Lies and Deception Cues in Nonverbal Communication

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Bachelor's Thesis

Supervisor: Alma Vančura, Ph.D. Associate Professor

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Znakovi laži i obmane u neverbalnoj komunikaciji

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Abstract

This paper focuses on the complexities of lies and deception cues in nonverbal communication. People communicate largely through nonverbal channels. The aim of this paper is to explore the relationship between nonverbal communication and deception by analysing nonverbal cues manifested in the face, body, and voice. This paper also examines the psychology of deception, and the types of lies. Additionally, this paper examines lie detection methods, such as the polygraph, and their limitations. Although, people lie for various reasons, detecting deception remains challenging. Even professional lie catchers face significant difficulties while analysing the relationship between nonverbal communication and deception. Both technology and humans are prone to errors in this field, which makes the study of lies and deception cues in nonverbal communication an extremely complex phenomenon.

Key words: nonverbal communication, nonverbal cues, deception, lies, lie detection

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1. Introduction

Communication is an interactive process whereby people seek to introduce some form of change in attitude, belief or behaviour. It is a process of sender simulating meaning in the minds of receiver and then having the receiver respond to the messages they have received and interpreted. (Moore et al., 2014). Communication is a reciprocal process. People who communicate respond in similar manners (e.g. positive nonverbal indicator usually elicits a similar positive response in most cases) (Moore et al., 2014). It is important to note that human communication extends far beyond the spoken word. According to Moore et al. (2014), most of the messages that are received and sent are nonverbal. Research shows that people communicate more nonverbally than verbally. This makes the study of nonverbal communication crucial in everyday interactions.

Lies and deception have been a part of human communication and part of everyday life since the beginning of times. The notion that lies can be revealed in nonverbal communication is commonly believed. This notion has intrigued psychologists, laypersons, and lie detecting experts. The face, body, and voice are commonly analysed for lies and deception cues. Analysing the relationship between nonverbal communication and deception is far from straightforward. This paper focuses on nonverbal communication in the context of deception cues.

2. Nonverbal communication

The nonverbal part of communication is that aspect of the communication that deals with the transmission and reception of messages that are not a part of the natural language systems. Any aspect of communication that does not include words is considered part of the nonverbal code (Moore et al., 2014). Moore et al. (ibid.) define nonverbal communication as a process of creating meaning in the minds of receivers, whether intentionally or unintentionally, by use of actions other than, or in combination with, words or language. Nonverbal communication includes norms and expectations usually imposed by society, for the expression of experiences, feelings and attitudes. According to Moore et al. (2014), nonverbal communication may come via the characteristics of the speaker (dress, voice, distance maintained). Nonverbal communication may also come via the characteristics of the receiver (posture, facial expression, distance maintained), and the situation as perceived by the sender and/or receiver

(the context, the environment, the time of the interaction). These examples are all components of the overall nonverbal code, and they include touch and space, physical appearance, gestures, vocalics, and covert body/temporal communication (Moore et al., 2014).

2.1. Emotional meaning of the message

Mehrabian (1986) observed how feelings were transmitted in messages. Mehrabian's research indicates that in face-to-face interactions the total affective (or emotional) meaning may be sent as follows: 38 percent of the emotional meaning of the message is vocal, 55 percent of the emotional meaning of the message is expressed via facial expression, and 7 percent is expressed verbally (Mehrabian, 1968, as cited in Moore et al., 2014). On the other hand, Birdwhistell's and Philpott's approximations state that nonverbal communication accounts for 60 percent to 70 percent (Phillpott, 1983, Birdwhistell, 1970, as cited in Moore et al., 2014). Their statistic is widely accepted in contemporary studies of nonverbal communication. Detecting and interpreting nonverbal cues can be challenging due to their often, unconscious nature. This difficulty extends to biofeedback systems within the human body, which even though subtle, still play a significant role in nonverbal communication. For example, changes in skin coloration, sweating, or slight shifts in muscle tension may go unnoticed by the person experiencing them, but can convey a wealth of information to the observer. The information gained by analysing biofeedback systems can be particularly useful in detecting deception.

