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Effects of General and Embodied Situational Trust on the Accuracy of Judging Lies and Truths

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Abstract

People do not like if they are lied to, so they try to detect lies on an everyday basis. Previous research focused on factors that might influence the ability of detecting lies. This present study investigates whether there is a link between the factor trust and the accuracy of detecting lies as well as truths. To study this, 93 participants watched videos in which people told the truth or a lie and were asked to assess whether the people were lying. The study was an experiment with a between-groups design. The accuracy of truth and lie detection, the perceived trust while watching the videos and the general level of trust were measured. The situational trust was meant to be induced by manipulating facial expressions following the theory of embodiment. To measure the general level of trust the General Trust Scale was used. It seems that, in specific situations, trust has a positive effect on the accuracy of judging truths, whereas general trust has a negative effect on the accuracy of judging lies. The results did not deliver evidence for the effect situational trust has on the accuracy of judging lies or the effect of general trust on the accuracy of detecting truths. With these insights, there is given a better understanding of the detection of truth and lie in everyday life and a good starting point for future research.

Keywords: Trust, lie detection, truth detection, accuracy of judgement, embodiment

Samenvatting

Mensen houden er niet van belogen te worden, daarom probeert iedereen dagelijks leugens te detecteren. Eerder onderzoek was gericht op factoren die het vermogen beïnvloeden om leugens op te sporen. Deze studie onderzoekt of er een verband bestaat tussen de factor vertrouwen en de accuratie van het detecteren van leugens en waarheden. Om dit te onderzoeken hebben 93 deelnemers video's bekeken waarin mensen de waarheid vertellen of liegen en werd de deelnemers gevraagd of zij dachten dat de mensen liegen of niet. De studie was een experiment met een tussen-groep design. De accuratie van de waarheid en leugen detectie, het ervaren vertrouwen tijdens het kijken naar de video's en het algemene niveau van vertrouwen werden gemeten. Het situationele vertrouwen van de deelnemers werd gemanipuleerd door gezichtsuitdrukkingen volgens de theorie van embodiment. Om het algemene niveau van vertrouwen te meten werd de General Trust Scale gebruikt. Het bleek dat in bepaalde situaties vertrouwen een positief effect had op de accuratie van het beoordelen van een waarheid, terwijl vertrouwen in het algemeen een negatief effect had op de nauwkeurigheid van leugen detectie. De resultaten ontkrachtigen dat situationeel vertrouwen effect heeft op de accuratie van het beoordelen van leugens en dat het algemene vertrouwen effect heeft op de accuratie van het opsporen van waarheden. Met de resultaten van deze studie is beter inzicht gecreëerd in de factoren die een rol spelen in het opsporen van waarheid en leugens in het dagelijks leven. Ook is er een goed uitgangspunt voor toekomstig onderzoek opgesteld.

Keywords: Vertrouwen, leugen detectie, waarheid detectie, accuratesse van het oordeel, embodiment

Introduction

When children are asked whether lying is wrong they will most likely say that it is. However, first aspects of lying are already found in children in a young age. Examples for this are crying when nothing is wrong or a fake laughter just to receive attention from the parents. People tend to lie very often. Research has shown that in a conversation of ten minutes the average person lies approximately three times (Feldman, Forrest, & Happ, 2002).

There are many different reasons for people to lie. For example they might just tell polite lies of little consequences, so-called white lies. White lies are lies that help others maybe even at the expense of oneself or lies that help both others and oneself (Erat & Gneezy, 2012). People might also tell lies on behalf of impression management (DePaulo et al., 2003). In this case they want to create a positive image of themselves or others. Additionally people could lie to avoid humiliation (Carter & Weber, 2010). Opposed to these small lies, there are also black lies with great consequences for the receiver of a message. These lies might benefit the person who tells the lie but have a negative impact on the person who the lie is directed to (Rosaz & Villeval, 2012). To protect themselves from these lies and the resulting consequences people try to detect dishonesty even though they are biased as the following will show.

People in general tend to think that a liar shows a specific kind of behaviour and that the knowledge of this behaviour pattern helps them to detect lies (Clifford, 2001). Clifford stated that receivers from messages use subjective mental models to determine whether someone is lying. Mental models are individual thought processes about the world. The mental model of a person contains information about how something works in the surrounding world with multiple relationships in it. Mental models can be used to solve problems for example the problem of identifying a liar. People then follow their mental model of what a liar looks like and how he behaves.

