WHY LIES FAIL AND WHAT BEHAVIORS BETRAY A LIE

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ABSTRACT. This chapter provides a theoretical analysis of why some lies fail while others succeed and presents a discussion of its implications for the design and interpretation of research on deception. New findings on the measurement of facial expression, body movement, voice and verbal behavior are reported which show that the combination of facial and vocal measures allows highly accurate identification of deceptive behavior. Other data show, however, that most people do not make use of the behavioral cues most relevant to detecting deception, but instead they depend upon those behaviors least valuable in the detection of deception.

1. Introduction

As the title of this chapter suggests, I will describe two quite different topics, one theoretical and the other empirical. My rationale for including both in the same chapter is that the behavioral clues to deceit are neither predictable nor understandable without a conceptual understanding of why and when these behaviors may appear in one or another deceptive context.

Before beginning let me briefly define what I mean by deceit or lying, terms I use interchangeably in this chapter. In a lie one person deliberately makes the choice to mislead another person. No prior notification is given about this intent, although the social context may suggest to any reasonable person that lying is likely to occur.

2. Why Lies Fail

Many lies succeed. It is incumbent upon those interested in detecting deceit to account for when lies will fail and when they will succeed. Such an account will not only tell us when behavioral clues may betray a lie, and what we should therefore attend to, but it will also provide guidelines for deciding which types of experimental deceptive scenarios can provide information relevant to which real life settings.

Certainly, it is not the arena which determines the success or failure of deceit. It is not that all spousal lies succeed and all political lies fail. Within every arena of life (and when one begins to consider the matter, there are few arenas in which deception does not occur) some lies fail and others succeed.

Lies fail for a variety of reasons which will not concern us here. For example, an informant may betray a lie, violating the liar's confidence by doing so, or having obtained the relevant information without the liar's assent. Liars may also be betrayed by many other kinds of evidence which exposes the liar's claims as false. My focus is not upon these types of betrayal, but upon instances in which the liar's own behavior betrays the lie. I omit from such considerations instances in which the liar confesses, (although much of my discussion is relevant to predicting when a liar will confess), or instances in which the liar might be judged to have acted in a way so that he or she would be caught. Instead I am interested in those cases in which some aspect of the liar's behavior, despite his or her best intentions, betrays the liar's false pretense.

To put it briefly, before expanding upon this, there are two reasons why lies fail, one to do with thinking and the other with feeling. Lies fail either because the liar failed to adequately prepare, or because of the interference of emotions.

I would predict that in general, disregarding the type of lie, and disregarding who is the liar, and who the target, and recognizing that disregarding these issues to make a general assertion is a very risky stance to take, most lies fail because the liar has not adequately prepared the false line he or she intends to maintain. One obvious, if not very interesting, example is when the liar forgets what he has said on one occasion and thoroughly contradicts himself on another occasion. Here the source of clues to deceit is in the verbal content. One must be cautious about this, however, since truthful people will contradict themselves. However, I believe it would be possible, although I have not tried to do so, to specify the type of contradictions which are reliable signs of lying. It would be interesting to know whether statement analysis, a technique described in other chapters in this book, is less successful when the liar has fully prepared the false line.

Another consequence of the failure to adequately prepare, is being caught off guard when asked questions the liar had not anticipated and for which the liar has no ready reply. In such a jam the liar must think of a credible answer on the spot. When doing so most people will evidence various behaviors which signify they are thinking about what they are saying as they are talking. Pauses, gaze aversion, speech disfluencies, and speech mannerisms may all increase over what is usual for that person. And, the use of the hands to illustrate speech (what Ekman and Friesen [1969a] termed illustrators) may increase, while voice intonation may flatten. Bear in mind that these are not signs of lying per se. I maintain that there is no behavioral sign of lying itself. But when these signs of thinking up a reply occur in contexts in which answers should be known without thought, they can betray the liar.

Lies are also betrayed by signs of emotions. The simplest case is one in which the liar attempts to fabricate convincingly an emotion which is not felt. Few people are very good at this, although most of the time people get away with it, since rarely does the target of such a lie care whether the emotion displayed is feigned or real. There are what I call "reliable" behavioral signs of emotion, reliable in the sense that few people can display them at all or correctly. Narrowing the red margins of the lips in anger is an example of such a reliable sign of anger, typically missing when anger is feigned, because most people can not voluntarily make that movement. There are ways around this for the inventive liar, such as utilizing a Stanislavski-like technique to create the actual emotion, so that it's involuntary signs will then appear unbidden.