2.2. Biofeedback systems

It is important to highlight subcodes that are less apparent and low-conscious because they bring attention to the subtle and often unnoticed changes in nonverbal communication. There are several types of biofeedback systems within the human body. These biofeedback systems affect everyone in a different way. "In particular, the skin, the musculature, heart rate, blood pressure, and brain waves serve as potential biofeedback systems. We mention these because each operates most of the time at or below our consciousness" (Moore et al., 2014, p. 274).

The skin is the most important communication receptor: "…the skin is a tremendous communication receptor. It serves as more than a protection device; it also serves to communicate to the brain differences in the environment as well as the absence or presence of others" (Montagu, 1971, as cited in Moore et al., 2014, p. 274).

The next type of feedback is the muscle system. The muscle system, just like the skin, is an essential function. When an individual is presented someone, they are attracted to, for example, their muscle system changes. The muscle system changes by pulling or pushing. This system changes the individuals' posture and even their pupils. The individual who is engaged in communication can hardly notice these changes. This is what makes these changes effective. (Moore et al., 2014).

Related biofeedback systems are heart rate and blood pressure. The changes in heat and blood pressure are subtle, but they also have a communicative function. These subtle changes, in numerous cases, are interpreted as signs of stress or other negative behavioral indicators. (Moore et al., 2014). Finally, the olfactory system. The olfactory system, particularly olfaction, and perhaps olfactory memory may be biofeedback systems that are in charge of controlling stress, hunger, and even pain. (Moore et al. 2014).

Humans might interpret their or others' biofeedback systems and act accordingly or they might choose to purposefully alter their response in an attempt to deceive the other person. For this reason, part of the feedback system deals with the recognition of deception, according to Ekman (1981). Ekman (ibid.) evaluates this aspect of nonverbal behavior in two related situations: (1) when trying to withhold information, and (2) when trying to present false information in a credible fashion. These instances are labelled as "deceits" (Moore et al., 2014, p. 276). For Moore et al. (2014), a smile can be a good example of deception. A smile may not only conceal true feelings but can also convey fake messages. "False smiles may be distinguished by the muscle used, laterality, location, and timing; they occur too early or too late, last too long, have short onset times, or they do not have a smooth offset" (Moore et al., 2014, p. 277).

3. Deception

3.1. Detecting deception cues in the past

As mentioned in the previous chapters, nonverbal communication consists of many segments, biofeedback system being just one part of it. Nonverbal communication plays a crucial role in analysing and detecting deception. "Homo sapiens is the only species that can lie, deceive and try to imagine what someone has in mind." (Cohen, 2015, p. 10). Consequently, the study of nonverbal communication of lies and deception remains highly relevant today, just as it was in

the past. “The notion that lies are transparent and can be detected through nonverbal behavior dates back a long time. As early as 900 BC, it was claimed that liars shiver and engage in fidgeting behaviors” (Trovillo, 1939, as cited in Vrij et al., 2019, p. 297). Furthermore, Freud wrote: “He who has eyes to see and ears to hear may convince himself that no mortal can keep a secret. If his lips are silent, he chatters with his finger-tips; betrayal oozes out of him at every pore.” (Freud 1959, as cited in Vrij et al., 2019, p. 297). Freud’s and Trovillo’s quotes suggest that humans are unable to keep secrets. Thus, true intentions or concealments are often betrayed by nonverbal cues.

Deceiving and lying to others is a part of everyday life. There are numerous definitions of deception. The Oxford Dictionary defines deception as follows: “the act of deliberately making somebody believe something that is not true (= of deceiving them)”. According to Riggio et al. (1987.), deception is an extremely complex form of social behavior. Furthermore, they note that deception situations can vary greatly, from severe instances like committing perjury in court to minor forms of deception such as pretending to find a bad joke funny. In Ekman’s (1992) definition of a lie or deceit an individual misleads the target intentionally, without informing them beforehand of their intentions, and without the target asking for it explicitly. Mitchell defines deception as “a false communication that tends to benefit the communicator” (Mitchell 1986, as cited in Vrij, 2008, p. 12). Vrij (2008) argues that this definition is at issue because it implies that unconsciously and mistakenly misleading others should also be classified as deception. Some researchers therefore define deception as “an act that is intended to foster in another person a belief or understanding which the deceiver considers to be false” (Zuckerman, DePaulo, & Rosenthal, as cited in Vrij, 2008, p. 13). According to Vrij (2008) and Ekman (1992) the terms lying and deception can be used interchangeably. The repercussions of deception can be severe in some cases (legal penalties, damage to reputation, jail time) or in other cases, deceptions are less harmful but can still impact social dynamics and relationships (Vrij, 2008).