These mental models that are important in lie and truth detection are triggered by subjective and objective cues. Subjective cues are based on observer's impressions, whereas objective cues include behaviour that can be precisely defined and measured (DePaulo et al., 2003). People compare for example subjective cues as the frequency of movements or tone of the voice to discriminate between lies and truths. Other subjective cues that are taken into account when people develop their mental model of a liar are the assumptions that people tend to make more negative statements, seldom refer to themselves and answer short and indirect when they are lying (Clifford, 2001). The findings of Mann et al. (2013) deliver more support for the theory of a mental model of what a liar looks like and thus the subjective side of the perception of a statement. Eye contact for instance is seen as an indicator for a truth but if it is hold for a little bit longer than normal the statement is perceived as a lie. Opposed to these subjective cues, Mann et al. (2013) also found evidence for the objective side of perception. Here, factors as spatial, temporal and action information play a role in the perception of a statement. These factors can be measured for example in duration or counts what makes them objective assessable. Even if people differ in the impressions they have of a person and thus the subjective cues, they would still rate the objective cues the same because they can be defined precisely and assessed objectively.

It was also found that the truth is detected better than lies (Clifford, 2001). Bond and DePaulo's (2006) findings stand in line with this. They found that receivers of messages tend to judge questionable statements more as true than truthful statements as lies what raises the possibility of a truth-bias. Nevertheless, human lie detection is not greater than mere chance; the overall accuracy in detecting lies is just 54% (Levine & Bond, 2014).

There are factors that can influence the accuracy in judging the truth and lies. These are for example poor evolutionary preparation and socialization to overlook lies (Ekman, 2001). This happens when for example parents teach their children to ignore lies, e.g. when a

child knows that Santa Claus is not real but is told not to tell other children. Inadequate feedback from errors is a variable as well, thus, not knowing whether the judgment was wrong or right or getting wrong feedback. However, this study focusses on the psychological benefit of trust which seems to be an important variable regarding the accuracy (Ekman, 2001). It is expected to find evidence for the effect of distrust on the accuracy of judging truthful and false statements. Thus, it is expected that people are significantly more accurate in judging truths and lies when they trust the other person opposed to people that do not trust the other person. It is important to do research on this topic, because with insights gained in this study people might be able to improve their accuracy when it comes to lie detection. This again might help to prevent negative personal outcomes as were mentioned earlier. From the literature reviewed above the following main research question resulted:

> Are observers less accurate in judging whether someone is lying under conditions of distrust than under conditions of trust?

Before a closer look is taken on factors that influence accuracy it should be defined what accuracy means in this study. Accuracy means the correct judgement of a lie as lie and a truth as truth. Thus, the absence of errors. Though, there are different types of errors which might play a role in this study. A Type I Error is a false positive, where something is reported even though it is absent. This is also called a false alarm (Lieberman & Cunningham, 2009). In this study this means that a truth is perceived as a lie; the stimuli of a lie is absent but reported. A Type II Error, however, is a false negative, where a stimuli is given but not reported (Belknap, Mitchell, O'Toole, Helms & Crabbe, 1996). In this study this would be a missed lie, thus, a lie perceived as truth. It is important to make a distinction between the two different error types of a Type I Error and a Type II Error because they have different effects. The effects of a Type I Error may have consequences in a specific situation but these errors

are self-erasing because of the given feedback and thus will not replicate (Lieberman & Cunningham, 2009). Type II Errors however, are often not reported and will occur again because of the missing feedback.

In order to get insight in whether observers judge with a different accuracy when they trust the source opposed to when they do not trust the source it is important to understand peoples' behaviour in conditions of trust and distrust. In general, people have a tendency to weight negative hints greater than positive ones if both are present. Because of these hints people are likely to develop a negative view of someone they do not know. This is due to the assumption that other people just do what serves themselves, thus, acting in self-interest (Van Lange, 2015). If people do not trust the source they are even more suspicious and try to protect themselves from deceit because they do not believe the transmitter of the message. Receivers think about the negative consequences of a missed lie and perceive these consequences as very high. Schul, Mayo and Burnstein's (2004) findings show that receivers then activate message-incongruent associations. These associations causes them to develop a lie-bias (Street & Richardson, 2015).

