

## CHAPTER 1

# Introduction

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### MYTHS IN DECEPTION

Everybody knows what it is to lie, and this familiarity with lying surely makes us knowledgeable about deception.<sup>1</sup> For example, we all know that lying is undesirable. We therefore rarely lie ourselves since decent people do not make a habit of lying, and this lack of practice makes us poor liars. Because lying is so undesirable, we prefer not to be lied to. We therefore do not wish to spend time with liars and try to avoid them.

Fortunately, most people we know do not make good liars either. They reveal their deceit by behaving nervously and avoiding eye contact. Hence, just by observing someone's behaviour we can often spot a liar. We are rather good lie detectors, particularly when spotting mendacity in our own children, partners, and close friends.

Of course, conmen, smugglers, and other types of criminals try to achieve their aims by means of deceit, and, if successful, they could do us a lot of harm. Fortunately, we are well protected against them, because professional lie catchers are good at spotting such liars. The additional benefit these professionals have is that they can rely upon specialised lie detection equipment. Indeed, some of the machines that were used in the past may have proven to be unreliable, but a lot has changed

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<sup>1</sup>I will use the terms lying and deception interchangeably.

since then. For example, technological developments such as brain scanners mean that researchers have now direct access to people's thoughts and feelings and therefore can tell with certainty whether someone is lying. Moreover, professionals nowadays use much more sophisticated interrogation techniques to catch liars than they did in the past.

Correct? Actually . . . No. All of the above statements mentioned here are myths rather than facts, and I will unravel those myths in this book.

## GOOD LIARS AND POOR LIE DETECTORS

People tend to *underestimate* their own *ability to lie* (Elaad, 2003). There are several reasons why people think they are worse liars than they actually are. First, they tend to overestimate the extent to which their own thoughts, emotions, and other mental states are transparent to others (e.g., *illusion of transparency*, Gilovich, Savitsky, & Medvec, 1998). In other words, people mistakenly believe that their lies shine through. Second, self-perceptions are typically characterised by positive illusions (Taylor & Brown, 1988), and people typically think of themselves as being more moral than most others (Kaplar & Gordon, 2004). Admitting to being a good liar does not match with this positive self-image. Third, although people tell more white lies than serious lies, they remember their serious lies better than their white lies (Elaad, 2003). This book shows that it is often somewhat easier to detect serious lies than white lies, so people mostly remember the lies that probably were more easily detected (serious lies). Finally, perhaps people remember better those times when their lies failed than when they lied successfully, particularly if these failed lies resulted in negative consequences. By forgetting the times they lied successfully, they may underestimate how often their lies succeed.

People tend to *overestimate* their own *ability to detect lies* (Elaad, 2003) and more lies remain unnoticed than they generally think. There are many reasons why lies remain undetected, and they can be clustered into three main categories (Vrij, 2007): poor motivation; difficulties associated with lie detection; and common errors made by lie detectors.

### Poor Motivation: The Ostrich Effect

One reason why lies remain unnoticed is that often people do not attempt to detect them, because they do not want to learn the truth. I label this phenomenon the *ostrich effect*. There are at least three reasons why someone might not want to know the truth. First, a fabrication might sometimes sound more pleasant than the truth, and in such cases

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ignorance might be preferable. For example, why bother trying to discover whether mendacious compliments about one's body shape, hairstyle, dress sense, or achievements and so on, are truthful?

Second, people sometimes do not investigate whether they have been lied to because they fear the consequences the truth may hold. Some statistics suggest that up to 50% of men and 40% of women engage in extramarital relations (Feldman & Cauffman, 1999), yet many of them will remain undiscovered. A husband, for example, might try to dismiss suspicions that his wife is having an affair and avoid discovering the truth, because if he were to discover the truth and confront her with his knowledge about her lover, she may decide to leave her husband. This may be something he does not want her to do. Therefore, communicating what he has discovered may have undesirable consequences for the betrayed man and, upon realising this, he may decide not to investigate the issue. After the scandal with Monica Lewinsky broke, President Clinton told his aides in the White House that he did not have a sexual relationship with her. Erskine Bowles, the White House Chief of Staff at that time, was more than willing to believe him. This is how he described that moment to the Grand Jury: "All I can tell you is: This guy who I've worked for looked me in the eye and said he did not have sexual relationships with her. And if I didn't believe him, I couldn't stay. So I believe him" (*The Independent*, 14 September 1998, p. 4).