3.2. The psychology of lying

The act of deceiving and lying is deeply rooted in human psychology. According to Riggio et al. (1987), it is undeniable that deception in social interactions is a highly complex phenomenon. The psychology of deception is complex because individuals have different reasons for lying: “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" (Vrij, 2008, p. 7). Thus, the dual nature of deception lies in its ability to both harm and protect. While some lies are indeed selfish and damaging, many are told out of a desire to protect, care for, or maintain harmony with others. A liar has the choice to tell the truth. Misleading the victim is a deliberate act. The liar purposefully intends to misinform the victim. The nature of the lie may or may not be justified, in the opinion of the liar or the community. The dishonest individual may be a good or a bad person that is either liked or disliked (Ekman, 1992). The individual who lies has the option to either lie or tell the truth, and therefore understands the difference between them. Some individuals choose to lie to avoid punishment, while others lie to create a false image of themselves. People commonly choose to lie when they are expected or asked to make a likeable impression. (Vrij, 2008). Some may lie to avoid embarrassment or protect others from the harmful truths. According to Vrij (2008) individuals tell lies even to people they are emotionally close to. Many tell lies at the beginning of a romantic relationship in an attempt to be closer to the other person. They make many untruthful or exaggerated flattering remarks to people they like. Psychologists distinguish between different degrees of lies and types of lies based on their nature and intent. Understanding the psychology of lies and deception is essential in law enforcement, legal proceedings, and everyday relationships.

3.2.1. Types of lies

Psychologists distinguish between outright lies, exaggerations, and subtle lies (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996, as cited in Vrij, 2008). Vrij (2008) defines outright lies as lies in which the information conveyed is completely different from what the liar believes to be the truth. An outright lie is, for example, a person telling their interviewer: "I managed a team of 20 people in my last job" when in reality, they never held any managerial position. The second type of lies are exaggerations. He defines exaggerations as lies in which the facts are over-or under stated. For example, a criminal, during an interview, might say: "I deeply regret what I did. I can't sleep at night, and it haunts me every day" when in fact, they feel little remorse. The third type of lies are subtle lies. Subtle lies are lies which are designed to mislead by manipulating the literal truth. For example, concealing information by evading the question or omitting relevant details is considered a subtle lie. People who lie often prefer concealing information for several reasons: "Once information is provided, lie detectors can

verify the accuracy of this information by searching for further evidence that supports or contradicts it. In the case of concealments, however, no information is given" (Vrij, 2008, p. 17). Furthermore, another reason why people prefer concealing information is because it is relatively easy to do. "When telling an outright lie or when exaggerating, a liar should invent a story that sounds plausible, whereas nothing needs to be invented when concealing information." (Vrij, 2008, p. 17). Moreover, concealing lies is preferred because liars need to keep track of the details they provided in case the topic of the lie comes up on subsequent occasions. If the liar concealed the truth, he does not need to remember anything considering he did not provide any information (Vrij, 2008). Furthermore, if asked to clarify concealed information the liar has the option of claiming to have forgotten to mention it. The liar also has the option of claiming that he or she did not realise that they did not mention the information. However, coming up with a justification or excuse could be challenging if an outright lie or exaggeration is uncovered (Vrij, 2008). Additionally, Ekman (1992) introduces the term "half-concealment", where the truth is told, but only partially. "Understatement, or leaving out the crucial item, allows the liar to maintain the deceit while not saying anything untrue" (ibid., p. 38). These types of lies can be detected through nonverbal cues.