The lie-bias might influence distrusting people and let them think that most of the people around them are liars because the lie-bias just let them perceive signals that stand in line with the assumption that the other person is lying and they are blind to signals that induce the truth. This is because in these untrustworthy contexts they have different encoding strategies for messages than in trustworthy contexts (Schul, Mayo & Burnstein, 2004). By this means, if people do not trust the source they are more likely to report a Type I Error, where a truth is perceived as lie. However, they are more likely to report a lie when there actually is a lie because of their lie-bias. Vice versa, this means that in trustworthy contexts people access the dominant meaning of the truthful message and perceive the message as true. Though, they are more likely to miss a lie and report a truth what would be a missed stimuli and a Type II Error in this study. This gives hypothesis one and two:

H1: Participants with a higher level of trust are more accurate in judging truths than participants with a lower level of trust.

H2: Participants with a higher level of trust are less accurate in judging lies than participants with a lower level of trust.

Research by Carter and Weber (2010) has shown that people who have a high level of trust in general are more likely to develop strategies to detect lies, as for example mental models that have been mentioned earlier. Because of their general trust they are assumed to have experienced consequences of undetected lies. If people trust others easily others might misuse this trust and deceive the trusting person. The deceit might result in doubts in one's personal worth, an overall sense of betrayal (Meltzer, 2003) or materialistic loss like the loss of money. Due to these consequences people with a high level of trust in general did not become less trustful but developed strategies to discover liars from people that are telling the truth. Thus, trust has an influence on the strategies that are used to discover lies. In this research it is investigated whether these strategies have an influence on the accuracy of judging the truth and lies. Because of their experience in using lie-detection strategies it is assumed that trustful people will be more accurate in judging the truth and lies. This gives two more hypotheses:

H3: Participants' general level of trust has a positive influence on the accuracy of judging truths.

H4: Participants' general level of trust has a positive influence on the accuracy of judging lies.

For this study it is important to understand how embodiment works and especially how to influence trust by manipulating facial expressions. Embodiment refers to the embodied

mind thesis, a theory that emphasizes the role that facial expressions or body gestures have in shaping thoughts. The embodied mind thesis states that the human cognition can be influenced by the body (Lakoff & Johnson, 1999). Changes of the body, e.g. changes in the position of the body, can change the mental perception of the surrounding world. Wilson and Foglia (2011) put it as cognitive features that are embodied, meaning that characteristics of the physical body have a significant effect in the cognitive processing of a person.

Research has shown that peoples' preferences and attitudes are influenced by facial expressions and emotional gestures. Niedenthal, Barsalou, Ric and Kraut-Gruber (2005) found that when peoples' motor movements are hindered, their experience of emotions is disturbed and their processing of emotional information is disrupted. By this means, if the facial expression cannot reproduce what a person feels, they struggle with their feelings. If people than put on a specific facial expression the facial expression has an influence on their feelings and emotions. Or in other words, if people put on particular facial expressions that are emotion-specific they experience the associated emotion (Niedenthal, 2007). This research focusses on the factors of trust and distrust. According to Niedenthal a suited way to induce distrust using embodiment is to let people contract the eyebrow muscles. It is also found that trust can be induced by widely opening the eyes.

To get insight in the influence of trust and distrust on the accuracy of lie detection it is chosen for a cross-sectional experiment under the two conditions of trust and distrust. Participants were shown eight videos in which a lie or a truth were told. After these videos they had to indicate whether they trust the person in the video and whether the person in the video told the truth or a lie. Later on they had to fill out a questionnaire about their general level of trust.

Method

Design and Participants

This study is a cross-sectional experiment with a between-groups design. Data collection took place between 25th of April and 13th of May, 2016. Before the experiment took place, several limitations for the sample have been set: Participants had to be at least 18 years old. Having set this limitation parental consent for participation was not necessary. Additionally, participants had to be able to understand English in order to be able to understand the videos, answer the questions about the videos and fill out the questionnaire. Besides these, no limitations have been set.

Participants were asked to participate in University buildings and through "Sona-systems". For taking part in surveys students of the University of Twente get credits they need to collect in order to complete their study. Participants received 0.5 credits for participation via Sona-systems.

A total of 93 people participated in this study. No data of participants was assumed to be not valid. Every participant followed the instructions. Of the 93 participants, 62 (66.7%) were female and 31 (33.3%) were male. 30 (32.3%) people of the sample were Dutch and 63 (67.7%) German. Participants were between 18 and 54 years old, the average age was 25.23 (SD = 9.29).

