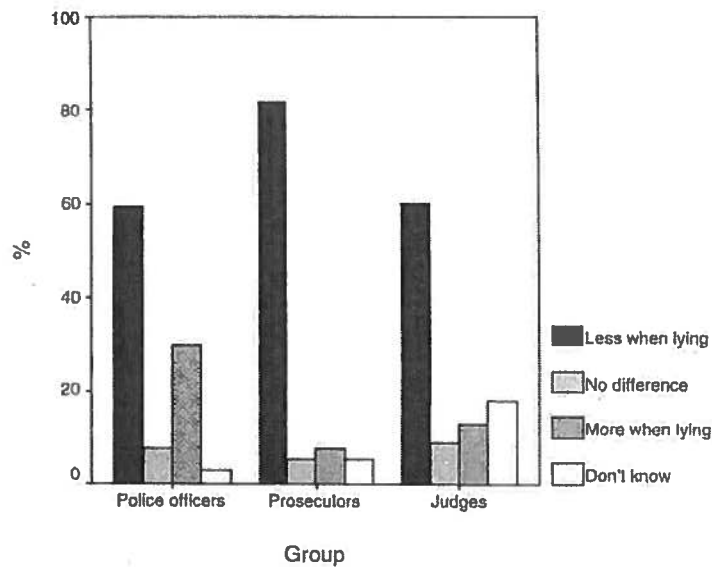


FIGURE 1 Details. Percentages for each answer alternative by group.

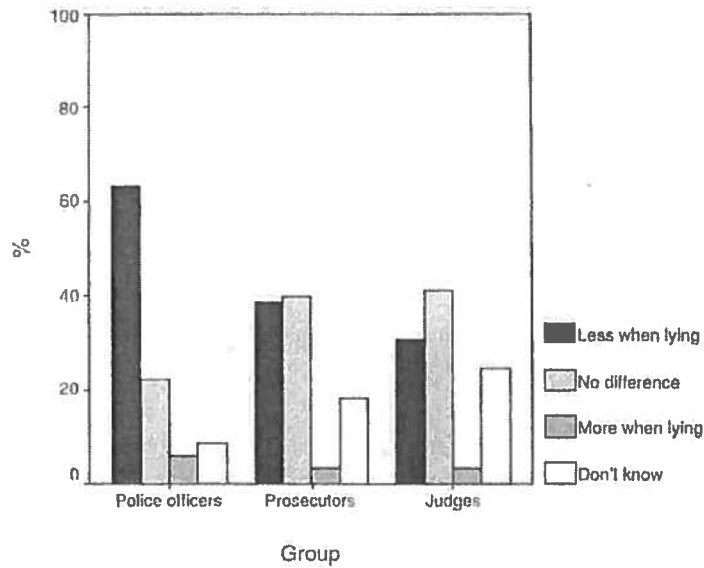


FIGURE 2 Gaze. Percentages for each answer alternative by group.

(71.9%) and the judges (74.0%) also showed this belief, although not quite reaching the three quarter point.

Interrogator/observer

The police officers (76.8%) and the judges (88.4%) showed high within-group agreement; the most common alternative was 'it is easier to detect deception when conducting the inter-

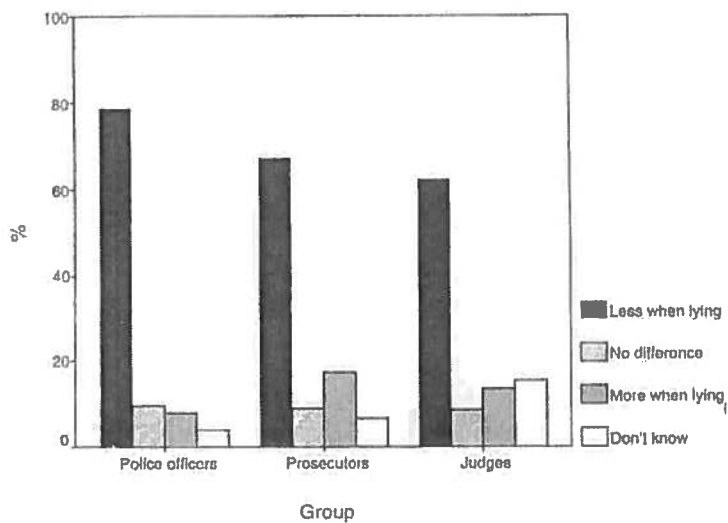


FIGURE 3 Consistency. Percentages for each answer alternative by group.

