



BACHELOR THESIS

HOW GOOD ARE YOU AT LYING?

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Abstract

This study deals with the interaction between the character traits self-esteem and self-consciousness and the effect of lying on people's writing behavior. The study is built up on the work of Pennebaker (2003) who found that people use fewer first-person pronouns when they are lying than when they writing the truth. Based on this outcome, in this research the effect of lying is defined as the use of fewer-first person pronouns in a written dishonest condition. Additionally, other researchers have the opinion that the effect of lying is also influenced by people's character traits. Based on the theoretical framework of the theory of self-awareness and the concept of public and private self-consciousness two hypotheses were formulated and tested in this research. First, that the effect of lying on the writing style is expected to be stronger by people with a lower amount of self-esteem than by people with a higher amount of self-esteem. Secondly, that the effect of lying on the writing style is expected to be stronger by people who are more public self-conscious than by people with more private self-consciousness. In the procedural experiment, the participants first had to answer questions pertaining to the amount of self-esteem and self-consciousness. Afterwards they had to write down their honest and one dishonest opinion with a contrary argumentation about the topic death penalty. Based on the analysis of the experimental data, both hypotheses could not be confirmed. Regarding the second hypothesis a further analysis to find an interaction effect was prohibited, based on the low reliability of the Fenigstein Self-Consciousness Scale. The found significant effect was the difference of the proportions of used first-person pronouns in the honest and dishonest opinion. Summarized this study could not confirm an interaction between the character traits self-esteem and self-consciousness and the effect of lying on the writing style. However this study does confirm the presence of the effect of lying, founded by Pennebaker, which means that people indeed use fewer first-person pronouns when they are dishonest than when they are writing the truth.

1. Introduction

If people take a critical look at their lives, surely everybody can remember a situation where they lied to somebody or even to themselves about something. In our society it is common to lie in all kinds of interaction and communication, because it is a fact of social life (DePaulo, Kashy, Kirkendol, Wyer & Epstein, 1996; Conrads, Irlenbusch, Rilke & Walkowitz, 2013). People lie out of many different motivations such as self-protection, the protection of others, to achieve or avoid consequences, unpleasantness or stress, to escape punishment or simply because it is sometimes easier that way (Erat & Gneezy, 2011; Conrads, Irlenbusch, Rilke & Walkowitz, 2013). The problem is that every person has a different opinion about when it is acceptable to lie and when lying goes too far. This is a critical point to keep in mind that some people draw that line of acceptability late. Some people would do anything for their beloved persons, even if there is a possible risk that a third innocent party gets harmed. For example to lie about the circumstances of a crime or giving a beloved person a fake alibi for the time of a crime to protect that person. This could lead to the consequence that the crime investigators are not able to arrest a person who, they are sure of, is guilty because there is not enough proof of the person's guilt.

The problem is that people are getting good practice in lying because it is a daily life event, so it gets hard to recognize if people are saying the truth or if they are telling a lie (Frank & Ekman, 1997). So what are possible starting points to reduce the transgression or the misuse of lying?

One possible way of solving the problem is to find an effective method to detect a lie, which, according to Frank and Ekman (1997) a lot of researchers already worked on. For example the invention of the polygraph in 1921 or "Facial action coding system" developed Ekman in the 1970's by (Frank & Ekman, 1997). According to Weinberger (2010) and Frank and Ekman (1997) both methods do not work flawlessly and also only on some people but not on all people in general. Weinberger pointed out an important problem saying that lie detection methods do not work similar on every individual, based on the simple fact that every individual is different. For instance people have different motivations to lie, diverse opinions about the acceptance of lying and different amounts of comfort they feel when they are being dishonest (Conrads, Irlenbusch, Rilke & Walkowitz, 2013; Newman, Pennebaker, Berry & Richards, 2003).

Frank and Ekman (1997) and also Mullen and Nadler (2008) pointed out another critical problem regarding the focus point of lie detection researches in the past, which mostly was focused on the non-verbal lying behavior. Therefore, it is necessary to search for alternative

ways to measure the deviation of behavior when people are lying, apart from the non-verbal behavior

Summarizing, it can be said that the field of lie detection still needs more research and new developments to invent a method which is applicable on every individual by involving people's different characters or motivations to lie and also which is not just focusing on the non-verbal behavior (Frank & Eckman, 1997; Weinberger, 2010).

