

## IS THE LIAR CAUGHT SOONER THAN THE CRIPPLE? POPULAR WISDOM VERSUS SCIENTIFIC KNOWLEDGE ON THE NON-VERBAL DETECTION OF DECEPTION

Jaume Masip

*University of Salamanca*

*There are a series of popular beliefs about the behavioural indicators of deception that are not supported by empirical research. A number of "self-help" books are contributing to the spreading of these beliefs. In this article, several decades of psychological and communication research on the non-verbal detection of deception are reviewed. Contrary to the claims of "self-help" books and to the tenets of popular wisdom, detecting deception from behavioural cues is extremely difficult, there are almost no behavioural cues to differentiate between truths and lies, their meaning and usefulness depend on a number of contextual variables, and training programmes have yielded only very limited improvements in accuracy. In view of the misleading content of certain popular books and the serious consequences of wrong credibility judgments in a number of contexts, it is necessary to dispel the existing myths about the non-verbal detection of deception, providing instead valid and scientifically tested information.*

*Existe una serie de creencias populares sobre los indicadores conductuales del engaño que no se ven corroboradas por la evidencia empírica. Determinados libros "de autoayuda" contribuyen a la difusión de las mismas. En este trabajo se revisan varias décadas de investigación en psicología y comunicación sobre la detección no-verbal del engaño. Al contrario de lo que propugnan los libros "de autoayuda" y de lo que sostiene la sabiduría popular, detectar la mentira a partir del comportamiento no-verbal es extremadamente difícil, apenas sí existen claves conductuales que permitan discriminar entre verdades y mentiras, su significado y poder de discriminación varían en función de diversas variables contextuales, y la eficacia de los programas de entrenamiento es muy limitada. Frente a las cuestionables afirmaciones de determinados libros populares y dadas las graves consecuencias que en ciertos ámbitos pueden tener los juicios de credibilidad erróneos, es necesario desmontar los falsos mitos existentes sobre la detección no-verbal de la mentira, sustituyéndolos por información más válida y científicamente contrastada.*

**S**ocial psychology has examined on numerous occasions the relationship between psychological knowledge and common sense (e.g., Garrido, Herrero & Masip, 2004; Teigen, 1986; see the discussion by Kelley, 1992). As many authors have pointed out (e.g., Myers, 1999/2000), social psychology is criticized for studying things that everyone already knows –that are "common sense" (Kelley, 1992; Schlesinger, 1949). Such criticism, however, is almost always made after the critic has been given the correct answer ("I already knew that!"); in general people do not find it so easy to come up with such an "obvious" response themselves (Kelley, 1992; Lazarsfeld, 1949).

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*Correspondence: Jaume Masip. Departamento de Psicología Social y Antropología. Universidad de Salamanca. Facultad de Psicología. Avda. de la Merced, 109-131. 37005 Salamanca. Spain. E-mail: jmasip@usal.es*

There are two areas in which I have maintained a professional interest for some years where the distance between common sense and scientific evidence is particularly notable. These are the areas of non-verbal communication and the detection of deception. Due in all probability to their intrinsic attraction, both topics stimulate the popular imagination, giving rise to the most outlandish "theories" and views, which all too often soon become widely accepted among the general public. The dissemination of such ideas is usually helped by the contribution of an endless chain of opportunist books, misleadingly called "self-help" manuals, or similar, and often written by people with suspicious qualifications who take advantage of the ingenuity of the reader, probably with financial motives, and therefore in an entirely unethical manner. I should stress that I am not dismissing *all* self-help books. Undoubtedly, some are the work of reputable researchers and written with the utmost scientific



rigour. But a large part of these types of book are based on the naive and untested beliefs of their authors, rather than on scientific knowledge about the subject. This does little to help the dissemination of authentic science, nor does it contribute to the self-help that interested readers are seeking (which is why the term “self-help” is in inverted commas here). The curious thing is that while readers’ lack of familiarity with the field is what leads them to turn to such books, it is precisely such ignorance that prevents them appreciating the scarcity of their scientific value, thus making them vulnerable to the misinformation they impart.

In more specific terms, with regard to the field of non-verbal communication (or “body language”, as it is often called in these books) it turns out that, as in many other areas of psychology, everyone “knows” about the topic, and has an opinion on it, daring to deny, relativize or qualify what the true experts say. It is as though popular stereotypes had more value than scientific knowledge obtained through rigorous and well-established procedures. It is not uncommon to come across advertisements making remarkable claims about courses on “successful communication”, or with sensationalist titles such as “body language for salesmen” or the like, offered by consultants or other organizations from outside our field of specialization, and delivered by people whose lack of qualifications in psychology or interpersonal communication makes them wholly unsuitable for such a task. It would be absurd for a psychologist to consider giving a course on law, economics or engineering. Nevertheless, certain lawyers, economists, engineers and others from outside the psychology profession do not hesitate to consider themselves qualified to plunge unhesitatingly into the field of psychology, communication and related social sciences to impart specialized “knowledge”. In my opinion, this is nothing short of professional encroachment.

Such a state of affairs is unlikely to lead to anything but the spread of false beliefs about the meaning of behaviour, and to a distorted image of non-verbal behaviour as “child’s play” to interpret, with gestures of unmistakable meaning and totally independent of context. Thus, for example, many people believe that crossing the legs or arms clearly signifies that the person is not psychologically “open” to the other, that jutting out the chin is a sign of dominance, and so on. It is difficult not to smile at the ingenuousness of such beliefs, which reflect a series of often erroneous implicit theories rather than authentic scientific knowledge on the topic.