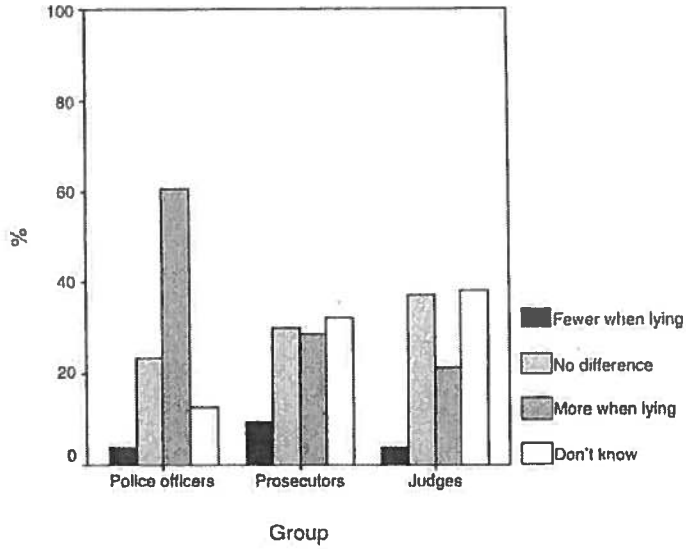


FIGURE 4 Body movements. Percentages for each answer alternative by group.

rogation' (as compared with watching the same interrogation on videotape). The prosecutors expressed the same belief, and almost reached the three quarter point (74.8%).

Gaze behaviour, Body movements, Pitch of voice and Verbal/nonverbal

For none of these items, for any of the groups, did the most common answer alternative reach as high a percentage share as the specified value of 75%.

In sum, our analysis revealed a large number of within-groups disagreements.

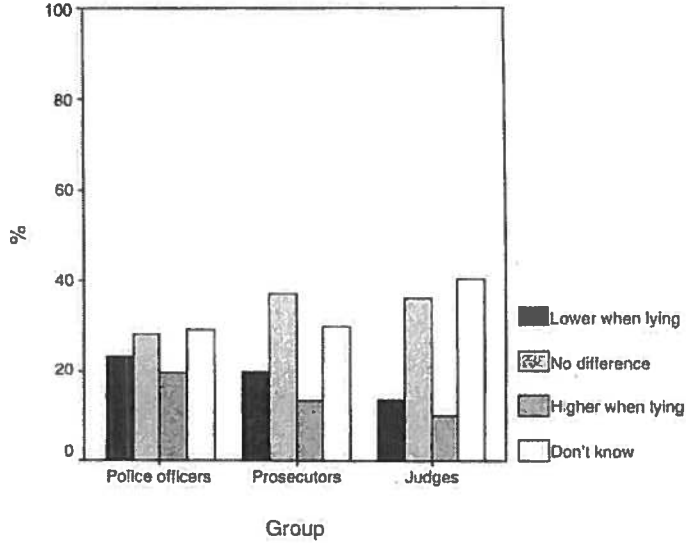


FIGURE 5 Pitch of voice. Percentages for each answer alternative by group.

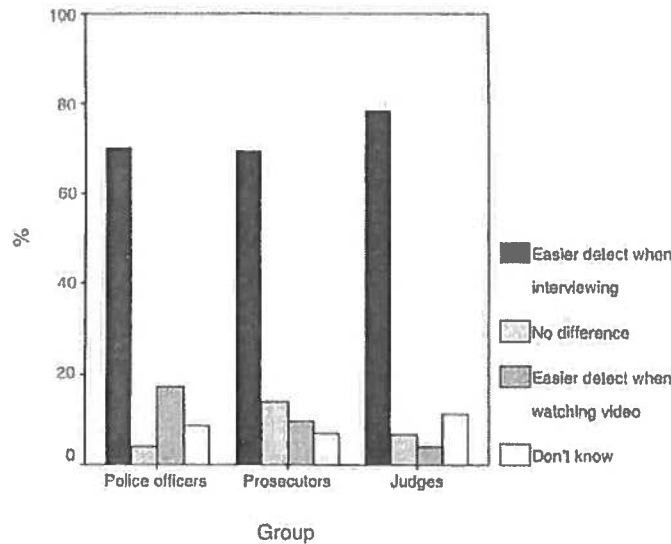


FIGURE 6 Interrogator/observer. Percentages for each answer alternative by group.