In 1968 Jacques Lacan said "Language is the bridge to reality". Reading a person's narration can reveal a great deal of information about the writer's motives, emotion, character and other underlying thoughts. Not only through the content of the narration, but also through the used writing style of the person (Pennebaker, Mehl & Niederhoffer, 2003). Sigmund Freud indicated that people have more control over the content of their writing but less control over the way they are writing. In other words the writing style can sometimes expose more the truth than the content does (Newman, Pennebaker, Berry & Richards, 2003; Pennebaker, Mehl & Niederhoffer, 2003). Pennebaker and his colleagues shared this opinion and focused in their researches on the possible effect lying might have on people's writing style. They argued that use of self-references in a statement, automatically implies the ownership of that statement which leads people to refer to themselves less often when they are lying. The motivation for that lying behavior is that people want to be less responsible for the lie and also want to distance themselves from it. By evaluating fake and honest statements of their research participants, they indeed found that people refer to themselves less often when they were lying as when they were saying the truth (Newman, Pennebaker, Berry & Richards, 2003; Pennebaker, Mehl & Niederhoffer, 2003). Consequently, having a closer look on the writing style might be an alternative way to measure deviations between honest and dishonest behavior. This means that Pennebaker research is part of the theoretical framework in the present research.

The argument by Pennebaker about people's motivation to refer to themselves less often when they are lying is also an interesting point. Arguing that the one problem of the lie detection field is that every person is different. Duval and Wicklund (1973) used the same argumentation as Pennebaker for their research. In addition they also found that making people aware in a lying situation motivates them to refer more to themselves than before. Partly based on those results they formulated the theory of self-awareness, which is a part of the theoretical framework of the present research as well (Vorauer & Ross, 1999; Duval & Wicklund, 1973). This research outcome surmises that also other personality traits motivate

people to be less affected by the self-protective lying behavior, for example the character traits self-esteem and self-consciousness which are influencing factors for self-protection.

Based on the above mentioned knowledge the following research question is formulated:

Do the character traits self-esteem and self-consciousness influence the writing behavior when people are lying?

The results collected in this research could support the findings of Pennebaker and the idea of the influence of the character traits. Also it could be a motivation for future studies in this field.

2. Theoretical Framework

2.1. The effect of lying

As already mentioned above Pennebaker and his colleagues Newman, Berry and Richards (2003) focused on the relation between people's writing style and lying or to be more accurate, the use of specific words and word constructions in dishonest and honest narrations. By counting the use of words they found that people used more negative emotion words (sad, angry, hate), more motion words (run, walk, go), fewer third- person (he, she, it) and fewer first- person pronouns (I, me, my) in their stories when they were lying (Newman, Pennebaker, Berry & Richards, 2003). The use of fewer first-person pronouns was also a result of the research of Knapp, Hart and Dennis research in 1974. They argued that the reason for using fewer first- person pronouns lies in the fact that people want to distance themselves from the lie they are telling. They do not want to be responsible for the consequence and therefore talk about themselves less often (Newman, Pennebaker, Berry & Richards, 2003). Pennebaker goes along with this argumentation as already mentioned in the introduction.

The usage of first- person pronouns can be seen as the deviation between normal writing behavior and lie behavior. More specific they found an effect of lying on people's writing behavior which is the use of fewer-first person pronouns.

The study of Duval and Wicklund (1973) also focused on the use of first person pronouns in a lying situation, but more importantly they researched the effect of self-awareness on the effect of lying. In their experiment they made the participants aware of the fact that they need to lie

in the experiment which automatically made them lie more consciously. They found that the effect of lying on the use of first-person pronouns was less present by people who were made aware of the situation. This means people were more likely to perform honest behavior in a lying situation by referring to themselves more often within the written narration (Duval & Wicklund, 1973).

So what do people think about themselves in a situation where they have to lie? Does the awareness alone lead to the reduction of the effect of lying or what are the underlying personality traits which lead to the possibility of being more self-aware?