3.3. Detecting deception

Vrij (2008) states that liars may reveal their deceit by behaving nervously and avoiding eye contact. Therefore, just by observing nonverbal behaviour, a potential liar could be spotted. Humans can be good lie detectors, especially when spotting lies in their children, partners, and close friends (Vrij 2008). In theory, lies can be uncovered by examining someone's behaviour, analysing their speech, or measuring their physiological responses. (Vrij, 2008). Detecting deception can be considerably challenging: "People tend to overestimate their own ability to detect lies." (Elaad, 2003, as cited in Vrij, 2008, p. 2). There are instances where deception cannot be detected successfully even by experienced professionals. "Research has shown that, although judges can sometimes detect deception at levels slightly above chance, their detection accuracy is not very impressive. As Kraut reports, detection accuracy ranges from 45-60% where 50% accuracy is expected by chance" (Kraut, 1980, as cited in Riggio et al. 1987, p. 127). Furthermore, "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" (Vrij, 2008, p. 4). According to

Ekman (1992), the lie catcher has a better chance of detecting deception if the deceit involves emotion, and the liar is not a psychopath, well-practiced, or naturally proficient at lying. There are a number of factors that contribute to the relatively low rates of detection accuracy. According to Riggio et al. (1987), humans have a general inclination towards trusting the information that others provide ("the benefit of the doubt"). Secondly, deceivers have learned to control the more prominent clues of deception (particularly verbal cues and facial cues) (Riggio et al. 1987). Liars might monitor and control known cues associated with deception (for example, attempting to control "nervous" behaviors or controlling for lack of eye contact). Thirdly, "potential detectors of deception may not receive any feedback concerning whether their suspicion or trust of another's potentially deceptive communication was accurate" (Riggio et al. 1987, p. 127). Finally, detection accuracy may decrease as a result of what has been called a "demeanor bias". According to Riggio et al. (1987), a "demeanor bias" is an instance in which some people appear more honest than others, simply on the basis of their usual appearance and the way they express themselves. Moreover, lies often remain undetected because people do not attempt to detect them in fear of learning the truth. Vrij (2008) labels this phenomenon *the ostrich effect*. The challenges of detecting deception are closely related to the use of polygraph lie detection method.

3.3.1. The polygraph

"For as long as human beings have deceived each other, people have tried to develop techniques for detecting deception and determining truth" (National Research Council, 2003, p. 11). The polygraph is a commonly used test to determine whether a person is being truthful or not. According to the National Research Council, the polygraph examination consists of a series of yes/no questions. The examinee responds to the given questions while connected to sensors that transmit data on these physiological phenomena by wire to the instrument. The instrument uses analogue or digital technology to record the data. Ekman (1992) notes that the polygraph lie detector operates on the same principles as detecting behavioral betrayals of deceit. Therefore, the polygraph is vulnerable to the same problems. "The polygraph exam does not detect lies, just signs of emotion" (Ekman, 1992, p. 51). The polygraph can record previously mentioned biofeedback systems by measuring the suspect that is attached to the wires from the polygraph. These wires measure changes in sweating, respiration, and blood pressure (Ekman, 1992). Furthermore, "from the charts of those measures in response to questions on a polygraph

test, sometimes aided by observations during the polygraph examination, examiners infer a psychological state, namely, whether a person is telling the truth or lying" (National Research Council, 2003, p. 1). It is important to note that changes in these biofeedback systems (for example, increase in blood pressure or sweating) are not signs of deceit themselves (Ekman, 1992). Moreover, even polygraph practitioners claim that the instrument does not measure deception directly. Rather, the polygraph measures and records physiological responses that are believed to be stronger during acts of deception than at other times (National Research Council, 2003). Additionally, Vrij (2008) argues that it is misleading to call the polygraph a "polygraph lie detector" because a polygraph does not detect lies directly, but only physiological activity that is assumed to be connected with lie telling (ibid.). There are numerous drawbacks associated with the polygraph lie detection method. Firstly, numerous polygraph examiners do not have sufficient training in psychological methods. This accounts for the polygraph examiners' lack of understanding of the basic concepts and requirements of a standardised psychological test (Vrij, 2008). In other words, everything relies on the expertise of the polygraph examiner and their capabilities. The examiners' belief about the examinees' guilt may also influence the polygraph results. The examiner will gather an abundant amount of important details about the examinee (including case-file information). This may cause the examiner to form an impression of the suspect that is being questioned in the pre-test interview where the probable lie and relevant questions are formulated (Vrij, 2008). This subjective approach could impact the results in a negative manner. If the examiner formed an opinion that the subject is already guilty, the questions will reflect that. This will put pressure on a subject that may not even be guilty, which could lead to a false confession. Furthermore, innocent subjects may have large physiological responses to crime-related questions, leading to false positives, or false negatives. "The obvious problem with it is that the crime-irrelevant questions do not provide an adequate control for the emotional impact the crime-relevant questions can have on examinees" (Iacono, 2000, as cited in Vrij, 2008). Additionally, the polygraph lie detection method lacks a strong theoretical foundation, particularly in terms of reliably associating physiological responses with deception, according to the National Research Council (2003).