Effects of sex, age and experience

In order to find out if any of the between- and within-group differences was influenced by variables such as sex, age, and experience, we computed Mann-Whitney tests³ (measuring if, for example, older and younger respondents differed in their choice of alternative). These tests were conducted for each item, for the three groups separately and for the total sample.

Sex

Three of the pairwise tests revealed significant differences. Male prosecutors ($M = -.79$) indicated a stronger belief in 'easier to detect deception when interrogating' than female prosecutors ($M = -.41$), $z = 3.00$, $p < .01$. Male judges ($M = -.43$) mentioned the 'liars are more gaze averse' alternative more often than female judges ($M = -.21$), $z = 2.13$, $p < .05$. Finally, for the total sample, men ($M = .18$) chose the 'verbal content is more reliable' alternative more frequently than women ($M = .04$), $z = 2.12$, $p < .05$.

Age

The median value dividing the total sample in two equally sized halves was 49.6 yr of age. The median values for each group were 47.0 yr (police officers), 46.0 yr (prosecutors) and 53.0 yr (judges). Only one significant difference was found for the comparison of age differences: The older prosecutors ($M = -.28$) displayed a belief in 'lower pitch when lying', which differed from the younger prosecutors ($M = .07$), $z = 2.13$, $p < .05$.

³The age and experience variables were recoded by a median split-procedure. The Mann-Whitney U test statistics were converted to z -scores, as the samples were large.

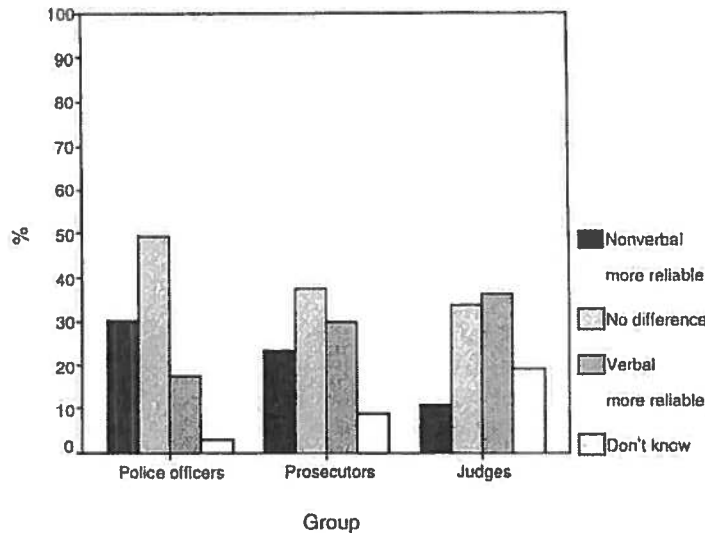


FIGURE 7 Verbal/nonverbal. Percentages for each answer alternative by group.

Experience

The median values dividing the groups in two equally sized halves were 19.0 yr of experience (prosecutors) and 26.0 yr of experience (judges)⁴. The median for the total sample was 22.5 yr of experience. No substantial differences emerged for any of the professional groups, on any of the items.

Up-to-date ratings

The up-to-date ratings were given on a scale ranging from 1 to 7. All three groups rated themselves as not being up to date on the relevant scientific literature; the mean values were on the lower end of the scale. A one-way ANOVA [$F(2,492) = 19.80, p < .001$] with Games-Howell post hoc tests showed that the judges ($M = 1.69, SD = 0.83$), expressed significantly lower ratings than the police officers ($M = 2.29, SD = 1.12$) and the prosecutors ($M = 2.18, SD = 1.03$).

DISCUSSION

In this paper we examined beliefs about deception held by professional lie-catchers. The study expands on the literature by investigating two previously overlooked expert groups; prosecutors and judges. An examination of the beliefs held by these two groups is of high forensic importance. In addition, we examined some previously neglected, but relevant, questions regarding deception detection.

Our aim was to address four different issues. The first issue concerned the beliefs legal experts have regarding detection of deception. The second issue was to investigate the extent

⁴Due to a mistake on our part, data on the police officer's number of years of experience were not available. The analyses presented here are based upon the prosecutors and judges.

to which the beliefs expressed fit with what is known in the research literature. The third issue was to compare the beliefs held by police officers, prosecutors and judges in order to identify differences and similarities. The fourth issue was to perform within-group comparisons to examine the extent to which each group's members agreed with each other.