2.2. Self- Esteem

According to the theory of self-awareness people are not really self-focused individuals in general. But when people are made aware of a situation where they are being the center of attention, they are automatically forced to be more self-focused on their own behavior (Vorauer & Ross, 1999; Duval & Wicklund, 1973; Ickes, Wicklund & Ferris, 1973). This means people think about their thoughts, feelings, important personal values and personal important societal values, which make them compare themselves with their self-defined societal standards and to recognize possible discrepancies between the reality and those standards (Vorauer & Ross, 1999; Kassin, Fein & Markus, 2011). The theory of self-awareness points out that people cope with those self-discrepancies in basically two ways. The first way is the reduction of the discrepancies through a behavior change. People shape their behavior to fit into their own defined personal and societal standards and their self-concepts. The second way to cope with the discrepancies is to escape the self-awareness. This means that people shut down their thoughts about themselves without changing their behavior. Which way people choose is depending on the amount of self-esteem which defines the motivation a person has, to reduce their discrepancies.

Linking this theory to the present research it can be said that people with a lower amount of self-esteem cannot reach the motivation to change their behavior and to adapt to the lying situation. This means they will perform the expected effect of lying, described above, by using fewer first-person pronouns in the lying situation. Also, it can be assumed that people with lower self-esteem deal with a lot of self-discrepancies they cannot minimize, because they do not have the motivation to change their behavior. This could imply that those people are less satisfied with themselves in general and less confident about their own abilities. This lack of confidence could make them care a lot about the opinion of other people, which could

reinforce the effect of lying, because they are scared about what other people think of them, when they are telling a lie.

In contrast, people with a higher amount of self-esteem will try to adapt to the lying situation by changing their behavior, which means that the effect of lying might be less affective.

Furthermore, it can be assumed, that more self-esteem implies more confidence, which means they those people do not really care what other people think of them. Therefore they will not intentionally try to personally distance themselves from the lie, which also could decrease the effect of lying.

2.3. Self-consciousness

As already described above, when people are aware of themselves, they think about personal and societal values which are important to them (Kassin, Fein and Markus, 201; Vorauer & Ross, 1999; Fenigstein, Scheier & Buss, 1975). According to the concept of public and private self- consciousness people with more private self- consciousness are more triggered by the desire to shape their behavior based on their inner thoughts, feelings and their individuality. On the other hand people who are more public self- conscious are more triggered to shape their behavior based on values or expectations the person think, the society or the audience has. Additionally Mueller (1982) and Eichsteadt and Silvia (2003) found that people with more private self-consciousness use more self-descriptive assertions and first-person pronouns in a 'fill-in-the-blank' test, than people with more public self-consciousness. For this research it can be predicted, that people, who are more public self-conscious, will be more affected by the effect of lying. It is important to them what other people think, which makes them distance themselves from a lie to put themselves in a better light. Furthermore, it can be predicted that those people also use fewer first-person pronouns in general, which maybe can increases the effect of lying.

On the other hand, people with more private self-consciousness are expected to use more first-person pronouns in general, which could decrease the effect of lying. Also, they care more about what they personally think of themselves as a person and not about what the society or the audience think of them. So, they might not intentionally try to change their behavior, to stand in a better light for the society. For that reason it can said, that private self-conscious people are less affected by the effect of lying.

Based on the research question and the theoretical framework the following hypotheses are defined:

***Hypothesis 1:** The effect of lying on the writing style, which is the use of fewer first-person pronouns, is expected to be stronger by people with a lower amount of self-esteem as by people with a higher amount of self-esteem.*

***Hypothesis 2:** The effect of lying on the writing style is expected to be stronger by people who are public self-conscious as by people who are private self-conscious.*

These hypotheses were tested in an experiment in which both assumptions are expected to be confirmed.

3. Method

3.1. Participants and design

60 people (26 women and 34 men) participated in this research, ranging in the age from 20 up to 70 (M=40.22; SD= 17.10). The participants were mostly students (45%) and employed (43.3%) but also 11.7% were retired; 76.7 % were from Germany, 21.7% from the Netherlands and 1.7% from other countries. Based on the high rate of German participants the whole experiment was carried out in two languages: German and English.