The participants were assigned to one of two conditions. The first condition is the condition 'Distrust'. In this condition participants were asked to contract their eyebrows while they watch the videos. Participants in the second condition 'Trust' were asked to pull up their eyebrows while watching. These conditions are handled as independent variables in this study.

The variable 'Accuracy' measured the number of correct identified lies and truths. The variable 'General level of trust' was an independent variable that deals with the level of trust that participants perceive every day. The independent demographic variables asked about the age, gender and nationality of the participants. The methods with which these variables were measured are described in the material section in greater detail.

Materials and measures

The survey consisted of two parts. The first part focused on the ability of judging the truth and lies. For this, eight videos were shown to the participants. The videos were produced by Ten Brinke, Stimson and Carney (2014). In the videos a researcher asked college students what they had done while he was out of the room. Before he went out of the room he told them that there are 100 dollars between books on a shelf and that they had to do tasks on a computer in that room. The talk before he left the room is not seen in the videos. When he came back he asked the students a series of questions which they answered. He started with the two questions "What are you wearing today?" and "How is the weather like outside today?". He then went on to ask them about what they had done while he was out of the room, if they thought about stealing the money and whether they have done so. A list of all questions asked in the videos can be found in appendix A.

All participants and the researcher spoke English. The videos were about one to two minutes long and were each just showing one student in front of a blank wall. The videos that were shown to the participants were distributed equally regarding demographic variables. In four videos there was a female student and in four videos there was a male student. The truth was told by two male students and two female students. When it comes to lies there was the same distribution.

There were two questions asked in this first part of the survey. The questions were 'In how far do you think the person in the video told the truth or a lie?' and 'How much do you trust the person in the video?'. Below, all variables that were measured with these questions are listed:

1) Truth versus lie. These two variables were assessed with one question in this survey. After seeing each video participants were asked in how far they think the person in the video told the truth or a lie. They answered the question on two 7-point Likert-scales where 1 indicated 'Not the truth' and 7 indicated 'Truth' respectively 'No lie' and 'Lie'. With these measurements three variables were computed. The first was the accuracy of detecting lies. This was done by calculating the average of the lie-score of each lie-video and the reversed truth-score of each lie-video, to determine the accuracy with which a lie has been detected. Thus, the higher the score the more accurate would participants judge lies. A variable that describes the accuracy of detecting truths was added as well by calculating the average of the truth-score of each truth-video and the reversed lie-score of each truth-video. Last but not least, the variable accuracy (for the general accuracy during the study) was computed by calculating the average of the scores. The three variables dealing with accuracy are seen as dependent variables.

After creating the new variables, the reliabilities of the survey's subscales were calculated with SPSS. The value of Cronbach's alpha estimates the lower limit of the reliability of the test and examines whether the items form a reliable scale. All Cronbach's alpha values of the subscales can be found in appendix B. The subscale accuracy turned out to have a low reliability. This is the reason why in the following analyses it was chosen to use the subscales accuracy of detecting lies and accuracy of detecting truths separately instead of the combined measurement accuracy. In doing so, reliable statements could be made to answer the research question.

2) Trust. As well as for the 'Truth versus Lie' variable, participants were asked a question about their perceived trust after each video. They should assess in how far they trust the person in the video. Again, they answered the question on a 7-point Likert-scale where 1 indicated 'Not at all' and 7 indicated 'Completely'. The dependent variable of the situational trust (for the trust perceived during the study) was created by calculating the average. In the following it will be referred to this variables as trust. The Cronbach's alpha value for the scale of situational trust shows that the items of the scales measured the same construct. Thus, for example, high scores on the trust scale meant experiencing feelings of high trust while watching the videos.

The second part of the survey focused on the participants' general level of trust. This part consisted of a questionnaire that measured the level of general trust and the demographic variables:

3) Level of general trust. To measure the level of general trust within an individual, the General Trust Scale (Yamagishi &Yamagishi, 1994) has been used. This questionnaire consists of six items. Three of these items are related to the "belief that [others are] benevolent [persons]" and the other three are related to the "belief that caution is needed in dealing with others". The items could be answered on a scale from 1 to 5, with 1 implying the lowest level of agreement, and 5 implying the highest level of agreement. Item 4 is a reverse scored item. The score of the general level of trust has been calculated by reversing the score of item 4 and generating the average of the item scores of the whole scale. Thus the respondent could score 1 to 5 for general trust. The higher the respondent scored, the higher the level of trust. The General Trust Scale has been chosen to measure the predictor variable general level of trust for various reasons. First, the scale had a reliability of 0.63, which implies the measurements will be consistent. Second, the General Trust Scale is easy and quick to fill out for participants.