Experts' beliefs and how these fit with what research tell us

Details

The experts believed truthful statements to contain more details than deceptive statements. This result is in line with findings from previously reported surveys (Akehurst *et al.*, 1996). The review conducted by Vrij (2000) showed that nine out of twelve experimental studies report truthful statements to contain more details than deceptive statements. In spite of this we are somewhat sceptical when it comes to the reliability of the detail-criterion and below we will explain why.

Gaze aversion

In line with previous surveys (Akehurst *et al.*, 1996; Vrij and Semin, 1996) the majority of the police officers subscribed to the belief that liars are more gaze averse than truth-tellers. Again, the prosecutors and the judges expressed a comparatively more diversified view (*i.e.*, for both groups the most frequent answer was the 'no difference' alternative, followed by the 'liars are more gaze averse than truth-tellers' alternative). The research literature shows that no relationship exists between gaze aversion and deception (*e.g.*, DePaulo and DePaulo, 1989; Feeley and deTurck, 1998; Vrij, 1995), some studies even show that liars are less gaze averse than truth-tellers (*e.g.*, Bond *et al.*, 1985; Granhag and Strömwall, in press b; Riggio and Friedman, 1983).

Consistency

As predicted, all groups expressed a very strong belief in the principle stating that deceptive consecutive statements are less consistent than truthful consecutive statements. This result is supported by Akehurst *et al.* (1996), who reported that police officers believe that the number of contradictions increases during deception. It should, however, be noted that there is more to consistency than contradictions, *e.g.*, omissions and commissions. Critically, previous research shows that deceptive statements are at least equally consistent over time as are truthful statements (Granhag and Strömwall, in press b).

Body movements

As hypothesized, and in line with previous research (Vrij, 2000), the majority of the police officers subscribed to the belief that there is an increase in body movements during deception. Both prosecutors and judges differed from the police officers in that they expressed a much more diversified and careful view (*i.e.*, for both groups the two most commonly used answer alternatives was the 'don't know' and the 'no difference' alternatives). Importantly, both experimentally based research (Granhag and Strömwall, in press b; Vrij, 1995), and studies of real-life interrogations (Mann *et al.*, 2000; Vrij and Mann, 2001) shows that liars often move less than truth-tellers.

Pitch of voice

All three groups expressed very diversified beliefs in terms of the relationship between pitch of voice and deceptive behaviour. For all three groups the two most frequent answers were the 'no difference' and the 'don't know' alternatives. A recent overview by Vrij (2000) shows that liars have a higher-pitched voice than truth-tellers, probably due to stress. Previous surveys indicate that experts have a strong tendency to believe that liars have a higher pitched voice than truth-tellers (Akehurst *et al.*, 1996; Taylor and Vrij, 2000). However, this particular belief was the least frequently expressed for all groups.

Interrogators vs. observers

Whether experts believe it is more or less easy to detect deception during a face-to-face interrogation, compared to watching the very same interrogation on video, is an issue that has been neglected in previous surveys. Our study shows that all three groups investigated strongly believe that a person who conducts an interrogation will be more successful at detecting deception than will a person who watches the same interrogation on video. Research, in contrast, shows that those who observe an interrogation on video are more accurate in detecting lies than those who actually conduct the interrogation (Buller *et al.*, 1991; Feeley and deTurck, 1997; Granhag and Strömwall, 2001). One explanation for this is that an interrogator must spend cognitive energy monitoring both himself and the suspect, and, in addition, for different segments of the session make the appropriate conversational extensions (Feeley and deTurck, 1997; Granhag and Strömwall, in press a).

Verbal vs. nonverbal cues

For all groups, a large number of experts believed that verbal and nonverbal cues to deception are about equally reliable. It was also detected that both judges and prosecutors believed verbal cues to deception to be more reliable than nonverbal cues, and this belief was more pronounced for judges than for prosecutors. In contrast, police officers believed nonverbal cues to be more reliable than verbal cues. This finding is in line with the suggestion made by Vrij *et al.* (in press) that police officers tend to focus more on nonverbal cues, than verbal cues, when attempting to detect deceit. Research shows that lie-catchers trusting verbal cues tend to achieve higher accuracy scores than do lie-catchers trusting nonverbal cues (Vrij, 2000). However, comparing these two approaches one should bear in mind that studies investigating the effectiveness of nonverbal cues less often have employed trained, or presumed expert, lie-catchers.