The research was an experimental design, implemented as an online research, with three different factors and two levels for each factor which makes it a 2x2x2 factorial design. Each independent variable in the experiment is a factor in this design, listed in the table 1 below.

Table 1. Factorial Design of the Experiment

		Amount of Self Esteem		Amount of Self-Consciousness	
		High	Low	High	Low
Instruction of Writing the opinion	High				
	Low				

The amount of self-esteem and self-consciousness were measured with three different questionnaires: The Rosenberg Self-Esteem Scale, the Heatherton and Polivy Self-Esteem Scale and the Fenigstein Private and Public Self-Consciousness Scale. The third factor contains the two conditions, honesty and dishonesty. In the honest condition the participants had to write down their honest and personal opinion about death penalty, whereas in the dishonest condition the respondents were asked to write down a contrary opinion about death penalty. All respondents participated in both conditions. Also a random factor was added in this factorial design concerning the order of the conditions. This means that some participants first wrote the honest, whereas others first wrote the dishonest opinion about death penalty. The aim of the experiment was to find out the interaction between the amount of self-esteem and self-consciousness and the proportion of the used first-person pronouns in the honest and dishonest condition. That is why the proportion of first-person pronouns is the dependent variable in this research.

3.2. Procedure and Materials

The respondents were asked to participate in this research via the social media Facebook and via e-mail contact. In the beginning of the experiment the respondents were informed about the procedure of the online survey, the anonymity of their answers, the voluntariness of their participation and that the survey could be stopped at any point.

In the course of the experiment the respondents were asked to provide demographical information. Subsequently they were asked to fill out a questionnaire to measure the participants' amount of Self-Esteem and Self-Consciousness. The questionnaire contained 35 statements about the general feeling about oneself on a scale 5-Point Likert Scale from 1 (strongly agree) to 5 (strongly disagree). The items were extracted out of three official and global used scales. First the Rosenberg Self-Esteem Scale which is worldwide the most used measuring scale of Self-Esteem containing 10 statements about the general feeling about oneself. For example "*I feel that I have a number of good qualities*" (Heatherton & Wyland, 1991). The Cronbach's Alpha was $\alpha = .80$ which indicates an adequate reliability of the Rosenberg Self-Esteem Scale. The second scale which was used in this study was the Self-Esteem Scale established by Heatherton and Polivy (1991). It is built up in the same way as the Rosenberg Self-Esteem Scale with a 5-Point Likert Scale but contains 20 statements concerning the general feeling about oneself, for example: "*I feel satisfied with the way my body looks right now*" With a Cronbach's Alpha of $\alpha = .89$ the Heatherton and Polivy Self-Esteem Scale also has a large reliability. The Rosenberg Self-Esteem Scale and the

Heatherton and Polivy Self-Esteem Scale were combined in one scale to measure the amount of self-esteem of the participants. In the framework of this research, this scale was named “Self-Esteem Scale” and has a high reliability with a Cronbach’s alpha of $\alpha = .92$.

The amount of private and public self-consciousness of the participants was measured with the help of the Fenigstein Self-Consciousness Scale (1975). It partly contains questions out of the Rosenberg Self-Esteem Scale and the Heatherton and Polivy Self-Esteem Scale but also additional questions to measure Private Self-Consciousness (“*I’m constantly examining my motives*”) and Public Self-Consciousness (“*One of the last things I do before leaving my house is look in the mirror*”). The evaluation of the reliability of the Fenigstein Self-Consciousness Scale showed a Cronbach’s Alpha of $\alpha = .23$. By evaluating the inter-item correlation and by deleting a disrupting item to improve the reliability the Cronbach’s Alpha was $\alpha = .28$. Dividing the Fenigstein Self-Consciousness Scale into its two parts, Private and Public Self-Consciousness, provided a Cronbach’s alpha of $\alpha_{\text{private}} = 0.52$ and $\alpha_{\text{public}} = .37$. The deletion of the item “*I’m aware of the way my mind works when I work on a problem*” in the Private Self-Consciousness Scale and of the item “*One of the last things I do before leaving my house is look in the mirror*” in the Public Self-Consciousness Scale improved the Cronbach’s alpha to $\alpha_{\text{private}} = .70$ and $\alpha_{\text{public}} = .74$. Even the improved Cronbach’s alphas if certain items would be deleted are not high enough to make the Fenigstein Self-Consciousness Scale reliable. This low reliability prohibits the further use of the Fenigstein Self-Consciousness Scale in this experiment.