4) Demographic variables. The demographic variables were measured with a questionnaire in order to receive insight in possible underlying factors.

Because this study is about detecting the truth in videos, a laptop was required to show the videos. Next to this, headphones were used to assure that the participants were not distracted by surrounding noises.

Procedure

First, participants were informed that the survey is about the ability of detecting the truth of stories that are told in videos. They were also informed that they were to be seen 8 videos. They were told that after each video they were to been asked two questions and after seeing all the videos and answering the questions about them they were to fill out a questionnaire. They were told that participation in this survey would take approximately 15 minutes and that their results will be handled anonymously.

Then participants were asked to do certain facial expressions depending on the condition to which they were randomly assigned. In the condition of distrust they were asked to pull their eyebrows together whereas in the condition of trust they were asked to heighten their eyebrows. While the participants were doing the tasks an observer was present to check whether they follow the instructions. By doing so it can be assured that participants were doing the tasks adequately. The participants were shown eight videos through which they had to continue showing the assigned facial expression. After each video they were asked to assess the previous video regarding perceived trust and the truthfulness of the story. Next, the participants were asked to fill out a questionnaire about their general level of trust. Some demographic data is also requested before the survey is done.

In the end participants were debriefed. They were thanked for participating and told that in this study it is investigated whether facial expressions have an influence on the trust

people have in a person. Additionally they were told that it was investigated whether trust has an influence on people's ability to detect lies.

Results

Skewness

The data was checked for normal distribution. Therefore, histograms were created and the skewness for each variable with each score of the subscales was calculated. With these analyses it was shown that all the subscales were normally distributed (table 1). For all variables, the level of skewness lay between -1 and 1, so they were not too much skewed and could be used. Thus, the data could be further analyzed without being transformed.

Table 1
Skewness per Subscale

	Skewness	*SD*
General Trust Scale	-.22	.25
Trustscore	-.08	.25
Accuracy Lies	.03	.25
Accuracy Truths	-.17	.25

Manipulation check

A manipulation check was performed in order to know if the manipulation was successful. This was done with an independent sample t-test with the condition as independent variable and the perceived trust per video as dependent variable. The results show that the condition had no significant effect on the perceived trust per video, $t(91) = -1.05$, $p = .30$. Because of

this it was chosen to take a look on the condition of trust and distrust and the actual perceived trust during the study separately in order to gain insights regarding hypothesis one and two.

Sample descriptive

The sample descriptions with the means and standard deviations of age, gender and nationality and the descriptive statistics of each subscale (Appendix C) were calculated. To be able to make statements about high and low accuracy scores the average scores were calculated. The scores were then compared to the focal point of the scale. The accuracy of detecting truths and accuracy of the people in general appeared to be quite high.

Hypothesis 1

The first hypothesis that a closer look was taken on was 'participants with a higher level of trust are more accurate in judging truths than participants with a lower level of trust'. A significant effect of the condition on the judgement of truths was found, $t(91) = -4.11$, $p < .001$. This shows that people in the condition of trust are more accurate in judging the truth ($M = 4.73$, $SD = .92$) than people in the condition of distrust ($M = 3.85$, $SD = 1.12$).

Secondly, the relations between the level of situational trust and the judgement of truths were examined by calculating a Pearson's correlation. A significant correlation was found between the trust while watching the videos and the accuracy of detecting truths ($r = -0.56$, $p < .001$) which suggests that the more a person trust someone in a specific situation the more accurate are his judgements of the truth.

Hypothesis 2

Hypothesis 2 ('Participants with a higher level of trust are less accurate in judging lies than participants with a lower level of trust') was explored with an independent sample t-test (Table 2). To get more insight on this hypothesis an independent sample t-test on the effects of the condition on the judgement of lies was done. The results can be found in table 2 and showed that there is a significant effect of the independent variable trust versus distrust, $t(91) = -5.24$, $p < .001$. This shows that people in the condition of trust were more accurate in judging lies ($M = 4.21$, $SD = .88$) than people in the condition of distrust ($M = 3.27$, $SD = .86$).