Third, people sometimes do not want to detect lies because they would not know what to do if they came to know the truth. Most guests, for instance, will not try to find out whether their host is truthful in his claims that he likes their presents, because what would they do if they discovered that he did not like their presents? More serious lies may remain undetected for the same reason. Suppose that the husband's wife in the example above decides not to leave him, what should he himself do instead? Once betrayed, the cuckolded husband may have trouble trusting his wife again, and the repercussions of such a discovery may take a very long time to resolve. President Clinton's personal secretary, Betty Currie, tried to avoid learning details of the relationship between President Clinton and Monica Lewinsky probably for the same reason. On one occasion, Lewinsky said to Currie of herself and the President: "As long as no one saw us – and no one did – then nothing happened." Ms Currie responded: "Don't want to hear it. Don't say any more. I don't want to hear any more" (*The Observer*, 13 September 1998, p. 8). Indeed, it is clear to see that knowledge of the affair would put Ms Currie in a difficult situation, forcing her between publicly declaring this knowledge or acting as an ally, and that is why she probably preferred to remain ignorant.

### Difficulties Associated with Lie Detection

As I will demonstrate in this book, even when people try to detect lies, they often fail to do so. Research has indicated that even professional lie catchers, such as customs officers and police officers, often make incorrect decisions, and that their ability to separate truths from lies typically does not exceed that of laypersons. One category of reasons why even motivated people fail to catch liars is because lie detection is difficult. Perhaps the main difficulty is that, as this book reveals, not a single nonverbal, verbal, or physiological response is uniquely associated with deception. In other words, the equivalent of Pinocchio's growing nose does not exist. This means that there is no single response that the lie detector can truly rely upon. Another difficulty is that liars who are motivated to avoid being caught may attempt to exhibit nonverbal, verbal, or physiological responses that they believe make an honest impression on lie detectors. As we will see, liars who employ such so-called *countermeasures* can indeed often fool professional lie detectors.

### Common Errors Made by Lie Detectors

Another category of reasons why people fail in their attempts to catch liars is that they make errors. In this book I will discuss numerous errors that lie detectors commonly make, including a tendency to pay attention to cues that are not reliably associated with deception. One reason as to why they focus on those non-diagnostic cues is because they are taught to do so. For example, Inbau and his colleagues wrote an influential handbook about how to interrogate suspects. The most recent, fourth edition, of this book appeared in 2001 (Inbau, Reid, Buckley, & Jayne, 2001).<sup>2</sup> In their book, they provide information about how lying suspects usually behave. According to Inbau and colleagues, behavioural cues to deception include posture changes, gaze aversion, self-adaptors (stroking back of head, touching nose, straightening or stroking hair, pulling threads on clothing and so on), placing a hand over the mouth or eyes when speaking, and hiding hands (by sitting on them) or hiding feet (by pulling them under the chair). In particular the beliefs that liars place their hands over the mouth or eyes or that they avert their gaze are frequently mentioned in the police literature (Brougham, 1992; Gordon & Fleisher, 2002; Kuhlman, 1980; Macdonald & Michaud, 1992; McKinnon, 1982; Rabon, 1992; Walkley, 1985; Walters, 1996; Waltman, 1983; Yeschke, 1997; Zulawski & Wicklander, 1993). As I will

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<sup>2</sup>Although there are many police manuals, I will mainly focus on the Inbau, Reid, Buckley, and Jayne (2001) manual, because their manual is commonly used by police and military interrogators and hence is so influential (Gudjonsson, 2003).

demonstrate, these behavioural cues to deception, and most of the other behavioural cues to deception mentioned by Inbau *et al.*, are not identified as such in the existing deception literature. There is evidence that lie detectors who pay attention to these cues actually perform worse than those who do not (Kassin & Fong, 1999; Mann, Vrij, & Bull, 2004).