Why the mismatch?

In conclusion, the results show that police officers', prosecutors' and judges' perceptions of how different factors relate to deception are remarkably inconsistent with the results stemming from studies investigating actual cues to deception (Vrij, 2000). Critically, the lack of overlap between the presumed experts' beliefs, on the one hand, and the scientific evidence, on the other hand, is especially pronounced for cues that are commonly reported as mediating assessments of veracity, for example gaze and body movements (Vrij, 2000) and consistency between statements (Greuel, 1992; Granhag and Strömwall, 1999). In this context one must acknowledge the well established psychological finding that people are poor at pinpointing all, or sometimes even the most significant, factors which led them to

form, for example, an impression about a person (see *e.g.* Nisbett and Wilson, 1977; Yzerbyt *et al.*, 1998). Hence, when conducting deception detection research one must be aware that the cues lie-catchers actually utilize when assessing veracity are probably not perfectly mirrored in the self-reported justifications following the assessments made (see also Granhag and Strömwall, 2000a). Reasonably, the same problem hold for the type of information collected in the current study, *i.e.* self-reported beliefs about cues to deception. Therefore, one needs to be careful when interpreting data on self-reported cues to, or beliefs about, deception. Still, we believe that investigating subjective cues and beliefs can generate important information about the perceptual and cognitive processes at play as lie-catchers assess veracity.

In line with what has been suggested by, among others, Akehurst *et al.* (1996), we also believe that the major explanation for the lack of overlap between the presumed experts' beliefs and the scientific evidence pertaining to these beliefs, is to be found in the highly ambiguous feedback the professional groups investigated receive. Reasonably, experience will only pay off if one receives clear and valid feedback regarding whether the veracity judgments made are correct or not (DePaulo and Pfeifer, 1986; Vrij and Semin, 1996). Critically, legal professionals who judge the credibility of others rarely receive such feedback. Our result showing no differences in beliefs about deception comparing more and less experienced professionals supports this explanation. Furthermore, in the survey conducted by Vrij and Semin (1996), it was hypothesized that prisoners, compared to presumed expert lie-catchers, should have the best notion of nonverbal indicators of deception, due to their more adequate feedback history. The authors reports data in support of their hypothesis. A recent study by Granhag *et al.*, (2001) also investigating prisoners' beliefs on deception lends further evidence to this explanation. For further elaborations on the consequences following this 'feedback dilemma' see Allwood and Granhag (1999).

Between-group comparisons

For five out of the seven items investigated between-group differences were detected; the consistency and pitch of voice items were the exceptions. Police officers—in comparison to prosecutors and judges—expressed a much stronger belief that deception is related to gaze aversiveness and an increase in body movements. In order to explain these findings it is necessary to consider that police officers have to deal with the suspicion of deceit under quite different circumstances compared to prosecutors and judges. Below we will focus on two such differences. First, both prosecutors and judges normally handle case-files containing a large amount of information, where pieces of information are related in complicated ways. In contrast, in the initial investigative stage, police officers are often faced with information that cannot, at that time, be related to any other information. Reasonably, when assessing the veracity of such new, and therefore non-confirmed, information one will rely more on non-verbal than verbal cues (Vrij, 2000). Second, police officers conduct interviews on a much more frequent basis than do judges and prosecutors. In addition, they often have to work under a heavy time constraint. Hence, we need to entertain the possibility that police officers, due to their assembly-line-like working situation, are forced to put their trust in simple pointers to deception. To be useful such heuristics must have an intimate link to behaviours that are easy to observe during face-to-face interrogations. Both gaze and general body movements are highly visible cues, and also (perhaps therefore) two of the most commonly used nonverbal cues. Furthermore, the finding that a higher percentage of the police officers, than prosecutors and judges, believed nonverbal cues to be more reliable than verbal, lends further support to this idea. The finding that both prosecutors and judges were significantly less convinced—compared to police officers—regarding the associative strength between (a)

deceptive behaviour and gaze aversion, and (b) deceptive behaviour and body movements, is in line with our predictions.