4. Nonverbal cues to deception

"*How do you know I am lying? Lies, my boy, are known in a moment. There are two kinds of lies, lies with short legs and lies with long noses. Yours, just now, happen to have long noses*" (Collodi, 2022, p. 36).

This well-known quote from the children's book Pinocchio, written by Collodi in 1883 is related to the physical expression of the lie. Every time Pinocchio intentionally lies, his nose grows bigger and bigger. Just as Collodi's metaphor in Pinocchio suggests, when someone is dishonest, their body language may betray them with specific cues. Liars often fail to monitor, control, and disguise all their actions. They likely wouldn't be able to do so even if they tried. It is highly unlikely that anyone "could successfully control everything he did that could give him away, from the tip of his toes to the top of his forehead. Instead liars conceal and falsify what they expect others are going to watch most." (Ekman, 1992, p. 81). Thus, nonverbal cues may expose deceptive behaviour: "… a deceiver makes one of two basic mistakes. The first mistake is termed a "deception clue," an expression or gesture that indicates that a person is engaged in deception but does not reveal the content of deception. The second mistake is termed "leakage" and occurs when a person accidentally reveals information he or she wishes to conceal" (Moore et al. 2014, p. 276). Additionally, Ekman (1992), introduces the term "masking". Masking is an instance in which a person conceals their genuine emotions by displaying a different emotion. Ekman argues that it is much easier to conceal an emotion no longer felt, much harder to conceal an emotion felt at the moment. Furthermore, stronger emotions increase the likelihood of leakage despite the deceiver's best attempt in concealing the emotion (Ekman, 1992). Moreover, putting on another emotion that is not genuine or felt at the moment can help hide the felt emotion being concealed. Additionally, falsifying an emotion can cover the leakage of a concealed emotion (ibid). Liars tend to be careful about their vocal expressions, especially the choice of words, because they draw most attention from others: "words are easy to rehearse, again and again. The speaker has continual feedback, hearing what he says, and thus is able to fine-tune his message" (ibid., p. 82). After vocal expressions, the face draws the most attention. "And even if there are no mistakes in the words, it is the discrepancy between the verbal line and what is revealed by the voice, body, and face that often betrays a lie" (ibid., p. 85).

4.1. The face

"The face is the primary site for the display of emotions. Together with the voice, it may tell the listener how the speaker feels about what is being said—but not always accurately, since faces can lie about feelings" (Ekman, 1992, p. 82.). Furthermore, the face is directly linked with those areas of the brain which is involved in emotion. On the other hand, words are not linked to those areas of the brain. (ibid.). When emotion is induced, muscles on the face begin to move involuntarily. Some individuals can form a habit of interfering with these expressions through learning. Their interference in an attempt to conceal can be pulled off with varying degrees of success (ibid.,). The initial facial expressions that begin when emotion is induced are not purposely chosen (these expressions are also called micro-expressions), "unless they are false. Facial expressions are a dual system—voluntary and involuntary, lying and telling the truth, often at the same time. That is why facial expressions can be so complex, confusing, and fascinating" (ibid., p. 84). According to Ekman (1992), the best way to conceal strong emotions is with a mask. He notes that covering the face or part of it with one's hand or turning away from the person one is talking to usually can't be done without giving the lie away. For Ekman (1992), the best mask is a false emotion. Moreover, the mask that most people frequently employ is a smile. The reason why a smile is the most common mask is because it is the opposite of all negative emotions (fear, anger, distress, disgust, and so on) (ibid).

