

Study on peoples ability to detect deception



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Detecting lies is difficult to most. However, people who are being deceptive display distinct behaviors compared to that of truth tellers (Arij, 1995). The skill of detecting deceptions is especially important for people such as police officers, customs officers, prison guards and prisoners, who may frequently encounter deceptions (Vrij & Semin, 1996). Research on detecting deception is essential for the use in above areas, as well as in sales strategies or communication skills for interpersonal relationships. In social psychology, deception is defined as an intended attempt of speakers to provide recipients untruthful information (DePaulo & DePaulo, 1989).

There is a notion that nonverbal behavior is the key to detecting deceptions. Nonverbal behavior is defined as communication, which humans act other than speech (Harrison, 1973). However, people are often unsure of the difference between perceived and actual indicators of deception. According to Vrij and Semin (1996), actual indicators of deception are behaviors that have an actual association with deception, while perceived indicators of deceptions are those that people associate with deception, no matter if they have actual correlations with deception or not. Research has shown a higher pitched voice as an example of actual indicators of deception (DePaulo, 1992; DePaulo, Stone, & Lassiter, 1985; Ekman, 1989; Zuckerman, DePaulo, & Rosenthal, 1981, cited in Arij, 1995), and it is one of the most reliable nonverbal cues in detecting deception, as Arij (1995) explains that it is difficult for people to control their voices. Emotional approach explains this as well that physiological arousal of people caused from deception will lead to nervous behavior such as higher pitched voice (Siegman, 1985, cited in Avij, 1995).

While higher voice pitch has been confirmed as a good actual indicator of deception by previous studies, it is still controversial whether observers can detect deception with the accuracy rate greater than chance. In general, the rate is greater than chance with around 55% level of detecting deception (Kraut, 1980, cited in DePaulo & DePaulo, 1989). However, this is not the case in some previous studies. DePaulo and DePaulo (1989) observed the accuracy rate of detecting deception in simulated sales communications between retail salespersons and automobile customers and the rate was below chance. It was suggested that this result might have occurred from the fact that salespersons are usually well trained and confident for their communication skills, which includes being deceptive in some circumstances.

To test the accuracy level of detecting deception, it is more appropriate to use communicators who have not trained to be good at deception and have relatively the same level of communication skills as observers. Thus, this experiment proposes to use students as both communicators and observers to test the accuracy rate. Since the high pitch voice is already known as a good behavioral cue for detecting deception, this will be used in this experiment to investigate if people who rely on it can detect deception more accurately.

In the experiment, students were tested for the ability of detecting deception and truth, while listening to other student's true and deceptive stories. The aim of the present experiment was to observe if people can detect deception better when they are confident about their detection, and whether they can do it better by relying on the voice pitch as a nonverbal cue. It was predicted

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that if observers can detect deception or truth, their accuracy would be greater than chance, and those who rely more on voice pitch would get higher accuracy of detecting deception.

Method

Participants

Participants were 360 female, 136 male and one non-specified psychology students ($M = 19.35$ years, $SD = 3.13$) with an age range of 17 to 44 years. Participants were enrolled in the University of Queensland St. Lucia Campus and participated in the experiment as part of an undergraduate psychology tutorial exercise.

Design

The study used an experimental design with non-random allocation to test the effect of the independent variable (truthful or deceptive event description) on the dependent variable (accuracy of detecting deception) in the first hypothesis, and the measured variable (degree of reliance on voice pitch) on the dependent variable (accuracy of detecting responses) in the second hypothesis.

Materials

Each of the participants were given two sheets of paper, one containing tables to record their deception prediction and the accuracy rate, and one with a table to indicate age, gender, the accuracy rate and if any of the nonverbal cues listed (eye gaze, voice pitch and hand movement) were used

for detecting deception. The nonverbal cues were measured with a five-point scale (1 = did not use at all; 5 = did use all the time). Other materials included a pen, computer screen and projector.