The only item for which all three groups were significantly separated was Details. The prosecutors were the ones most, and the police officers the ones least, prone to believe that truthful statements contain more details than deceptive statements. In order to explain why prosecutors are the ones who put most trust in the principle 'rich in detail therefore truthful, poor in detail therefore deceptive', three pieces of information must be combined. First, prosecutors normally select their cases very carefully, and when they choose to initiate legal proceedings they often win. Secondly, prosecutors often take part of transcripts based on interrogations held by the police. Thirdly, the detail-criterion is one of the most commonly used verbal criteria. Hence, the fact that prosecutors do not proceed with a case where the statements from the key witness are considered unreliable (*e.g.*, poor in detail), or where the defendant's statements are considered reliable (*e.g.*, rich in detail), might fuel the prosecutors' trust in the detail-criterion.

The absolute majority of all judges believed that it is easier to detect deception during a face-to-face interrogation, compared to watching the same interrogation on video. Both police officers and prosecutors hold the same belief, but with significantly less strength. Why this wrongful belief is more widespread among judges might be explained by a fundamental principle found in the Swedish legal system, the principle of orality. In brief, this principle states that verdicts should only be based upon information that has been verbally presented during the court proceedings. Hence, transcripts and video-recordings stemming from interrogations held during the preliminary investigation are seldom permitted as evidence. It can be speculated that an exaggerated trust in this legal principle might lead to the unwarranted belief that observing a suspect live is more prosperous for detecting deception, than watching video recordings of the same suspect.

The judges chose the 'don't know' answer alternative in almost one quarter of all cases. In comparison, both police officers and prosecutors chose that answer alternative significantly less often. That judges are much more careful in taking a stand with respect to specific items makes sense considering the severe ramifications following a wrongful conviction or acquittal.

Within-group comparisons

Due to the large sample collected we were able to perform meaningful within-group comparisons. To our knowledge, such analyses have not previously been reported. Overall we found a high level of disagreement within each group investigated. The experts showed within-group disagreements to an approximately equally large extent. For four items: gaze aversion, body movements, pitch of voice, and the reliability of verbal vs. nonverbal cues, were disagreements within all three professional groups found.

Psycho-legal implications

In essence, the beliefs expressed by professional lie-catchers fit poorly with what has been established in the scientific literature mapping actual cues to deception. This suggests that deception scholars face the important, but highly difficult, task of debunking the wrongful beliefs held by presumed experts.

In particular we want to warn against those cases where the experts are in a state of false consensus regarding how a particular cue to deception should be used, and, in addition, use this particular cue on a frequent basis. For example, the finding that deceptive consecutive statements are equally, or even more, consistent than truthful consecutive statements,

poses a paramount dilemma for all experts advocating the opposite view. The fact that the consistency heuristic seems to be frequently used both by police officers (Greuel, 1992; Pearse and Gudjonsson, 1996), and judges (Gregow, 1996), renders this problem acute status. In order to explain why deceptive consecutive statements are equally consistent as truthful consecutive statements, a so-called 'repeat vs. reconstruct' hypothesis has been suggested. This hypothesis assumes that liars try to repeat their initial statement, whereas truth-tellers try to reconstruct a previously experienced event (Granhag and Strömwall, 1999; 2000b).

Another example of a frequently used cue is the detail-criterion, which is included in a commonly used credibility assessment instrument, the Criteria-Based Content Analysis (Steller and Köhnken, 1989). A recent overview of experimental research on CBCA shows that truthful statements were found to be richer in detail than deceptive statements (Vrij, 2000). The beliefs expressed by the experts in the current study were fully in line with this finding. Nevertheless, we are not convinced about the reliability of the detail-criterion. Our scepticism is mainly due to two findings. First, to our knowledge, in the studies reviewed corrections had not been made for the total number of words in the statements. Importantly, deceptive statements have been reported to contain fewer words than truthful statements (e.g., Granhag and Strömwall, in press b; Granhag *et al.*, 2000; Vrij, 2000). Hence, it is reasonable to assume a confounding between the number of words spoken and the absolute number of details. As one can expect, the correlation between the number of details and the number of words in the statement is close to perfect (Granhag *et al.*, 2000). Secondly, Granhag and Strömwall (2000a) showed that there exist large disagreements regarding whether a certain statement should be considered rich or poor in detail. In short, one person can judge a statement to be rich in detail, whereas another person can judge the very same statement to be poor in detail. Until more research has been carried out, we believe that the detail-criterion should be exercised with caution.