More typically lies about emotions do not simply involve fabricating an emotion but concealing an emotion which is actually being experienced. Often concealment

goes hand in hand with fabrication, in which the liar uses a feigned emotion to mask signs of the emotion to be concealed. Such concealment attempts may be betrayed in either of two ways. First, some sign of the concealed emotion may escape efforts to inhibit or mask it, providing what Ekman and Friesen (1969b) termed leakage. Alternatively, the liar may inadvertently produce a deception cue, which does not leak the concealed emotion but betrays the likelihood that a lie is being perpetrated. For example, only a fragment of the concealed emotion may leak which is not decipherable, but which does not jibe with the verbal "line" being maintained by the liar, or the very effort of having to conceal may produce alterations in behavior, and those behavioral alterations contradict the liars' verbal story.

Even when the lie is not about emotions, there may be emotions about engaging in the lie which can betray the liar. Chief among these feelings about lying are the fear of being caught, guilt about lying, and what I have called duping delight, the pleasure and excitement of putting one over. Not all lies will call forth these emotions. Whether they do will depend upon characteristics of the liar, the target of the lie, and the content of the lie. Elsewhere (Ekman, 1985) I have described in some detail a lying check-list which facilitates making a prediction about the likelihood that any of these emotions about lying will occur.

To give just a few examples, the fear of being caught is highest when the stakes for being caught, in specific, the punishment for being caught lying, is very high, the liar has not practiced the lie, and has not had the experience of having succeeded before in this very lie with this target, and when the target is known to be both suspicious and of extraordinary acumen. Guilt about lying will be highest when the liar shares values with and respects the target, when the target is not collusively aiding the lie and does not benefit from the lie, and when the lie is in no way authorized by any social group or institution. Duping delight is enhanced when others who are allies of the liar observe the liar's actions.

While the arousal of any strong emotion, fear, guilt or delight, produces changes in behavior which may be detectable, and thereby betray the lie if they do not fit the liar's line, each of these emotions produces some unique behavioral signs. Elsewhere (Ekman, 1985) I have explained in detail how these emotions, and the very process of managing emotions, are manifest in face, body, voice, and paralinguistic behavior. Perhaps here it would be useful to mention that there is no one channel which is the best or most sensitive source for clues to deceit. As the data I will describe later in this chapter suggest, every aspect of behavior can provide such clues. And, there are hints of individual differences as well, in terms of what behavioral source may be most profitable to scrutinize.

An astute lie catcher will assess the likelihood of any of these emotions, so as to better know what behaviors to be especially alert to. Also, such an exercise will alert the lie catcher as to when the truthful person may appear to be lying. One must not make Othello's error, of presuming that a sign of fear is a sign of lying. The truthful person may, under some circumstances, be afraid of being disbelieved, or guilty, or manifesting delight. The crucial issue is to examine the circumstances, and evaluate whether or not a truthful or lying person would be experiencing these emotions.

The lying check list and the reasoning which underlies it also can be helpful in evaluating the utility and relevance of different deception scenarios which are to be employed in research. My argument suggests that if we wish to learn about situations in which the stakes are high, we should study such situations in our laboratory, not just for the sake of verisimilitude, but because those stakes will

generate crucial behavior. High stakes, let me note, are a two-edged sword. While they increase the fear of being caught thus increasing those chances because of the burden they impose on the liar to conceal that fear, high stakes also motivate the liar to make a determined effort not to be caught.

3. Experimental Scenarios

Let us compare two experimental deception scenarios applying the framework I have described. Riggio and Friedman (1983) studied undergraduates who had volunteered to participate in a videotape experiment. The subjects sat alone in front of a video camera. They were given a folder which contained six magazine pictures. Instructions under each picture told the subject either to lie or tell the truth about that particular picture. After a few moments allowed for preparation they were told "describe in a few sentences to the camera the picture you just looked at... colors, people, objects, etc." Not much was at stake, there was no punishment for being detected, no reward for success in the deceit. No reason, in terms of the subject's past life, or future plans, to care whether he or she failed or succeeded in the lie.