A good example of the dissemination of this type of belief is the well known *Body Language*, by Allan Pease (1981/1988). The author, a commission salesman, first became interested in “body language” after attending a seminar by the anthropologist Ray Birdwhistell in 1971. It is unfortunate that, in his book, Pease does not do justice to Birdwhistell’s unquestionable scientific reputation, despite the deceptive claim in the foreword that “in writing this book, I have summarised many of the studies by the leading behavioural scientists” (Pease, 1988, p. 9).

As if the spread of false beliefs “disguised” as scientific knowledge by the unqualified were not already harmful enough, the matter borders on the scandalous when those spreading such ideas are supposedly professionals. Paolo Abozzi, the self-styled director of the so-called *Centro di Comunicazione Integrata* in Rome, and who claims to have training in communication and hypnosis (see <http://digilander.libero.it/magopaolo/PAOLO%20ABOZZI.html>), is the author of, among other works, *The Interpretation of Gestures* (Abozzi, 1996/1997). This book is of a similar nature to that of Pease, while the *Centro di Comunicazione Integrata*, despite its grand-sounding name, is actually not a research centre at all, but rather an institution that gives courses and produces videos on hypnosis, graphology, neurolinguistic programming and similar subjects (<http://digilander.libero.it/magopaolo/index2.html>). The danger involved in the spread of false knowledge by supposed professionals resides in the well known influence of the credibility of the source on persuasion (Kruglanski et al., 2005). The ingenuous client is likely to consider such information as true since it is provided by an “expert” in the field, believing blindly all the claims and following all the recommendations made. This can lead to erroneous decisions with serious consequences in interpersonal, work or judicial contexts.

The second area to which I referred above is that of the detection of lying or deception. Being just as “intriguing” as the field of non-verbal behaviour, it is threatened by the same dangers. These dangers are represented in this context by, for example, diverse techniques or procedures developed by seasoned police or military officers whose professional experience in situations where lying is frequent lends them a certain degree of popular credibility<sup>1</sup>. But the fact of a professional’s *experience* does not necessarily imply that he or she is an *expert* (see, with specific reference to the field of non-verbal detection



of deception, the works of DePaulo & Pfeiffer, 1986; Garrido, Masip & Herrero, 2004; Meissner & Kassin, 2002; or Strömwall, Granhag & Hartwig, 2004). Consequently, their recommendations may be mistaken. The boom in the use of instruments such as voice stress analyzers (Masip, Garrido & Herrero, 2004) or procedures such as the SCAN Technique (Masip, Garrido & Herrero, 2002a) constitute clear examples of this. Developed by experienced professionals from the field of security, such devices and procedures enjoy considerable popularity in applied contexts, due partly to their creators' profession and partly to the powerful marketing mechanisms at their service. Nevertheless, their true utility for detecting lies has been seriously called into question by empirical research. The risk is, once more, the potentially serious consequences of the use of the erroneous information provided. If the myth that voice stress analyzers or the SCAN Technique are valid and reliable instruments or procedures is well-rooted in society, courts and judges are more likely to admit the evidence obtained with them in trials. But if in reality these techniques cannot discriminate adequately between truth-tellers and liars, we may be unfairly convicting innocent suspects, while the truly guilty go free (see, on this topic, the report by the National Research Council, 2003, in reference to the use of the polygraph).

But if the problem is already a considerable one taking non-verbal behaviour and lie detection separately, it is not surprising that the situation is bleak when it comes to the detection of lies on the basis of non-verbal behaviour. A few years ago I saw an advertisement in a catalogue for a book by one David Lieberman (1998), entitled *Never be lied to again*. I ordered it, albeit with open scepticism given the sensationalist nature of the title and the fact that the author was totally unknown to me (he was clearly not among the relevant researchers in this field). The book, subtitled "how to find out the truth in 5 minutes or less in any conversation or situation", contains absolutely no information of any scientific or practical value, but rather a collection of absurd pieces of advice that are totally misleading for the reader. The most outrageous aspect of the case is the fact that the letters "Ph.D." appear on the cover and spine of the book alongside the author's name. Likewise, the notes on the dust jacket extol the supposed professional virtues of Dr. Lieberman. I

have nothing against the free expression of even the most fanciful eccentricities; but it is quite another matter to try and pass off worthless content as scientific and substantiated information (through the use of "Ph.D." and the data on the jacket). It is purely and simply fraud, and legal action should be taken against fraud of this nature. It is only to be hoped that no professional (police officer, judge, lawyer, etc.) whose decisions about a person's honesty affects their destiny reads this book or takes it seriously.

A dramatic example of the potential practical consequences of the dissemination of unscientific data or procedures concerns the controversial training programme by Inbau, Reid, Buckley and Jane (2001). Imparted by the company of *John E. Reid & Associates*, this training programme was designed for members of the police and security services who had to interrogate suspects. The company boasts of having trained more than 300,000 professionals since its first seminar on interrogations and interviews in 1974 (see <http://www.reid.com>). Part of the Inbau et al. (2001) programme focuses on deception cues. However, the cues it teaches are not the few shown by empirical research to be of possible use (see the interesting study by Blair & Kooi, 2004); also, paying attention to such cues reduces the accuracy of police in judging the credibility of true statements (Mann, Vrij & Bull, 2004). Moreover, Kassin and Fong (1999) have shown empirically that training in the Inbau et al. cues produces a *reduction* in the overall accuracy achieved, accompanied by a bias towards saying that subjects are lying and increased confidence in one's judgements.