There is ample evidence that incorrect assessments of a witness' credibility (Wells *et al.*, 2000), and/or a suspect's truthfulness (Wagenaar *et al.*, 1993), can lead to miscarriages of justice. The between-group differences evidenced in the current study indicate that at least some *nonverbal* cues, like gaze and body movements, are trusted to a relatively higher extent in the initial investigative stage handled by the police. This, whereas *verbal* cues, like richness in detail, is relatively more trusted in the subsequent stages, handled by prosecutors and judges. Consequently, our data suggests that miscarriages of justice may be initialized by suspect-driven investigations due to misinterpretations of, among other things, overtly expressed nonverbal behaviours, and be finalized by wrongful convictions due to misinterpretations of, among other things, verbal behaviours. Also, the between-group differences found proves the necessity of studying expert groups other than police officers.

The considerable within-group disagreements found put light on the highly subjective component at work in the evaluative phase of the legal process. Moreover, the professionals participating in the current study stated that they knew close to nothing about what research has to tell about deception. Hence, presumed lie-experts at least seem to know that they don't know. Unfortunately, this is of no comfort for those who have to enter the judicial arena.

Acknowledgements

This research was supported by a grant from Torsten och Ragnar Söderberg Foundation given to the second author. We wish to thank two anonymous reviewers for valuable comments on an earlier version of the manuscript.

References

- Akehurst, L., Köhnken, G., Vrij, A. and Bull, R. (1996). Lay persons' and police officers' beliefs regarding deceptive behaviour. *Applied Cognitive Psychology*, 10, 461-471.
- Allwood, C.M. and Granhag, P.A. (1999). Feelings of confidence and the realism of confidence judgments in everyday life. In: P. Juslin and H. Montgomery (Eds.) *Judgment and Decision Making: Neo-Brunswikian and Process-Tracing Approaches* (pp. 123-146). Mahwah, N.J.: Lawrence Erlbaum.
- Ambady, N. and Rosenthal, R. (1992). Thin slices of expressive behavior as predictors of interpersonal consequences: A meta-analysis. *Psychological Bulletin*, 111, 256-274.
- Bond, C.F., Kahler, K.N. and Paolicelli, L.M. (1985). The miscommunication of deception: an adaptive perspective. *Journal of Experimental Social Psychology*, 21, 331-345.
- Buller, D.B., Sirzyewski, K.D. and Hunsaker, J. (1991). Interpersonal deception: II. The inferiority of conversational participants as deception detectors. *Communication Monographs*, 58, 25-40.
- DePaulo, P.J. and DePaulo, B.M. (1989). Can deception by salesperson and customers be detected through nonverbal cues? *Journal of Applied Social Psychology*, 19, 1552-1577.
- DePaulo, B.M. and Pfeifer, R.L. (1986). On-the-job experience and skill at detecting deception. *Journal of Applied Social Psychology*, 16, 249-267.
- Feeley, T.H. and deTurck, M.A. (1997). *Perceptions of communication as seen by the actor and as seen by the observer: The case of lie detection*. Paper presented at the International Communication Association annual Conference, Montreal, Canada.
- Feeley, T.H. and deTurck, M.A. (1998). The behavioral correlates of sanctioned and unsanctioned deceptive communication. *Journal of Nonverbal Behavior*, 22, 189-204.
- Granhag, P.A., Andersson, L.O., Strömwall, L.A. and Hartwig, M. (2001). *Inmates' beliefs on deception: Unlocking the wisdom kept behind bars*. Paper presented at the 11th European Conference on Psychology and Law (Lisbon, Portugal).
- Granhag, P.A. and Strömwall, L.A. (1999). Repeated interrogations: Stretching the deception detection paradigm. *Expert Evidence. The International Journal of Behavioural Sciences in Legal Contexts*, 7, 163-174.
- Granhag, P.A. and Strömwall, L.A. (2000a). Effects of preconceptions on deception detection and new answers to why lie-catchers often fail. *Psychology: Crime and Law*, 6, 197-218.
- Granhag, P.A. and Strömwall, L.A. (2000b). Deception detection: Examining the consistency heuristic. In: C.M. Breur, M.M. Kommer, J.F. Nijboer and J.M. Reintjes, (Eds.). *New Trends in Criminal Investigation and Evidence, II*. (pp. 309-321). Antwerpen: Intersentia.
- Granhag, P.A. and Strömwall, L.A. (2000c). *Police officers, prosecutors and judges: An inventory of beliefs about eyewitness testimony*. Manuscript under preparation. Department of Psychology, Göteborg University, Sweden.
- Granhag, P.A. and Strömwall, L.A. (2001). Deception detection based on repeated interrogations. *Legal and Criminological Psychology*, 6, 85-101.
- Granhag, P.A. and Strömwall, L.A. (in press a). Deception detection: Interrogators' and observers' decoding of consecutive statements. *Journal of Psychology: Interdisciplinary and Applied*.
- Granhag, P.A. and Strömwall, L.A. (in press b). Repeated interrogations: Verbal and nonverbal cues to deception. *Applied Cognitive Psychology*.
- Granhag, P.A., Strömwall, L.A. and Jonsson, A.-C. (2000). *Partners in crime: How liars in collusion betray themselves*. Manuscript submitted for publication.
- Greuel, L. (1992). Police officers' beliefs about cues associated with deception in rape cases. In: F. Lösel, D. Bender and T. Bliessner (Eds.), *Psychology and Law-International Perspectives* (pp. 234-239). Berlin: Walter de Gruyter.
- Gregow, T. (1996). Några synpunkter på frågan om bevisprövning och bevisvärdering i mål om sexuella övergrepp mot barn. *Svensk Juristtidning*, 7, 509-523.
- Mann, S., Vrij, A. and Bull, R. (2000). Telling and detecting true lies. In: A. Czerederecka, T. Jaskiewicz-Obydzinska and J. Wójcikiewicz (Eds.), *Forensic Psychology and Law: Traditional Questions and New Ideas* (pp. 221-225). Cracow, Poland: Institute of Forensic Research Publishers.
- Nisbett, R.E. and Wilson, T.D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231-259.
- Pearse, J. and Gudjonsson, G. (1996). Police interviewing techniques of two south London police stations. *Psychology: Crime and Law*, 3, 63-74.
- Riggio, R.E. and Friedman, H.S. (1983). Individual differences and cues to deception. *Journal of Personality and Social Psychology*, 45, 899-915.
- Steller, M. and Köhnken, G. (1989). Criteria-Based Statement Analysis. In: D.C. Raskin (Ed.) *Psychological Methods in Criminal Investigation and Evidence* (pp. 217-245). New York: Springer.
- Taylor, R. and Vrij, A. (2000). The effects of varying stake and cognitive complexity on beliefs about the cues to deception. *International Journal of Police Science and Management*, 3, 111-123.
- Vrij, A. (1995). Behavioral correlates of deception in a simulated police interview. *Journal of Psychology: Interdisciplinary and Applied*, 129, 15-29.
- Vrij, A. (2000). *Detecting Lies and Deceit*. Chichester: John Wiley.
- Vrij, A. and Mann, S. (2001). Telling and detecting lies in a high-stake situation: the case of a convicted murderer. *Applied Cognitive Psychology*, 15, 187-203.