After this, it was studied whether there is a possible correlation between the degree of situational trust during the study and the accuracy of detecting lies. The results of a Pearson's correlation test show no significant correlation between the two variables ($r = -.15$, $p = .14$) and can be found in appendix D (Table D1). By this means, there is no relationship between the situational trust per video and the perception of lies as truths, thus, the accuracy of detecting lies.

Table 2

T-test between the condition trust/distrust & independent variables

	Distrust		Trust		
	M	***SD***	***M***	***SD***	***t***
Accuracy Lies	3.27	.86	4.21	.88	-5.24*
Accuracy Truths	3.85	1.12	3.85	1.12	-4.11*

Note. *$p < .001$

Hypothesis 3

To gather information on hypothesis 3 ('Participants' general level of trust has a positive influence on the accuracy of judging truths'), the relationship between the general level of trust and the accuracy of judging the truth was studied with a Pearson's correlation (Table D2). No significant correlation was found ($r = 0.14$, $p = .17$). This means that the general level of trust has no influence on the accuracy with which truths are detected.

Hypothesis 4

Last but not least, a closer look was taken on hypothesis 4 ('Participants' general level of trust has a positive influence on the accuracy of judging lies'). The results of a Pearson's correlation showed a significant correlation between the variables general trust and the accuracy of judging lies ($r = -0.24$, $p = .02$). This implies that those participants with a higher level of general trust showed a lower level of accuracy in lie detection.

Discussion

The aim of this research was to determine whether trust is a factor that influences the accuracy of judging statements as true or false. Previous research has shown that the psychological benefit of trust does have an influence on the accuracy (Ekman, 2001). However, no research was found that focused on the exact influence. In the present research this gap was investigated. It was found that observers are less accurate in judging under conditions of distrust than under conditions of trust for both lies and truths, implying that people who trust the source are more likely to be right with their judgement.

In this present research people with a higher level of trust were found to be more accurate when it comes to judging truths. This was the case in the conditions of trust and

distrust as well as with the situational trust, even though the manipulation of the condition had no significant effect on the actual perceived trust. The missing effect of the manipulation could be due to other factors that were influenced by either contracting the eyebrows or heighten them. One of these other factors could for example be the mood in which the participant is, as Forgas and East (2008) found in their study. Participants in the distrust condition reported easily getting annoyed of contracting their eyebrows after a few videos. Some even reported anger towards the persons in the videos. Participants in the trust condition (heightening the eyebrows) repeatedly reported getting tired by watching the videos. These feelings could be induced by the facial expressions they were supposed to show and have an effect on the accuracy of judging truths and lies themselves. The mood the participants were in because of the condition then might have had an effect on trust, thus mood might act as a mediator. Forgas and East (2008) found that negative moods as anger increases scepticism and doubt towards the sender of a message and this in return was found to improve the accuracy of judgment. Positive moods however seem to induce trust. This shows that other confounding factors and their effects on accuracy need to be studied in future research.

Participants in the condition of trust were found to be more accurate in judging lies as well as truths than participants in the condition of distrust. In consideration of the actual perceived trust, people with a higher level of trust were more accurate in judging truths than people with a lower level of trust as well. This stands in line with the findings of Schul, Mayo and Burnstein (2004). They found that trustful and distrustful persons have different encoding strategies. Distrustful persons tend to think about the negative outcomes of a missed lie and just perceive signals that tell them that the other person is lying. Because of the bias of distrustful people, trustful people have a higher accuracy of detecting truths in specific situations. There was no effect of the situational trust on the accuracy of judging lies found.

It was expected to find more evidence for Carter and Weber's (2010) findings that people with a high level of trust developed strategies to detect lies and prevent negative

outcomes. By this means, people with a high level of general trust, thus the general trust people perceive every day and not the actual trust during the study, are more accurate in judging lies and truths than people with a generally low level of trust. Others might argue that trust serves as moderator for accuracy instead. Lucassen and Schraagen (2011) found that especially in experts accuracy is a moderator for the trust people set in others. The more accurate something is the more is it perceived to be reliable and predictable. Reliability then has an influence on the level of trust (Fan et al., 2008). These two standpoints both state that there might be a positive relationship between accuracy and the general level of trust.