If we take into account that, in many countries, before submitting the suspect to a strict interrogation the police carry out a more relaxed interview in order to establish innocence or guilt on the basis of behavioural cues of deception, the danger of the misinformation provided by *John E. Reid & Associates* becomes clear. But this danger is magnified if we consider the type of interrogation proposed by the *Reid & Associates* programme, involving as it does a highly aggressive and coercive approach that can lead many innocent people to confess to the crime being investigated (e.g., Kassin, 2005; Kassin & Gudjonsson, 2004). Briefly, the police: (a) interview the suspect; (b) observe certain behavioural cues of scarce diagnostic value, but which they believe to be associated with de-

<sup>1</sup> For example, Garrido, Masip & Herrero (2004) found that police are considered to be more capable of differentiating between truth and lies than the general population.



ception, and in consequence conclude that the suspect is lying; (c) on the basis of this conviction, submit the suspect to a process of tough interrogation –so tough that it leads many innocent suspects to confess (Kassin, 2004, 2005; Kassin & Gudjonsson, 2004). This process may explain a large part of the numerous cases reported in countries such as the United States (where Inbau and Reid's technique enjoys some popularity among members of the security services) of people who have been imprisoned on the basis of a confession that has later been reliably demonstrated to have been false (Drizin & Leo, 2004).

The aim of the present study is to “dismantle” a series of erroneous popular beliefs, in many cases spread through courses imparted or books written by people with little or no relevant qualifications, in relation to a clearly “psychological” topic, that of the detection of deception from non-verbal behaviour. The information presented on the following pages is based on the most rigorous scientific research in psychology and interpersonal communication. This information will be of undoubted interest for psychology professionals for three reasons: a) it represents a part of their discipline; b) the utility it may have in many areas of psychology; and c) in view of the consultant role of psychologists, who must respond to the call of other professionals and do so in accordance with psychological science, questioning the misleading beliefs the inquirer may hold.

### ACCURACY: IS THE LIAR CAUGHT SOONER THAN THE CRIPPLE?

A widely held popular belief is that which is reflected in the saying “the liar is caught sooner than the cripple”. In other words: it is easy to catch a liar. Is this belief correct?

Observers' accuracy (rate of hits) on making assessments of credibility (truth or lies) has been one of the aspects most widely studied in the field of deception. The experimental procedure employed usually consists in presenting a sample of observer or receiver subjects with a series of statements made by a group of emitter subjects (the potential liars). These statements are presented in audiovisual or auditory format, using tape recordings or “live” performances (see Chap. 3 of Miller & Stiff, 1993, for a description of the experimental paradigms employed). In some cases emitters and receivers are allowed to interact freely (Buller & Burgoon, 1996). Receivers must indicate, usually on a form, whether each

statement is true or false. Sometimes they are also required to indicate their level of confidence in their judgement and the cues that led them to make their decision.

Normally, half of the statements presented are true and the other half are false. Thus, by chance alone, the observers can get half of their judgements right –that is, they can obtain an accuracy of 50%. What is the accuracy actually achieved in empirical studies? In 1980, Kraut published a review of the studies carried out up to that year, which indicated a mean accuracy of 57%. Twenty years later, Vrij (2000) calculated the average rate for 39 relevant studies. The result was almost identical to that of Kraut's review: 56.6%. Approximately one third ( $n = 12$ ) of the experiments reviewed by Vrij showed an accuracy situated in the narrow range of 54% to 56%. In no experiment was the accuracy below 30% or above 64% (Vrij, 2000).

More recently, much more exhaustive and up-to-date reviews have been carried out, based on more meticulous sampling of the studies. Aamodt and Mitchell (in press) performed a meta-analysis on the effect of various individual variables on the accuracy of credibility judgements. Examining a total of 193 different samples of receivers, with a total number of 14,379 observers, they obtained a mean accuracy of 54.5%. In a more extensive study (including a total of 349 samples of receivers, with 22,282 subjects who assessed the credibility of messages from 3864 emitters), Bond and DePaulo (in press) found a mean accuracy of 53.4%. Even though this is significantly higher than the 50% expected by chance, in absolute terms it is an extremely poor accuracy rate. It means that of every 100 messages, 47 are judged erroneously. That is, we have almost the same probability of getting our judgements right as we have of getting them wrong. The accuracy of human detectors in judging credibility on the basis of observing behaviour is, despite the claims of popular wisdom, extremely limited. Indeed, of the different approaches to the detection of deception, the non-verbal one is that which gives the lowest levels of accuracy<sup>2</sup>.

This limitation extends, likewise, to those professionals for whom lie detection is important, and who have experience in tasks of assessing credibility. Thus, compared to the 54.2% obtained by lay university students, Aamodt and Mitchell (in press) report levels of 50.8% for samples of detectives, of 54.5% for American federal agents, of 55.3% for police and customs officials, of 59.0% for judges, and of 61.6% for the four samples of psycholo-



gists included in their meta-analysis. Bond and DePaulo (in press) use contrast statistics for comparing the accuracy of “experts” (security service personnel, judges, psychiatrists, auditors, etc.) and “non-experts”. Neither in the intra-study comparisons (on considering jointly all the experiments in which this comparison had been made) nor in the inter-study comparisons (comparison of the accuracy level in experiments in which the observers had been “experts” with those in which they had been “non-experts”) were the differences found to be significant. In the inter-study comparisons the accuracy levels obtained were 52.9% for the “experts” and 56.9% for the “non-experts”. In sum, professionals familiar with deception are *not* better detectors than lay observers.