Now consider the deception scenario which I and my colleagues devised. We deliberately sought to model a particular real life lie, that of the suicidal patient who lies about emotions, concealing her anguish in order to be released from hospitalization to be able to commit suicide without interference. We showed our subjects gruesome medical training films to arouse strong negative emotions felt at the moment, which they were told to conceal. We created high stakes, by recruiting for this study student nurses, who knew they would have to confront such gory scenes and were concerned whether they would be able to do so. We enhanced the stakes by identifying our experiment as a study of communication skills relevant to nursing, and telling them that success in our situation was a likely predictor of success as a nurse (which later studies did indeed bear out). The video cameras were hidden. The subject described her feelings as she watched the gruesome films to an interviewer who could not see the screen. The subject was instructed to conceal negative emotions and convince the interviewer she was watching a nature film of mildly pleasant content. For comparison purposes the subjects were also shown such a film which they were told to describe honestly.

These two experiments differ enormously in terms of the likelihood of behavioral clues to deceit occurring. In our study the lie is about strong emotions felt at the moment, and there should be leakage of those emotions or deception clues relevant to the attempt to manage those emotions. In the Riggio and Friedman study the subjects did not have to conceal emotions. In our study high stakes would induce both the fear of being caught, and considerable effort to succeed, while in the Riggio study, the stakes were probably very low. Neither study required preparation of a very elaborate line, and both gave a few minutes to prepare. In neither study should there be much guilt about lying, since the experimenter has sanctioned lying. (In the report of results, I will describe another feature of our deception scenario which pertains to how the findings can be interpreted).

The Riggio and Friedman study is unusual in that the subjects interacted with a camera not a person. Our study was unusual in examining subjects conversation while they attended a film. Both studies suffered from the limitation that the subjects did not choose whether to lie or be truthful, thus eliminating any individual
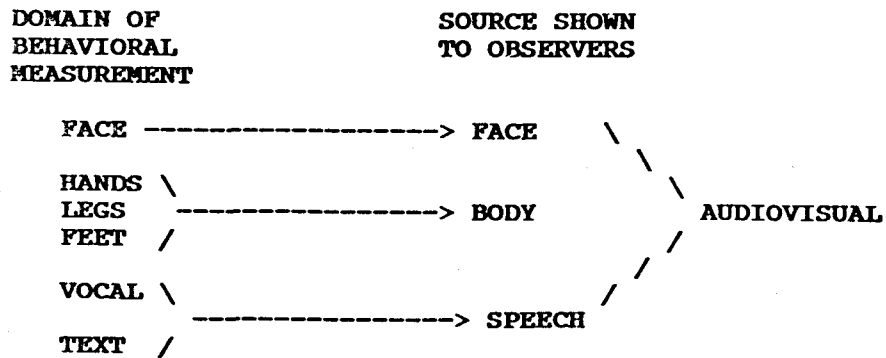
differences associated with that choice which might moderate any evidence of behavioral clues to deceit.

It is an empirical matter, of course, to determine to what extent findings from each experiment generalize to specific real life deceptive interactions. While there is no direct evidence of this sort, I will describe findings later which suggest that our results are relevant to serious, high stakes real life lies. The Riggio and Friedman deception scenario like most others studied in experimental social psychology, might have relevance to white lies. Certainly, I would not expect their study and ours to obtain the same findings about behavioral clues to deceit.

4. Behavioral Clues to Deceit

Figure 1 shows the types of data we have collected in our study of deception. Our study is unique in employing the most precise measurement currently available for the face (the Facial Action Coding System [FACS], Ekman and Friesen, 1978), voice (measures developed by K. Scherer [Scherer, 1982]), and body movement, (utilizing methods described first by Ekman and Friesen (1969a). While some other investigators have used some of the voice or body measurements, no other study of deception has employed all of them, and no prior study has precisely measured facial behavior.

FIGURE 1

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DOMAIN OF                      SOURCE SHOWN
BEHAVIORAL                     TO OBSERVERS
MEASUREMENT

    FACE  ----------------------> FACE    \
                                            \
    HANDS \                                   \
    LEGS    -------------------> BODY          \
    FEET  /                                     AUDIOVISUAL
                                              /
    VOCAL \                                 /
            ----------------> SPEECH      /
    TEXT  /
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Another unique feature of our study is that we have not just obtained precise behavioral measurement, but we have also shown the videotapes to observers and asked them to make inferential judgments about the behavior they observed. Again, other investigators have shown samples of behavior to judges, as we have, but no others have: (1) had some judges make attributions about personality, attitudes and affect and other judges make judgments about whether the subjects were lying; and (2) obtained such judgments both on the full audio-visual input, as well as when the judges are exposed to only a portion of the usual input (face, body, voice, speech, written text).