Procedure

Participants were instructed by an experimenter to form a group of four. Each participant took turns to talk about two events that were either truthful or deceptive. Other participants in the group, while listening to these events, tried to detect deceptions and recorded their prediction on the sheet. Participants then informed each other if they were being deceptive or truthful for each event. After the experiment, participants were instructed by an experimenter to record their data on the observation sheet, and rate whether they were paying attention to the three nonverbal cues (eye gaze, voice pitch and hand movement).

Results

Results were collated from the participants across tutorial groups. For the accuracy rates, statistical tests against 0.5 (chance) were conducted and indicated that participants were significantly better than chance at detecting truthfulness ($M = 0.69$), but worse than chance at detecting deception ($M = 0.44$). For the use of nonverbal cues, there was no significant correlation between nonverbal indicators and truth accuracy. However, voice pitch was significantly positively correlated with accuracy in detecting deception. Participants who paid attention to voice pitch were better in detecting deception than those who did not pay attention to voice pitch.

Discussion

It was hypothesized that the accuracy rate for detecting truth or deception would be above chance when observers could detect whether communicators were telling truth or not (hypothesis one), and that those who rely more on voice pitch will have higher accuracy in detecting deception and truth (hypothesis two). Hypothesis one was partially supported by the result as it being only significant for the detecting truth part. Hypothesis two was also partially supported as the relationship between the use of voice pith and the accuracy rate was only significant for detecting deception.

For hypothesis one, participants' accuracy of detecting deception was below chance, which does not support the hypothesis and the previous study that indicated the rate of detecting deception is generally above chance (Kraut, 1980, cited in DePaulo & DePaulo, 1989). However, this result supports another study conducted by Vrij and Semin (1996) on the accuracy rate of student's beliefs on behavioral indicator of deception, which showed the accuracy rate was below 0.5. On the other hand, participant's accuracy of detecting truth was above chance as hypothesized. The results seem to indicate that observers tend to rate communicators as more honest than deceptive. This trend corresponds with the finding of the previous study that there is often an overestimation of the communicator's honesty, which is one of the most robust findings in experiments relating to deception (DePaulo, Stone & Lassiter, 1985, cited in DePaulo & DePaulo, 1989).

For hypothesis two, the results showed the significant correlation between voice pitch and accuracy rate of detecting deception. This supports the idea stated by Arij (1995) that the voice pitch is hard to control, thus is a good indicator of deception. It is also consistent with the idea of emotional approach on the relationship between deception and higher voice pitch (Siegman, 1985, cited in Avij, 1995).

The study was inexpensive; time efficient with a simple procedure, conducted in a face to face situation, and used a large sample. However, all the participants were university students taking psychology, who probably had similar backgrounds regarding to the experience in detecting deception, thus possibly making bias in the results. In the future study, people from more diverse backgrounds could be used as participants.

Another limitation of this research was the way the use of voice pitch was measured. Participants were asked to indicate if they used voice pitch as a cue of detecting deception with a five-point scale, however, actual voice pitch of communicators were never recorded (or measured). Therefore, it was not measurable if there was a change in communicator's voice pitch, thus impossible to tell if observers were detecting the change in voice pitch accurately and using it as a correct cue when they indicated the use of voice pitch as a cue of detecting deception. Therefore, when further studies are to be conducted, actual voice pitch should be recorded to ensure the observer's accurate perception and use of voice pitch as a lie detecting cue.

Detecting deception is an essential skill for people such as prison guards, police detectives and customs officers who are required to detect lies as

their daily jobs. This research suggested that the use of voice pitch change as a cue of detecting deception may help to increase the probability of accurate lie detections in situations such as police interviews. In addition, detecting deception is one of the important communication skills in everyday life in areas such as sales interactions and interpersonal relationships. A good understanding of the relationship between deception and nonverbal cues could help to prevent and reduce crimes in society, as well as improving people's social interactions with others.

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