Not only is accuracy low, but, moreover, it is *uniformly* low. There is evidence of a set of situational and personal factors that influence judgements and accuracy levels in a statistically significant way (Masip, Garrido & Herrero, 2002b). Thus, Bond and DePaulo (in press) found that certain variables (communication channel, emitter’s motivation, preparation, previous exposure to emitter’s behaviour and emitter-receiver interaction vs. non-interaction) had a significant impact on the rate of hits<sup>3</sup>. However, it is true that for some of these (motivation and preparation) this impact only appeared in the intra-study comparisons, and not in the inter-study ones. Furthermore, despite the significance of some differences, practically in all cases in which the authors

report accuracy rates they were below 60%. Thus, the influence of these variables, despite its statistical significance, is really quite low in absolute terms. In the meta-analytical study by Aamodt and Mitchell (2005), the authors show that such important individual variables as receivers’ age, sex, educational level/cognitive ability and traits of extraversion and neuroticism are not significantly related to accuracy of judgements. Only self-monitoring appears to show a weak positive relationship with it ( $r = .14$ ).

These results refer to the detection of lies and truth (they reflect the percentage of correct classifications on considering true and false statements jointly), but what specifically occurs in the case of the detection of *lies*? Research shows that people more easily identify truth than lies (Levine, Park & McCornack, 1999). This is because we have a tendency to consider that others are telling the truth, which increases our accuracy on judging truths and reduces it on judging lies (Levine et al., 1999; Masip et al., 2002b). Thus, for example, the meta-analysis by Bond and DePaulo (in press) found the mean percentage of truth judgements was 55.0%, significantly higher than the 50% expected by chance. This meant that accuracy on judging true statements was 60.3%, markedly higher than that for judging false statements, for which the rate was just 48.7%.

This tendency to judge statements as true may be due to a variety of factors (see Levine *et al.*, 1999). It may be

<sup>2</sup> A recent official report of the *British Psychological Society* by Bull, Baron, Gudjonsson, Hampson, Rippon and Vrij (2004) presents the results of various reviews on the validity of the polygraph. Using the Control Question Test (CQT), the percentage of liars identified ranges, depending on the review considered, from 83% to 89%, and the percentage of truth-tellers identified ranges from 53% to 78%. Using the Guilty Knowledge Test (GKT), the polygraph permits identification of practically all the truth-tellers (accuracy of 98% and 94%, depending on the review considered), but shows poor capacity for detecting liars (42% and 76%) (Bull et al., 2004). Notable among the verbal procedures for assessing credibility are Criteria-Based Credibility Assessment (CBCA) and Reality Monitoring (RM). CBCA permits correct identification of 73% of true statements and 72% of false statements (Vrij, 2005). Accuracy of RM is similar, attaining a discrimination level of 72% for the classification of both true and false statements (Masip, Sporer, Garrido & Herrero, 2005). As we pointed out elsewhere (Masip, Garrido & Herrero, 2002b), in contrast to the polygraph users or assessors who employ CBCA and RM, the observers in the experiments carried out from the non-verbal approach are not trained, so that comparison is inappropriate. Nevertheless, as pointed out later in this article, the increases obtained through training in non-verbal indicators are quite limited. A methodology that produced good results from the analysis of non-verbal behaviour is that employed by Vrij, Edward, Roberts and Bull (2000), even if their findings need to be replicated. On this issue, see Masip et al. (2002b).

<sup>3</sup> More precisely, accuracy was lower when observers were exposed to the visual channel than when they were exposed to the auditory and audiovisual channels; the intra-study comparisons (but not the inter-study ones) showed that it is easier to detect motivated emitters than non-motivated emitters; also only in the intra-study comparisons, accuracy was lower when emitters had been able to prepare the message than when they had not prepared it; previous exposure to the emitter’s habitual behaviour favoured detection; and the intra-study comparisons (inter-study comparisons could not be made because this factor varied only on a few occasions) indicated that detection is greater when there is emitter-receiver interaction than when the receiver observes a continuous and uninterrupted message from the emitter (Bond & DePaulo, in press).



based on a heuristic form of processing (Stiff, Kim & Ramesh, 1992), or on the actual functioning of the mind, which would in principle represent as true all the incoming information it understands (Gilbert, Krull & Malone, 1990); alternatively, the tendency may derive from the adaptive strategy of believing the messages received, since in everyday life the majority of them are true (Anderson, Ansfield & DePaulo, 1999). Recently, on the basis of two studies showing that the higher the quantity of information provided to the receiver, the less marked the bias towards truth, we have proposed that this bias may be due to an experimental artefact (Masip, Garrido & Herrero, 2005, in press). Certainly, in the research carried out to date, the fragments of behaviour of the emitter used as stimulus material have been very small, and this has limited the quantity of information observers can receive from the emitters, so that, on forming their judgements, observers are obliged to use a heuristic form of processing. And in credibility assessment tasks, heuristic judgements tend to be truth judgements (see Gilbert et al., 1990; Millar & Millar, 1997; Stiff et al., 1992). Thus, the truth bias found in research may be due to the brevity of the behavioural samples employed. In line with this idea, we have shown that the use of more extensive and informative samples of behaviour reduces this bias (Masip, Garrido & Herrero, 2005, in press). Nevertheless, this finding needs to be replicated by other research teams, and there are still some unanswered questions in relation to it (Masip, Garrido & Herrero, 2005, in press).