- Vrij, A. and Semin, GR. (1996). Lie expert's beliefs about nonverbal indicators of deception. *Journal of Nonverbal Behavior*, 20, 65-80.
- Vrij, A., Edward, K. and Bull, R. (in press). Police officers' ability to detect deceit: The benefit of indirect deception detection measures. *Legal and Criminological Psychology*.
- Wagenaar, W.A., van Koppen, P.J. and Crombag, H.F.M. (1993). *Anchored narratives. The psychology of criminal evidence*. New York: St. Martin's Press.
- Wells, G.L. (1993). What do we know about eyewitness identification? *American Psychologist*, 48, 553-571.
- Wells, G.L., Malpass, R.S., Lindsay, R.C.L., Fisher, R.P., Turtle, J.W. and Fulero, S.M. (2000). From the lab to the police station: A successful application of eyewitness research. *American Psychologist*, 55, 581-598.
- Yzerbyt, V.Y., Dardenne, B. and Leyens, J.P. (1998). Social judgeability concerns in impression formation. In: V.Y. Yzerbyt, G. Lories and B. Dardenne (Eds.), *Metacognition-Cognitive and Social dimensions* (pp. 126-156). London: Sage Publications.
- Zuckerman, M., DePaulo, B.M. and Rosenthal, R. (1981). Verbal and nonverbal communication of deception. *Advances in Experimental Social Psychology*, 14, 1-59.

Copyright © 2003 EBSCO Publishing