As I suggested, we did find some behavioral clues to deceit within each modality: face, body, voice and text. Within the face, two kinds of smiling differentiated honest from deceptive behavior. The first is what we are calling Duchenne's smiles (Ekman, in press; Ekman, Davidson, and Friesen, under review), smiles which, because they involve the muscle around the eye in addition to the muscle which pulls the lip corners up, are posited to be signs of actual enjoyment. Duchenne's smile, as would be expected, occurred more often when subjects honestly described their reactions to a pleasant film (the honest interview) then when they feigned pleasant feelings, concealing the negative emotions they felt while watching the gruesome films. Leakage smiles, smiles in which there are muscular traces of disgust, anger, fear, sadness, or contempt in addition to the smile, as expected, occurred more often when the subjects were trying to conceal such negative feelings than when they were actually enjoying themselves. (These findings have been fully reported in Ekman, Friesen & O'Sullivan, 1988).

As predicted, illustrators decreased when the subjects lied, and pitch level went up (see also, DePaulo & Kirkendol, this volume). The only textual measure which revealed a difference was a reduction in the number of self references in the deceptive interview.

Recall that these subjects were highly motivated to succeed in their lie. A tribute to their effort is our finding that many of the indices of restlessness and difficulty in talking, actually decreased when these subjects lied. They showed less self manipulative activity, less leg movement, and shorter latencies in their speech!

Combining the facial measures and the pitch measures was the most productive way to discriminate honest from deceptive interviews. By using both sets of measures it was possible to achieve an accurate assignment rate of 96%. With no other combination of measures was it possible to reach such a high hit rate. (These findings are described in detail in Ekman, Friesen, Scherer, & O'Sullivan, in preparation). This extraordinarily high hit rate compares very favorably with the most optimistic reports of those who advocate the use of the polygraph to detect lies. It is not possible to determine whether any other investigator who examined nonverbal behavior during deception could have achieved such accuracy, since no previous study examined, as we did, the hit rate when more than one behavioral measure is considered.

5. Reasons for Behavioral Cues to Deceit

Before considering the next set of data, whether these behavioral differences had signal value and are utilized when people observed these videotapes, let us consider why these behavioral differences occurred. It is easy to say why Duchenne's smile occurred less often when the people lied, because it is posited to be a sign of true not feigned enjoyment. If the honest interview did not involve actual enjoyment,

there would have been no reason for Duchenne's smile to have occurred more often during that interview than during the deceptive interview.

The leakage smile is another matter. Did it occur more during deception because the subjects were watching a gruesome film, or is it the result of lying? We theorize that it must be the consequence of lying, not the consequence of being emotionally upset. For we think that when people are upset, they usually don't smile too often, or if they do they manifest another type of smile, what Ekman (1985) called miserable smiles (which acknowledge being miserable) or compliance smiles. In a leakage smile the person is presumed to be trying to hide his misery, not acknowledging it. Such smiles should occur only when people are concealing, not when they are frankly showing their feelings.

Our deception scenario combined the arousal of negative emotions by the film which had to be concealed, and any negative emotions (most probably the fear of being caught) about lying itself. One could argue, (David Raskin made this argument at the meeting) that perhaps the leakage smile is simply a sign of negative emotions produced by the film not the consequence of lying about it. Other data show this is not so. Ekman (1972), Ekman Friesen & Ancoli (1980) and Ekman, Davidson & Friesen (under review) showed either these very same films or very similar ones to subjects who were not instructed to conceal their feelings. Leakage smiles did not occur. Thus we can say that leakage smiles, are, as we had predicted, a sign of deception about emotions.

What emotion is leaking, the emotion produced by the film or the emotion about lying? To answer that question we looked more specifically to see what particular muscle movements were occurring within the smile. If it was fear, that would suggest it was the fear of being caught, but that rarely was evidenced. Instead we saw repeated instances of disgust or contempt, the very emotions which have been found to occur most often when subjects watched these films but did not try to conceal their feelings.

The decrease in illustrators is predicted to occur when people are thinking about what they say, or inventing their replies. One could argue that this might not be what is responsible for the decrease in illustrators during deception, but that instead they decreased because people illustrate less when they talk about negative emotions. While we can not rule this out, it is improbable because many other investigators (for a review, see Depaulo, Stone & Lassiter, 1985) who studied lies not involving emotions have also found support for our prediction that illustrators will decrease when people lie.