## LACK OF REALISM

People's tendency to be overconfident in their ability to detect lies becomes evident when reading the deception literature or listening to practitioners. In principle, lies can be detected via observing someone's behaviour, analysing their speech, or measuring their physiological responses. In all three areas practitioners and researchers can be found who make bold claims about their ability to detect lies that they fail to back up with research findings. Several examples illustrate this. Paul Ekman, an American emeritus professor of psychology, has specialised in nonverbal cues to deceit. His work has inspired academics and practitioners for several decades. Not long ago, he claimed that his system of lie detection can be taught to anyone with an accuracy of more than 95% (*New York Times Magazine*, 5 February 2006; see also *Washington Post*, 29 October 2006 for a similar statement). There is, however, no study published to support this claim (Chapter 6).

One of the interview techniques discussed in detail in Inbau *et al.*'s (2001) manual is the Behaviour Analysis Interview (BAI). This manual is linked to a training programme where John E. Reid and Associates teach practitioners the BAI method and other methods. On their website, [http://www.reid.com/training\\_programs/r\\_interview.html](http://www.reid.com/training_programs/r_interview.html), they report that more than 300,000 professionals in the law enforcement and security fields have attended their three-day programme since it was first offered in 1974. They further claim that interviewers specifically trained and experienced in behaviour analysis assessment can correctly identify the truthfulness of a person 85% of the time (Inbau *et al.*, 2001). However, conclusive evidence to support this claim is lacking (Chapter 7, see also Blair & Kooi, 2004).

Udo Undeutsch, a German emeritus professor of psychology, laid the foundations for a verbal lie detection tool nowadays called Statement Validity Assessment (SVA). He reported that the method has been applied in thousands of criminal cases investigating child sexual abuse in Germany and Sweden and that in no single case has the outcome been later contradicted by other relevant evidence (Undeutsch, 1982). This suggests that the method is highly accurate. However, such a premise is not supported by SVA research. In the SVA chapter I discuss an

alternative reason for why the verdicts of SVA experts are unlikely to be contradicted: there is often no factual evidence available in child sexual abuse cases, and therefore often no opportunity to falsify the claims made by SVA experts (Chapter 8).

The debate about the use of the polygraph as a lie detector is heated, as will be explained in this book. Faith in the accuracy of the polygraph is high among practitioners. Dan Sosnowski, an American polygraph examiner, claimed that evaluation of the polygraph in the US has showed that it detects deception with 97% accuracy (*The Independent*, 11 October, 1999, p. 1). Sosnowski's claim is exaggerated and strong faith in the accuracy of the polygraph can be questioned on the basis of the scientific polygraph literature (Chapter 11).

Pavlidis, Eberhardt, and Levine (2002a) reported in the prestigious journal *Nature* that they have developed a high-definition thermal-imaging technique that can detect attempted deceit by recording thermal patterns around the eyes. They suggested that the technique has the potential to be used in rapid security screening without the need for skilled staff or physical contact. Unsurprisingly, their article attracted considerable media attention, because it sounds promising: it implies that the device could be used at airports to detect smugglers and potential terrorists. However, in their subsequent erratum Pavlidis, Eberhardt, and Levine (2002b) fell somewhat short from this claim by mentioning that "it was not intended to convey the impression that this thermal imaging technique is *already* suitable for mass security-screening purposes" (italics added by me). As I will explain in this book, it is doubtful whether lies could ever be reliably detected in the way suggested in the *Nature* article (Chapter 11).

Not long after the introduction of measuring brain responses, claims have been made that these techniques can be highly successful in catching liars. For example, Dr Farwell developed a "brain fingerprinting" technique that he aggressively promotes on his company's website [www.brainwavescience.com](http://www.brainwavescience.com). He claims high accuracy in classifying truth tellers and liars by measuring their brain waves. Others are less convinced. Wolpe, Foster, and Langleben (2003) reported that relatively few participants were actually tested and most of the data regarding brain fingerprinting are not published in peer reviewed literature.<sup>3</sup> The

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<sup>3</sup>Peer review is a crucial part of scientific writing. Peer review is a process whereby submitted articles are scrutinised by the editor and at least two consultants. Those consultants are scientists typically working in the same field as the author(s), and they are therefore knowledgeable about the topic of investigation and the research methods described in the paper. Most articles submitted to peer review get rejected because the editor and consultants detect some serious flaws. Those who do not get rejected typically undergo thorough revision before they are published.