Additionally, Ekman (1992) states that a smile is selected often because some variation on happiness is the message required to pull off many deceits. Another explanation for the frequent use of the smile to mask emotion is that it is part of the standard greeting and is often required throughout most polite exchanges (ibid). In addition to that, a smile is the easiest facial expression to make voluntarily. Infants can deliberately smile well before the age of one. A smile is one of the first expressions an infant uses intentionally in order to please others. It is one of the earliest expressions used by the infant in a deliberate manner to please others (Vrij, 2008). Throughout life social smiles are often used to portray emotions that may not be genuine, but are deemed necessary or beneficial to display (ibid.). In conclusion, "differences between felt and false smiles include that false smiles are more asymmetrical, appear too early or too late, often last longer, and have a less consistent duration" (Ekman, 1988, as cited in Vrij, 2008, p. 63). Ekman (1992) argues that most facial expressions produced deliberately are asymmetrical.

On the other hand, using some facial expressions in an attempt to deceive someone is harder for most people to falsify. The majority of the population is not capable of voluntarily moving the particular muscles needed to convincingly falsify distress or fear. It is a little is easier to display anger and disgust when they are not felt, but mistakes are frequently made (ibid.). Furthermore, it has been discovered that deliberate and spontaneous expressions are different in numerous ways. They "differ in latency time, onset time (time from the start of the expression to the peak of intensity of that expression), offset time (time from the first evidence of fading of the intensity of the expression until the disappearance of the expression), duration of peak intensity, and overall duration" (Ekman, Friesen, & Simons, 1985; Hess & Kleck, 1990; Hill & Craig, 2002, as cited in Vrij, 2008, p. 66).

Another deception cue may be blushing or facial sweating because these changes are involuntary. According to Ekman (1992), blushing could leak that a liar is embarrassed or ashamed about what he or she is concealing. It could also be embarrassment itself that is being that is being concealed (ibid.).

It is believed that eyes may reveal deceit and true intentions. There are muscles surrounding the eyeballs that modify their shape. "These muscles modify the shape of the eyelids, how much of the white and iris of the eye is revealed, and the overall impression" (Ekman, 1992, p. 141). It is relatively easy for most people to move these muscles deliberately. This makes the changes in eye muscles an unreliable cue to deceit. It is also important to mention gaze behavior. Professional lie catchers and laypersons around the world believe that averting their gaze from the target of deceit is related to deception. This idea is commonly brought up in law enforcement manuals as well (Vrij, 2008). The idea that individuals who lie tend to look upward and to the left is commonly believed. "This idea is derived from the neuro-linguistic programming model, although those who developed this model never referred to a relationship between such eye movements and deception" (ibid., p. 61). Vrij (2008) disproves the idea that gaze behavior is related to deception by listing two reasons. Firstly, he highlights the fact that individuals are skilled and practised at using and controlling their gaze. This means that gaze behavior is not a reliable indicator of deception because it is a well-practised and easy to control behavior. Secondly, gaze behavior cannot be consistently linked to deception due to its connection to numerous factors other than deceit. Lies that are linked with high cognitive load may be associated with a reduction in eye blinking. Additionally, a flurry of blinks occurs directly after the lies are told. (ibid.). There is not enough evidence to suggest that eye

movements can reliably indicate deception. Even those who propose the idea that this relationship exists have never provided data supporting their view. (ibid.).

Because deception is extremely complex, analysing a cluster of different cues may be more effective than focusing on individual cues. “Up to 80% of truths and lies could be detected when a trained observer paid attention to micro-facial expressions” (Frank & Ekman, 1997, as cited in Vrij, 2008, p. 66). Additionally, “even better classifications of truth tellers and liars were obtained when in addition to micro-facial expressions the tone of voice was taken into account. In that situation 86% of the truths and lies could be detected” (Ekman, O’Sullivan, Friesen, & Scherer, 1991, as cited in Vrij, 2008, p. 66). Ekman (1992) supports the important relationship between different cues as well. According to him, the facial clues should be confirmed by clues from voice, words, or body.

4.2. The body

The body is also a significant source of clues for leakage and deception. Though, unlike the face or voice, most body movements are not directly linked with the areas in the brain that is involved in emotion (Ekman, 1992). According to Ekman (1992) keeping track of body movements is not difficult. A person can see and feel what their body is doing. Moreover, he notes that it might be simpler to hide body movements than to hide changes in facial expressions or voice when experiencing emotions, but that most people don’t bother. Individuals have grown up learning that it is not necessary to hide their body movements because people are rarely held accountable for what they reveal in their body actions. The body leaks because it is ignored. Everyone is occupied with observing the face and assessing the words (Ekman, 1992).