In any case, the tendency to judge statements as true appears to be weaker among those professionals for whom lie detection is more relevant than among others (Bond & DePaulo, in press). It has even been claimed, on the basis of empirical results, that such professionals actually present an opposite bias that leads them to judge statements as false (Meissner & Kassin, 2002), and that they have a general tendency to question the truth of what others say<sup>4</sup> (Masip, Alonso, Garrido & Antón, 2005).

In sum, the research reviewed in this section shows that: (a) the capacity of human beings to discriminate between true and false messages is quite poor; (b) this is the case even among people for whom such discrimination has professional importance; (c) although there are some

variables that significantly affect hit rates, in absolute terms the range of variation is from 50% to 60%, always remaining below acceptable levels of accuracy; (d) research shows that we tend to believe what others say to us, so that we detect more truths than lies; however, there is evidence to suggest that this result may be due to the way in which the research has normally been carried out; and (e) on the other hand, professionals for whom the assessment of credibility is important display a tendency to consider messages as *false*.

#### **CONFIDENCE: ARE WE AWARE OF OUR (IN)ABILITY TO DETECT LIES?**

Having established the difficulty of detecting lies on the basis of non-verbal behaviour, we move onto another question examined by research: is there any relationship between the confidence we place in our judgements and our accuracy? DePaulo, Charlton, Cooper, Lindsay & Muhlenbruck (1997) carried out a meta-analysis of research on confidence about credibility judgements. With the sample of 18 relevant studies they were able to locate, they found a mean correlation that was practically null:  $r = .04$ . Aamodt and Mitchell (in press) examined the same issue, adding more recent experiments to those included in the DePaulo et al. (1997) meta-analysis. The mean correlation in 58 studies found by Aamodt and Mitchell is virtually the same:  $r = .05$ . In sum, it seems that people are unaware of the correctness or incorrectness of their credibility judgements.

Another interesting finding related to confidence concerns the evidence that we tend to overestimate our ability to discriminate between truth and lies. DePaulo et al. (1997) compared confidence and accuracy in six studies in which both variables had been measured on a scale of 0 to 100 (or whose scores could be transformed into these values). They found a mean accuracy of 57.20% and mean confidence in judgements of 72.91%, clearly superior.

#### **CUES: LOOK ME IN THE EYE AND TELL ME THE TRUTH**

Many popular books on non-verbal communication present lie detection as a simple task: all we need to do is observe whether emitters display certain clearly visible behavioural signals to determine whether they are lying

<sup>4</sup> Recently, Kassin, Meissner and Norwick (2005) found that police tend more than non-police to consider as *true* a series of *false* confessions of crimes. This has led these authors to modify their initial view and to maintain that, more than a bias towards considering statements to be false, what such professionals present is a bias towards considering that the emitters of such statements are guilty.



or not. For example, Lieberman (1998) and Pease (1981/1988) claim that covering the mouth, touching the nose, rubbing an eye or the neck or pulling one's shirt collar are signs that a person is lying.

Likewise, people have very clear beliefs about what the behavioural cues of deception are (see, among other reviews, those of Strömwall et al., 2004 or Vrij, 2000). For example, an extremely widespread belief (and which is also found in Lieberman's book) is that liars avert their eyes. In a recent transcultural study this stereotype was found to have universal validity. When people from 58 countries were asked "How can you tell if someone is lying?", those from 51 mentioned that people avert their eyes when they lie (Global Deception Research Team, in press). A second study used a questionnaire with closed questions, one of which referred to eye contact. The three response options were that people look you in the eye *more* when they are lying than when they are telling the truth, that they look *less*, and that they look *to the same extent*. In 61 of the 63 countries studied the participants chose the second of these three options more frequently than either of the other two (Global Deception Research Team, in press). How far are these beliefs correct? Are there clear indicators of deception? What are they?

Various reviews have compared the results of studies focused on *real* deception cues (behaviours that differentiate true and false accounts) with those of studies examining *perceived* cues or people's *beliefs* about indicators of deceit and lying. Perceived cues are those that people *actually use* for making their credibility judgements, and beliefs are the cues that people *say* are useful for discriminating between truth and lies<sup>5</sup> (Masip & Garrido, 2000, 2001). In general, coincidences between these last two categories and the first are extremely scarce, reflecting the fact that people are largely unaware of the cues that can actually discriminate between true and false communication (Burgoon, Buller & Woodall, 1994; DePaulo, Stone & Lassiter, 1985; Vrij, 2000). For example, Vrij (2000) observed that, while people believe that, compared to truth-tellers, liars move their extremities

more, avert their eyes more, blink more, smile more, fidget and gesture more, change their position more and move their trunk more, the results of empirical research show that, in fact, liars move their extremities *less* than truth-tellers, and that the relationship between the rest of the behaviours and deception is not significant. Other popular beliefs examined by Vrij, such as that liars make more errors and hesitate more in their speech, make more pauses, and so on, have not received clear support from research, which has produced contradictory results due to the fact that certain variables, such as the cognitive complexity of the lie, may mediate the expression of relevant behaviours. There are two popular beliefs which, according to Vrij, are correct: that when people lie they speak in a slightly higher tone of voice, and that pauses are longer when people are lying than when they are telling the truth. In conclusion, then, the overwhelming majority of popular beliefs about non-verbal indicators of deception are erroneous. Unfortunately, the same applies to the beliefs of professionals such as police, judges, etc., which overlap to a large extent with those of the average citizen (see Strömwall et al., 2004, for a fuller discussion).