latter point means that rigorous scientific scrutiny of Farwell's technique has not yet taken place. To back up his claim of high accuracy, Farwell refers on his website to his study with Smith published in 2001. In their well-documented report, the National Research Council (2003, p. 162) discuss this study and note that "the range of stimuli to which examinees were exposed were very small, and the sample size was very small ... Whether these findings generalise to other, more complex contexts in larger groups is not known." Interesting is the view of Emanuel Donchin, a psychophysicologist working at the University of South Florida, and Farwell's former graduate adviser and co-author on one of Farwell's articles. Reflecting on Farwell's technique he reports that "The necessary research has never been done" (Knight, 2004). In other words, the accuracy of brain fingerprinting is not as well established as Dr Farwell suggests (Chapter 12).

Ruben Gur examines activity in brain structures and areas. He is part of a research group that claims that their test is 99% accurate in distinguishing truths from lies and ready to detect terrorists (Wild, 2005). The 99% accuracy study has not been published in a peer reviewed journal, and the accuracy rates that have been published in such journals to date are lower. Moreover, the premise behind the lie detection technique Gur promotes could be too simplistic. Gur claims that "a lie is always more complicated than the truth" (Wild, 2005), which is not necessarily the case, as this book reveals (Chapter 13).

## THE CONTENT OF THIS BOOK

This book discusses nonverbal, verbal, and physiological indicators of deceit and the ability to detect lies on the basis of these indicators. In particular, I will address two questions: (1) Are there systematic differences between truth tellers and liars in nonverbal behaviour, speech content, and physiological responses? And (2) to what extent are observers able to distinguish between truths and lies when they examine someone's nonverbal behaviour, speech content, and physiological responses?

I commence this book with general information about deception. After defining deception, I describe which types of lie exist, the reasons why people lie, estimates of how often people lie, and individual differences in telling lies. Chapter 2 shows that lying is very much part of everyday life, and that the role of lying in social communication is two-pronged: sometimes lying causes harm to the ones who are lied to, but many lies told in daily life are white lies that may even benefit the lie receivers, often serving as a social lubricant.



Chapter 3 describes the relationship between nonverbal behaviour and deception. I present several theories as to why nonverbal cues to deception may emerge, and discuss research examining the behaviours displayed by truth tellers and liars. This includes research about the behaviours exhibited by suspects in police interviews and by the politicians Bill Clinton and Saddam Hussein. The chapter reveals that most nonverbal cues appear not to be associated with deception and some nonverbal cues are, at best, only weakly related to deception. It further shows that the relationship between nonverbal behaviour and deception is complicated, amongst other reasons because different people show different cues to deception, and because a liar's behaviour depends on the context in which the lie takes place.

Chapter 4 is the first of five chapters examining verbal cues to deception. The verbal cues discussed in later chapters (Chapters 7 to 10) form part of existing verbal lie detection tools used by professional lie catchers and scholars. In Chapter 4 I summarise verbal cues that are not part of such existing tools. This chapter shows that some of these verbal cues show weak relationships with deception.

In Chapter 5 I discuss how people believe liars behave and what they think they say. This chapter reveals that people often hold erroneous views about nonverbal and verbal cues to deception. Many cues that people believe are indicators of deceit are actually not related to deception, whereas some cues that they do not associate with deceit are in fact weakly related to deception. This chapter also shows that these erroneous views are held across the world and by both laypersons and professional lie catchers, such as police officers, customs officers, immigration officers, and prison officers.

Chapter 6 discusses how accurate laypersons are in detecting truths and lies in people they do not know, or in their friends, romantic partners and children, when they rely on the alleged liar's nonverbal and verbal behaviour. The chapter shows that people are typically poor at this task under such circumstances, even if it concerns the truths and lies told by friends and relatives. This chapter further discusses how good professional lie detectors are in distinguishing truths from lies when they pay attention to someone's nonverbal and verbal behaviour. The chapter shows that they typically do not fare better than laypersons.