Illustrators are a type of body movement that can provide deception cues. They are called by that name because they illustrate speech as it is spoken. For example, using the hands to illustrate what is spoken is considered an illustrator (Ekman, 1992). Vrij (2008) in his research, found that liars make fewer illustrators, fewer hand and finger movements, and fewer leg and foot movements than truth tellers. In those studies where a difference was found, dishonest individuals generally displayed lower levels of leg and foot movements compared to honest individuals. (Vrij, 2008). Furthermore, Vrij (2008) found that most researchers reported that liars change their sitting position more than truth tellers do. However, in most studies where shifting position was measured no difference between truth tellers and liars was found (ibid.).

Therefore, Vrij (2008) concludes that shifting position is not related to deception. In the opinion of Vrij (2008), finger and hand movements seem to have the strongest connection with deception. The research Vrij, Winkel, & Akehurst conducted in 1997 (as cited in Vrij, 2008), showed that 64% of participants showed a decrease in hand/finger movements during deception, whereas 36% showed an increase of these movements during deception. (Ekman (1992) found that liars who are not rehearsed, who did not practice the lie, who didn't anticipate the questions or timing, will show a decrease in illustrators. Vrij (2008) explains that "rigidity resulting from the decrease in illustrator, hand/finger movements, and leg and foot movements typically exhibited by liars could also be the result of their failing to control their behaviour convincingly" (ibid., p. 58).

The next type of body movements are called manipulators. "Manipulators include all those movements in which one part of the body grooms, massages, rubs, holds, pinches, picks, scratches, or otherwise manipulates another body part" (Ekman, 1992, pp. 109-110). It is a common belief that these body movements could reveal that a person is in distress and therefore lying, and so a motivated liar will try to hide them. Ekman (1992) argues that manipulators are unreliable as signs of deceit, for the following reason. Manipulators may indicate opposite states, discomfort (for example, fidgeting), and relaxation (for example, a person letting their hair down). Analysing a cluster of different cues may be more effective than focusing on individual cues in this domain as well. When a combination of cues is considered together, a pattern indicating deception might emerge. Vrij and his colleagues (Vrij, Edward, Roberts, & Bull, 2000, as cited in Vrij, 2008) found that on the basis of a combination of four nonverbal behaviours (illustrators, hesitations, latency period, and hand/finger movements) they could correctly classify 70.6% of participating truth tellers and 84.6% of liars. They conclude that any of these behaviours individually resulted in much more disappointing results.

4. 2. 1. Clothing

Vrij's (1993) study revealed that clothing can affect suspicion towards deceptive behavior. As mentioned previously, physical appearance is part of the nonverbal code, and therefore important to note in this context. In his study, Vrij showed Dutch police detectives video fragments of a series of truth tellers and liars. After each fragment he asked the police detectives whether the subject was lying or not. The results showed that the detectives were impacted by the attire of the mock suspects. The participants who portrayed false suspects and were untidily dressed were considered more suspicious than those who were dressed in a neater manner.

(Vrij, 2008). Analysing a person's choice of clothing may not be the best clue to deception. Judging deception based on clothing is highly subjective and may lead to inaccurate conclusions.