A possible explanation for this lack of agreement between beliefs and reality is provided by Kelley (1992), who hypothesizes that common sense notions are probably less valid when they refer to the *microlevel* than when they refer to the *mesolevel*. At the microlevel, Kelley situates "events that occur rapidly ..., on small scales of magnitude or mass (e.g., small contractions of the facial muscles or changes in direction of gaze), and often invisibly..." (Kelley, 1992, p. 6). The mesolevel is the "level of molar individual behaviour..." (Kelley, 1992, p. 6), and includes "immediate and direct consequences, periods of time from minutes to days... This level is the centre of attention in everyday life..." (Kelley, 1992, p. 6). Without doubt, the identification of discrete cues of deception belongs to Kelley's microlevel.

Whatever the case, the discrepancy between popular stereotypes and empirical reality may explain the low

<sup>5</sup> *Real* deception cues are studied by comparing the extent to which various behavioural categories (e.g., direction of gaze, stammering) are present in true and false messages. In order to examine *perceived* deception cues a comparison is made between messages *judged* as true and messages *judged* as false by observers. *Beliefs* or *stereotypes* about deception cues are studied by asking people which cues they think can differentiate true accounts from false ones. As we saw on presenting the results of the work of the Global Deception Research Team (in press), open or closed questions can be used. Moreover, these can be formulated in general terms ("How can you tell if someone is lying?") or, as is the case in Masip, Garrido, Herrero, Antón and Alonso (in press), they can refer to a specific judgement or set of judgements ("On what did you base your conclusion that this person was lying/telling the truth?").



value of behavioural cues for formulating *correct* judgements about lying. Park, Levine, McCornack, Morrison and Ferrara (2002) asked a group of students to recall a case in which they had discovered that another person had lied to them and to indicate which strategies that had used on that occasion to discover the deception. The results show that the methods most commonly used were information from third persons, material evidence and the confession from the liar him/herself. The consideration of non-verbal and verbal cues was among the strategies least employed (2.1%). In sum, the role of such cues in formulating correct judgements about lying is minimal<sup>6</sup>.

The work by Vrij (2000) described above reviews only a part of the literature. Subsequently, DePaulo, Lindsay, Malone, Muhlenbruck, Charlton and Cooper (2003) published the most exhaustive meta-analytical work carried out to date on non-verbal and verbal deception cues. Although they do not compare these indicators with popular beliefs, their results are extremely interesting, since they permit the isolation of cues which are of potential utility for discriminating between truth and lies. DePaulo et al. examined a total of 116 research reports that explore the relationship between 158 behavioural cues and the act of lying or telling the truth. The authors distinguished between two sets of cues. First, those that had been examined on at least three different occasions, for at least two of which the effect size had been able to be calculated. The effect size is, in this case, an index of the relationship between the presence/absence of the cue and whether the emitter is lying or telling the truth. It can only be calculated accurately if sufficient information is provided in the original research reports, which was not the case in all those examined by DePaulo et al. The second set of cues included all the rest. The calculations referring to the first set are more valid, given the larger number of samples and the greater accuracy in the calculations of effect size.

The authors found that just 24 cues of the 88 in the first group distinguished between true and false statements. Added to these were 17 from the second group. Overall,

24 + 17 = 41 cues from a total of 158 examined: just 26.0%. If we consider only the 24 significant cues from the first group, whose calculation gave more guarantees, the percentage would be 15.2%. In conclusion, and in contrast to what is argued in a series of “self-help” books and the claims of popular wisdom, there are very few differences between people’s behaviour when they lie and when they tell the truth.

With the aim of isolating the most valid deception cues, DePaulo et al. (2003) concentrated on those based on a number of comparisons higher than five and with an effect size of 0.20 or more in absolute values. They found only 12 such cues, the majority of a verbal nature. The most discriminative cue ( $d = -0.55$ ) seems to be verbal and vocal immediacy. This means that when they lie people respond in a less direct, clear and relevant way than when they tell the truth, and that they also do so in an evasive and impersonal manner (DePaulo et al., 2003). Moreover, by comparison with the accounts of people who are telling the truth, those of liars will appear more ambivalent and discrepant (e.g., there will be a lack of agreement between what is expressed through some channels and through others) ( $d = 0.34$ ). Likewise, lies will have more details, ( $d = -0.30$ ), a less logical structure ( $d = -0.25$ ) and less contextual elaboration ( $d = -0.21$ ) than truths. These are three verbal criteria of Criteria-Based Credibility Assessment, or CBCA<sup>7</sup> (Garrido & Masip, 2000, 2004; Masip, Garrido & Herrero, 2003; Vrij, 2005). False accounts will also appear more plausible ( $d = -0.23$ ) and will contain more negative assertions and complaints ( $d = 0.21$ ) than true ones. The speaker will appear insecure and hesitant, reflected in both the voice and the words ( $d = 0.30$ ), will give the impression of being more nervous or tense ( $d = 0.27$ ), will have a tense-sounding voice ( $d = 0.26$ ) and a higher tone of voice (voice frequency) ( $d = 0.21$ ). Furthermore, the personal involvement of the speaker at a verbal and non-verbal level will be lower in false accounts than in true ones ( $d = -0.21$ ). It is important to point out that none of the colourful cues described by Pease

<sup>6</sup> Park et al. (2002) interpret their results as indicating that people do not employ verbal and non-verbal cues to make their judgements of credibility. However, since the authors confined themselves to examining lies that were discovered, we can only conclude that such cues have a limited effect on correct judgements about lying. It may be that these cues are frequently used but have very little discriminative power.