Against the expectations, people with a generally high level of trust were found to be less accurate in judging lies than people with a generally low level of trust. However, the general level of trust seems to have no effect on the accuracy of judging truths. A suited explanation of this is that people who have a low level of trust are more cautious towards others and have different strategies to identify liars because of this. They assessed the risk of being lied to and deceived as much higher than people with a high level of general trust because they distrust the other person and their intentions. People with a high level of distrust share the belief that other people just act in self-interest (Van Lange, 2015). The different encoding strategies between trusting and distrusting people found by Schul, Mayo & Burnstein (2004) could be the explanation for this result again. It could be possible that trust helps to accurately judge statements in specific situations but on the long term distrusting people tend to have a higher accuracy in judging because they are more aware of the risk of trusting a lot of people. By this means, if people have a low level of general trust they are less likely to trust people easily. In doing so they try to prevent themselves from negative outcomes of a missed lie and are more accurate in judging lies than people with a generally high level of trust. However, in a specific situation, for example when people meet on street and have a short talk that does not have an influence on their further life, situational trust

plays a role instead of general trust. In these short situations people with a high level of situational trust seem to be more accurate in judging truthful statements.

The current study has some strengths and weak points and also a couple of limitations. These are among others that the manipulation did not work. Participants were asked to heighten their eyebrows or to pull them together. An observer was present during the study and checked if all participants followed the instruction. By this means, it was not the case that the manipulation did not work because the participants did not understand or followed the instructions. A possible explanation is that the manipulation of the eyebrows had an effect on other emotions instead of manipulating trust.

Furthermore, the surrounding in which the participants took part in the study changed throughout the study. This might be a disturbing variable of the present study. Though, in everyday life the surrounding in which lies are told is very diverse as well. Thus, even though the study lacks because of this factor, it catches the reality of a conversation in which a lie is told and makes the study more generalizable.

There were no limitations set in participating in the survey except that participants had to be above the age of 18. Except this, everyone of all age groups, gender and nationalities could participate. This way a broader picture was obtained.

The insights gained in this study can be used in the future to educate people regarding the effect of trust on the accuracy of detecting lies. If they are aware about the lower level of accuracy in detecting truths due to a situational lower level of trust it might be easier for them to prevent this bias and by doing so also protecting themselves from negative outcomes of a missed lie or a misinterpreted truth.

Future research should be done on the field of truth and lie perceptions. This research set a starting point in elaborating factors that might influence accuracy but a lot of questions remain not answered. For example contracting or heightening the eyebrows seemed to have an effect on the accuracy but not directly on trust. This raises the question whether there is

another factor that is influencing the accuracy and is influenced by facial expressions. The factor could be for example an emotion or as mentioned earlier the mood of participants.

Also there might be several factors as for example other emotions that are influencing truth detection, this research showed that trust is definitely one of them. The trust someone perceives in the very moment a statement is made has a positive influence on the accuracy of judging truths. However if a person in general is very trustful this has negative consequences for the accuracy of judging lies. These insights give a better understanding of truth and lie detection in everyday life and are a good starting point for future research.

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Appendix

Appendix A: List of all questions asked in the videos

1) What are you wearing today?
2) What is the weather like outside today?
3) Did you know there was 100 dollar in an envelope buried in those books?
4) What did you do while I was out of the room?
5) Tell me what you did after the computer gave you instructions.
6) How are you feeling right now?
7) Did you think about stealing the money?
8) Did you steal the money?
9) Why should I believe you?
10) Are you lying to me now?

Appendix B: Cronbach's alpha scores for each subscale

Table B

Cronbach's Alpha per Subscale

Subscales	Cronbach's Alpha
General level of trust	.63
Trustscore	.64
Accuracy Lies	.58
Accuracy Truths	.73
Accuracy	.20

Appendix C: Sample Descriptive of each subscale

Table C

Descriptive Statistics per Subscale

	Minimum	Maximum	*M*	*SD*
General Trust Scale	2.17	4.67	3.51	.54
Trustscore	2.13	6.13	4.15	.93
Accuracy Lies	1.50	6.00	3.75	.98
Accuracy Truths	1.00	6.25	4.29	1.11

Note. *M* = average; *SD* = standard deviation.

Appendix D: Pearson's correlations

Table D1

Pearson Correlations between the situational trust & independent variables

	r
Accuracy Truths	.56*
Accuracy Lies	-.15

Note. *p<.001

Table D2

Pearson Correlations between the general level of trust & independent variables

	r
Accuracy Truths	.14
Accuracy Lies	-.24*

Note. *p<.05