4.3. The voice

The voice refers to all aspects of speech aside from the actual words spoken (Ekman, 1992). "The voice, like the face, is tied to the areas of the brain involved in emotion. It is very difficult to conceal some of the changes in voice that occur when emotion is aroused" (Ekman, 1992, p 84). While liars may try to carefully monitor what they say to ensure their lies are convincing, they may not be as successful at controlling how they sound when they speak. Ekman (1992) and Vrij (2008) claim that the most common deception cues are pauses. They note that liars may include longer pauses in their speech than truth tellers. The pauses might be either too lengthy or too frequent. Another vocal deception cue is hesitation. Hesitating at the start of a speaking turn, especially if the hesitation occurs when someone is responding to a question, may stir doubt. The same goes with shorter pauses during the course of speaking if they occur often enough (Ekman, 1992). On the other hand, Vrij (2008) found that in some studies liars included more hesitations in their speech than truth tellers. However, in in other studies liars hesitated less than truth tellers. Furthermore, speech errors may be a deception cue. Speech errors include nonwords, such as "ah," "aaa," and "uhh"; repetitions, such as "I, I, I mean I really . . ."; and partial words, such as "I rea-really liked it." (Ekman 1992). In addition to that, the voice pitch may serve as a deception cue. Ekman (1992), in his research, found that pitch becomes higher when the subject is upset (for example, a feeling of anger or fear), and that there is some evidence that pitch drops with sadness or sorrow. On the other hand, scientists have not yet determined whether pitch varies with excitement, distress, disgust, or contempt (Ekman, 1992). Changes in the voice produced by emotion are not easy to conceal, "If the lie is principally about emotions felt at the very moment of the lie, then there is a good chance for leakage" (Ekman, 1992, p. 93). Vrij (2008) also points to a trend where liars speak with a higher pitched voice than truth tellers. "These differences in pitch between truth tellers and liars are usually very small, only a few Hertz, and therefore only detectable with sophisticated equipment" (Vrij, 2008, p. 55). Moreover, he also concludes that in numerous studies liars waited longer before giving an answer than truth tellers (Vrij, 2008). As mentioned in previous chapters, analyzing a cluster of clues may be more effective than focusing on individual clues.

“Conversely, examining a cluster of verbal cues has yielded successful classifications in 67% to 80% of truth tellers and liars” (Bond & Lee, 2005; Colwell, Hiscock, & Memon, 2002; Newman, Pennebaker, Berry, & Richards, 2003; Zhou, Burgoon, Twitchell, Qin, & Nunamaker, 2004b, as cited in Vrij, 2008). The assumption that liars can consistently monitor and manage their speech is not correct. Even skilled speakers may unintentionally leak signs of deception through their verbal responses. This highlights the importance of analysing a cluster of clues, for example, analysing vocal cues alongside other nonverbal cues when detecting lies.

5. Conclusion

People communicate both verbally and nonverbally in their everyday lives. The majority of emotional meaning is transmitted nonverbally. This makes the study of nonverbal cues for deception extremely important for analysing the discrepancy between nonverbal cues that are induced by emotion. Since the old times, it was commonly believed that the truth can be betrayed by nonverbal cues. People lie for various reasons, such as avoiding punishment, avoiding embarrassment, protecting others, or presenting a false self-image. Deception has a dual nature. Lies can both harm and protect. Analysing the different types of lies (outright lies, exaggerations, concealments, and subtle lies) shows the intent and impact of deceit. These motives are reflected in the nonverbal communication, which includes the face, body and voice. However, the process of detecting deception is extremely complex. Even professional lie catchers struggle with accuracy. Polygraphs are commonly used in attempts to detect lies by measuring physiological responses. The reliability of the polygraph is limited. The polygraph does not directly measure deception. It measures the physiological changes associated with deception. The accuracy of the polygraph relies heavily on the examiner and their expertise. The polygraph includes other significant drawbacks (such as false positives and negatives).

The face is the primary site for displaying emotions, both genuine and false. There is difference between voluntary and involuntary facial expressions. For example, a false smile might be asymmetrical and differ from a felt one in timing and duration (Ekman, 1988, as cited in Vrij, 2008). Additionally, the eyes are seen as an indicator to deception. Research shows that eye behavior and gaze behavior are unreliable cues to deception because they can be easily controlled (Ekman, 1992, Vrij, 2008). Same goes with any other cue that can be easily controlled. The body can also play a significant role in detecting deception cues. It was shown

that liars may exhibit fewer illustrators. (Vrij, 2008). They may also exhibit manipulators, which are not reliable cues to deception, as they indicate both discomfort and relaxation (Ekman, 1992). Clothing can also influence perceptions of deception, though this may lead to incorrect judgements because of subjectivity (Vrij, 2008). The voice can serve as another indicator of deception cues. Changes in pitch, pauses, and speech errors are often associated with lying (Ekman, 1992, Vrij, 2008). No single nonverbal cue can reliably prove that a person is being deceitful. Evidence supports that examining a cluster of nonverbal cues is more informative for detecting deception and studying their patterns than studying each cue separately.

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