<sup>7</sup> The *logical structure* implies that the different details describe an identical course of events, the statement as a whole is coherent and logical and its parts “fit together”. By *contextual elaboration* we understand that the event described is situated within a rich and complex spatio-temporal context (see Garrido & Masip, 2001).



(1981/1988) are on the list based on rigorous meta-analysis of the relevant research, and that nor is eye contact<sup>8</sup>.

It is extremely important to bear in mind that these results are based on the *whole* set of studies and experimental conditions of the works analyzed by DePaulo et al. (2003). But a series of circumstances were detected that influence the utility of cues for discriminating between true and false statements. Thus, the emitter's motivation, the aim pursued with the deception (concealing a transgression vs. other purposes), the length of response (time during which emitters express themselves) and previous preparation of the lie influence the meaning and discriminative power of various cues (DePaulo et al., 2003; DePaulo & Morris, 2004). For example, when the account was not prepared in advance, the response latency (time elapsed between the end of the question and the beginning of emitter's response) was greater for lies than for truth-telling, but when the account was prepared in advance the latency was greater for *truth-telling* than for lying. Similarly, there were various cues (e.g., blinking) that discriminated when emitters were lying about transgressions but did not discriminate when they were lying about other things (for a full description of the effects of the moderating variables on the cues, see DePaulo et al., 2003; DePaulo & Morris, 2004). In sum: (a) the meaning of the same cues (e.g., response latency) may change according to the circumstances; (b) there are behaviours (e.g., blinking) that discriminate significantly in some circumstances but not in others; and (c) there are cues (e.g., blinking) that do not discriminate in general terms but do so in highly specific circumstances, and vice versa. Thus, in contrast to the claims of many "self-help" books, not only are there few deception cues, but these are also highly specific to each situation. As Kelley (1992) points out, common sense is more sensitive to the principal effects than to the interactions revealed by science, and moreover, science discovers underlying factors not perceived by the lay observer, and which nevertheless strongly influence the results.

### TRAINING: IS THERE ANY REMOTE HOPE?

The picture emerging so far is by no means an encouraging one: human beings are terrible lie detectors, our confidence levels are not related to the accuracy of our judgements, we tend to overestimate our ability to detect lies, our beliefs about deception cues are erroneous and we use the wrong cues on making our judgements. Is there any hope of our learning to do it correctly?

Numerous attempts have been made to train people to detect deception (see the reviews by Bull, 2004; Frank & Feeley, 2003; or Vrij, 2000). Vrij observes that three types of training have been employed. One consists in providing subjects with *feedback* on their results, so that they can learn from their errors and correct judgements as they make their credibility assessments. Another type of training is based on an *informational strategy*, consisting in indicating to observers the true relationship between certain cues and deception. A third type of training is based on an *attentional strategy*, whereby observers' attention is focused on certain revealing cues (without necessarily explaining their meaning), or on the most transparent channels (e.g., the auditory channel). According to Vrij, regardless of the method used, observers have in general managed to increase their level of hits in the training condition. However, the author also notes that such increases have been quite poor: a mean accuracy of 54% in the non-trained groups vs. 57% in the trained groups.

In a later work than that of Vrij (2000), and a more systematic one, Frank and Feeley (2003) meta-analyzed the research carried out to date on non-verbal training in lie detection. Their study considers 20 comparisons made in 11 published works, with a total of 1072 observers in the training groups and 1161 in the control groups. They found the increase in accuracy due to training to be statistically significant, but very small: they report a mean hit rate of 54% in the non-trained groups and of 58% in the trained groups; note that the values are almost identical to those found by Vrij (2000). These authors argue that poor quality of the training programmes employed may be behind such a small increase. However, while it

<sup>8</sup> The effect size for eye contact was  $d = 0.01$ , and for averting the eyes,  $d = 0.02$ ; both  $d$ s were non-significant. The cues that gave effect sizes larger than 0.20 in absolute values but that were calculated on the basis of 5 or more comparisons (in reality, 3 to 5 comparisons) were cooperativeness ( $d = -0.66$ ), admission of lack of memory ( $d = -0.42$ ), dilation of pupils ( $d = 0.39$ ), duration of account ( $d = -0.35$ ), related external associations ( $d = 0.35$ ), verbal immediacy ( $d = -0.31$ ), spontaneous corrections ( $d = -0.29$ ), raising of the chin ( $d = 0.25$ ), attributions about the mental state of the other person ( $d = 0.22$ ), repetitions of words and phrases ( $d = 0.21$ ) and self-disapproval ( $d = 0.21$ ). Positive values of  $d$  indicate that the behaviour is presented more on lying than on telling the truth; negative values have the opposite meaning.



is true that the programmes used present a series of limitations, a more fundamental problem concerns the scarce relationship, mentioned previously, between behavioural cues and deception, as well as the dependence of this relationship on diverse circumstances (DePaulo et al., 2004). This may have a negative impact on the effectiveness of the three forms of training identified by Vrij (2000). Thus, what can be learned through *feedback* in a programme of the first type will be confused, relative and of little value. In the case of an *informational strategy*, there will be little consistent and valid information at a transituational level that can be provided to observers. Finally, the use of an *attentional strategy* also presents problems. If observers are guided to focus their attention on certain *discrete cues*, these will necessarily have limited validity, and dependent on circumstances. And if the aim is to focus observers' attention on the auditory and audiovisual *channels*, significantly more transparent than the merely visual channel in the meta-analysis by Bond and DePaulo (in press), it should previously be borne in mind that, in the inter-study comparisons (Bond & DePaulo do not present the specific accuracy indices in the intra-study comparisons), the average levels of accuracy attained for such channels were 53.7% (auditory channel) and 53.9% (audiovisual channel), as against 50.2% for the visual channel. Remember that the hit rate by chance is 50%, and that total accuracy corresponds to 100%. Consequently, the final accuracy that can be achieved by observers will be quite low if we ask them to pay attention to the auditory or audiovisual channels.