Chapters 7 to 13 discuss the various lie detection tools used by professionals and scholars. Chapter 7 deals with the Behaviour Analysis Interview (BAI), the only professional lie detection tool to date that examines nonverbal cues to deception. BAI, however, also examines some verbal cues. BAI is taught to practitioners all over the world. In Chapter 8 I describe Statement Validity Assessment (SVA), a verbal veracity assessment tool developed in Germany and Sweden to



assess the credibility of statements made by alleged victims of sexual abuse. To date, SVA is the most widely used verbal veracity detection instrument and SVA assessments are accepted as evidence in criminal courts in several countries. Chapter 9 introduces Reality Monitoring (RM), another verbal veracity assessment tool. As far as I know, RM is not used by practitioners but it is popular amongst scholars, perhaps because it has a strong theoretical foundation. In Chapter 10 I discuss Scientific Content Analysis (SCAN). Like BAI, SCAN is taught worldwide.

Chapters 11 to 13 deal with physiological cues to deception. Throughout history it has been assumed that lying is accompanied by physiological activity within the liar's body. This activity is nowadays measured in different ways, mostly with a machine called a polygraph, also referred to as a lie detector (this labelling, however, is misleading as I discuss in Chapter 11). For lie detection purposes the polygraph measures finger sweating, blood pressure, and respiration. There are different theoretical rationales as to why truth tellers and liars may show different physiological responses while being attached to the polygraph. These different rationales lead to different interview protocols. Concern-based interview protocols are discussed in Chapter 11 and orienting reflex-based interview protocols in Chapter 12. Although concern-based interview protocols are used worldwide, the use of orienting reflex-based interview protocols is restricted to mainly Japan and Israel.

In Chapter 11 I also discuss thermal imaging, a technique that measures the blood flow around the eyes, and voice stress analysis, a technique that measures tremors and other aspects of the voice, both of which are concern-based lie detection techniques; and in Chapter 12 I also discuss a technique based on the orienting reflex that measures P300 brain waves via electroencephalograms (EEG-P300). Such alternatives techniques to polygraph testing are sometimes presented as fundamentally different from polygraph testing, but such claims are misleading. They measure concern or the orienting reflex differently from the polygraph, but use the same concern-based and orienting reflex-based interview protocols as employed in polygraph testing. Therefore, these techniques share the strengths and weaknesses associated with these two types of interview protocols.

In Chapter 13 I describe lie detection based on measuring activity in brain structures and areas. These activities are measured with a functional magnetic resonance imaging (fMRI) brain scanner. This is the most recent development in physiological lie detection, but, again, not fundamentally different from polygraph testing. The fMRI lie detection tool employs the same concern-based and orienting reflex-based interview protocols as used in traditional polygraph testing.

A review of the scientific literature discussed in Chapters 7 to 13 reveals that truth and lies are detected at levels well below perfection with each of these veracity assessment tools. However, it also shows that with several of these techniques truths and lies can be detected more accurately than by simply observing someone's nonverbal and verbal behaviour.<sup>4</sup>

Chapters 3 to 13 show several pitfalls in lie detection. I present these pitfalls in a systematic manner in Chapter 14 and provide 15 reasons as to why people fail to catch liars. The final chapter (Chapter 15) deals with improving lie detection skills. I make some suggestions about how to improve lie detection via analysing speech or measuring physiological responses. I will argue that collaboration between deception researchers and researchers in other areas of psychology is therefore needed. Most of Chapter 15 deals with how to improve lie detection via observing someone's nonverbal or verbal behaviour, and I present 17 guidelines that lie detectors could use to detect deceit in this manner. In this chapter I pay more attention to this type of lie detection than to that based on speech analysis or physiological responses and I do this for two reasons. First, it is the most inaccurate type of lie detection, and therefore perhaps mostly in need of improvement. Second, this form of lie detection can be used in many more situations than the other two types of lie detection, because it does not require transcribing someone's speech (necessary for many speech analysis protocols) or equipment such as a polygraph, a cap containing electrodes (often used to record EEGs), or fMRI scan.

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<sup>4</sup>When I refer to verbal lie detection via analysing speech in a systematic manner using the verbal veracity assessment tools discussed in Chapters 7 to 10, I will use the term *speech analysis*. When I refer to observing verbal cues in an unsystematic manner, I use the term observing (or paying attention to) *verbal behaviour*.