Lastly, let us consider why there is an increase in pitch. We do not believe it is possible to be certain whether it is due to the fear of being caught or the emotional arousal produced by the film, or to both. Again it is important to note that an increase in pitch has been reported repeatedly by investigators who have studied lies which do not involve the concealment of emotions felt at the moment.

One last consideration. Why, it has been asked, did we choose to design a deception scenario, in which there were two different sources of negative emotions: those aroused by the film, and those aroused by the process of lying itself? The answer is that we wanted to generate findings relevant to those lies in which both factors are operative. The suicidal patient is concealing the anguish which is part of the psychopathological state, and may also be feeling guilty about lying or afraid of being caught.

6. Utilization of Cues to Deceit

Let us turn now to the question of whether the behavioral clues to deceit we have isolated are utilized by those who observed these videotapes. The videotapes were shown to groups of observers, male and female college students. I will focus only on the observers who were told nothing about the situation, other than that they would observe a series of conversations. Other studies (Ekman and Friesen, 1974) have shown that when observers are told about the experiment and asked to judge when the person is lying, they do not much better than chance. Now let us consider the observers who were told nothing about the interview situation, and who were asked to make a variety of attributions, not just whether the person was lying.

No single observer saw a person in more than one of the two (honest or deceptive) interviews. After observing each interview the observers were required to rate the person on fourteen bipolar scales which dealt with trustworthiness, how outgoing the person was, how relaxed the person appeared to be, how pleasant the person felt, and how likable the person seemed to be.

In order to determine what information the observers were relying upon we correlated all of the behavioral measurements with the observers' ratings. The overall finding was that when the subjects were lying, the observers judgments correlated only with the text measures. Duchenne's smile, leakage smiles, illustrators and pitch, all of which effectively differentiated the deceptive from the honest interview, were not correlated with the judgments of the deception interview made by the observers who were exposed to the full audio/video record. The only behavior which distinguished honest from deception interviews which did correlate with the observers judgments of the deception interview from the audio-visual record was mannerisms.

It is not that the other nonverbal and vocal behaviors are not detectable. For when we examined the judgments made by observers who only saw the face, we found that Duchenne's smiles were correlated with judgments. Similarly when we examined the judgments made by observers who saw only the body, illustrators correlated with observers judgments and pitch was correlated with the judgments made by observers who heard only the speech.

In contrast to the nonverbal measures which were not correlated with the judgments of the audio/video presentation of the deception interview, nearly every measure of the verbal text and many of the vocal measures were correlated with observers judgments of the audio-visual version of the deception interview. The only text measure not correlated with observers judgments, the number of I's, and the only vocal measure not correlated with observers judgments, pitch, were the only text and vocal measures which differentiated the honest from deception interviews.

To sum up these findings, the face, body, voice and text clues which are most relevant to spotting deceit were ignored (with the exception of mannerisms). Those behaviors which were least useful for differentiating when someone was lying were most relied upon when the observers responded to the audio-visual presentation of the deception interview. (These findings are reported in detail in O'Sullivan, Ekman, Friesen, and Scherer [in preparation]). This apparent failure of the observers to make use of the behaviors most relevant to detecting deceit fits with Ekman's (1985) notion that, in social life, people unwittingly collude in maintaining rather than uncovering deception.

7. Conclusion

Our findings show there are behavioral clues to deceit that cut across channels and are evident in face, body, voice, and speech. When combined, the face and voice provide a very high hit rate in accurately detecting when someone was lying. Yet observers who are exposed to the usual interpersonal input, the full audio-visual presentation, ignore these behavioral clues and instead rely upon those aspects of voice and speech which do not differentiate deceptive from honest behavior.

Each of these findings requires replication. Such replications need to vary the nature of the population studied, we only examined college educated women as deceivers. Replications should also consider the nature of the deceit itself, examining other types of lies about emotion, and lies about matters other than emotion. At some point it will be necessary also to consider whether the findings reported here will obtain when there is little at stake in whether the lie succeeds or fails.

A number of other questions also needed to be addressed. For example, will the use of measures of nonverbal behavior enhance the accuracy of lie detection when made by the polygraph? And, could observers be taught to ignore the irrelevant behaviors and focus instead on those behaviors which differentiate deceptive from honest behavior?

8. Acknowledgement

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