Based on a partial analysis of the relevant research, Meissner & Kassin (2002) suggest that, rather than increasing accuracy, what training programmes do is increase observers' tendency to say that messages are false. In line with these appreciations, in the more extensive meta-analysis by Frank and Feeley (2003), the increase due to training was null on judging truth (accuracy of 58% in the non-trained groups vs. 56% in the trained groups), but substantial on judging lies (49% vs. 55%). This effect should come as no surprise. Although Vrij (2000) identified the three approaches described above, in reality, the majority of training programmes have been based on the strategy of informing observers about the supposed relationship between certain behavioural cues and deception. Normally, such training focuses specifically on the indicators of *lying*, and not on the indicators of truth. Certain behaviours are pointed out, trainees are told that these tend to appear

more frequently when people are lying than when they are telling the truth, and they are invited to try and identify them in the experimental videos to determine whether emitters *are lying* (and not to decide whether they are *lying or telling the truth*). But the fact that certain cues appear *more frequently* in liars than in truth-tellers does not mean that they appear *exclusively* when people are lying. Thus, observers actively seek these deception cues, and as soon as they perceive the slightest hint of them, come to the firm decision that the emitter is lying. This may be why the training programme increases only the frequency of lying judgments, and not the accuracy on judging truths. Quite probably, a training programme focused on *truth* cues, or indeed a more balanced one that presented, with identical emphasis, indicators of *truth* and of *lies* (their opposites), and in which the task did not consist in *detecting lies*, but rather in *discriminating between true and false statements*, would have quite different effects. Our most recent research is exploring this possibility.

## CONCLUSIONS

Popular wisdom maintains that "the liar is caught sooner than the cripple". The majority of people show great confidence in their assessments of truth and lies. There are, moreover, clear popular stereotypes about people's behaviour when they are lying. Likewise, bookshops and libraries abound with "self-help" books, widely read and accepted, which present lie detection on the basis of non-verbal behaviour as a simple task to learn, and which provide long lists of supposed indicators of deception with universal validity.

As a counter to popular beliefs and the claims of the so-called "self-help" books, the present article has discussed the results of several decades of rigorous research carried out by psychologists and communicologists. It is important for the reader to bear in mind that the majority of the findings described here come from wide-ranging meta-analytic studies, so that the samples are extremely large and heterogeneous (and hence, representative), and the results faithfully reflect the global findings of virtually all the research carried out to date. These results are in stark contrast to the suggestions of popular beliefs and the proposals of most "self-help" books. Thus, the following conclusions can be drawn: (a) the capacity of the human being for discriminating between truth and lies is extremely limited; this is the case even for professional groups for whom the detection of deception is an



important part of their work; (b) people are unaware of the correctness or incorrectness of their credibility judgements; (c) we tend to overestimate our ability to identify truth and lies; (d) we use the wrong cues on making credibility judgements; (e) popular beliefs about deception cues are mistaken; (f) the beliefs of professionals for whom the detection of deception is an important part of their work are also erroneous, and similar to those of other people; (g) it is *not* been demonstrated that the behavioural cues mentioned in the majority of "self-help" books permit adequate discrimination between truth and lies; (h) there are very few behaviours that truly permit us to distinguish between truth and lies; (i) in contrast to what we are led to understand by many "self-help" books, and what popular wisdom maintains, the meaning and discriminative power of behavioural cues depend on a series of situational variables; (j) also in contrast to the assertions of certain books addressed to the general public, learning to discriminate between truth and lies is extremely difficult, as shown by the limited effectiveness of various training programmes; and (k) rather than raising overall accuracy, the training programmes in common use increase the bias towards saying that statements are false.

Sometimes, certain professionals whose work involves the assessment of credibility allow themselves to be led by their naive beliefs. In other cases, in a laudable effort to learn and to extend their professional skills, they seek information in books apparently written by reputable psychology professionals, but which are in fact the work of scarcely qualified authors who offer only spurious advice of no scientific worth whatsoever. Some go even further, and attend courses or seminars, but these are often imparted by people from outside the fields of psychology and communication, or by more experienced colleagues who, frequently with the best of intentions, confine themselves to passing on their commonsense intuitions and beliefs, out of touch with scientific progress in the relevant field of knowledge. In certain contexts, the consequences of a wrong credibility judgement can be devastating (the conviction of any innocent person; restriction of access to a given job, or its loss: and so on), hence the need for those making such judgements to receive the most rigorous and up-to-date information in the field of the detection of deception. Psychologists are among such people, but they have the added responsibility of acting as consultants for other professionals (and laypersons) about the true relationship between behavioural cues and decep-

tion. In this regard, I would like to have been able to offer a clear list of specific behavioural cues, clearly perceptible and unambiguous, as unquestionable indicators of lying. This is what the "self-help" books do, but, unfortunately, the reality is much more complex. That is indeed the lesson to be learned.

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