Hence the second hypothesis could not be confirmed or discounted to extend of today’s research, which will be elucidated later in the discussion of this research.

To prevent that some participants got into a routine by rating all statements in a row on the same scale, some items were formulated in a negative way that the participants had to rate the statements the other way around. To give an example:” *On the whole, I am satisfied with myself.*” as a positive item and “*At times, I think I am no good at all.*” as a negative item. The whole questionnaire of this research is also added in the appendix of this study.

After rating the statements, the participants saw an extract out of an American movie where a man was sentenced to death through a deathly injection. Beforehand, the participants were informed that the movie has an age limit of 16 and that the extract might have controversial scenes but not a brutal content. Also, they were informed about the possibility to continue the research without watching the video.

Afterwards, the participants were asked to write down two different opinions about the topic death penalty with about 300 words for each opinion. Their real personal opinion about death

penalty and an opinion out of a contrary point of view, which does not correspond with the participants personal opinion. To be clear, in order of this research this two opinions are named “honest” and “dishonest” condition.

To prevent the problem that the participants were not motivated enough to write the same number of words in the second opinion as in the first one, the order with which condition the respondent had to start first, was randomly assigned. Thus some respondents first wrote their personal opinion whereas others first wrote the opinion out of the contrary point of view.

To calculate the proportion of first-person pronouns used in each condition, the Linguistic Inquiry and Word Count Method (LIWC) was used (Pennebaker, 1997). The LIWC can measure over more than 2300 words and word structures in any kind of text and different languages. These words are categorized in 70 linguistic categories, like first-person pronouns (I, me, mine), total pronouns (I, them, itself) or anger words (Hate, kill, annoyed) (Pennebaker, Mehl & Niederhoffer, 2003). In the framework of this research, the LIWC method was executed to give information over the percentage of the used words out of the linguistic category “first-person pronouns”.

After the respondents wrote down the two different opinions, they were asked to answer eight more questions about death penalty before they finished the online-study. For example: “*How important is the topic death penalty for you?*” or “*Do you think you succeeded in the task to write an opinion out of a different point of view?*” These questions were formulated to get a better view about what the respondents thought of the experiment. For example if death penalty was an interesting topic to deal with and to spent some thoughts on. Also if the respondents personally thought that they succeeded in writing down an opinion which is not their own so that an evaluation is reasonable. In other words, the answering of the eight questions gave the researcher a better view, whether the participants really understood the whole setup of the experiment and each single task they were required to do.

In the end, the participants were thanked for participating in this research and were motivated to ask questions about the research or the results if they are interested.

4. Results

In this passage, the collect data of the experiment is evaluated in order to test the hypotheses of this research. As already described above, the reliability analysis of the used scales in the experiment prohibited the further use of the Fenigstein Self-Consciousness Scale. For that reason in the following analysis only the Self-Esteem Scale, consisting out of the Rosenberg Self-Esteem Scale and the Heatherton and Polivy Self- Esteem Scale, is considered.

To test the first hypothesis a median split of the Self-Esteem Scale was carried out. In other words the total score on each scale was dichotomized into the categories “higher than the median” and “lower than the median”. With this method it was easier to evaluate a variance of the scores between the participants. 30 participants scored higher than the median of 2.03 on the 5-point Likert scale of the Self-Esteem Scale, which is half of the participants.

With the help of the LIWC program all words, which the participants wrote in each condition, were counted and the percentage of the used first-person pronouns was calculated. To make sure that the participants wrote a resembling number of total words in each condition a Paired-Sample T-Test was executed, which confirmed no significant difference between the total number of words in the two conditions honesty and dishonesty ($t(59) = 0.62, p > 0.05$). To test if the order of the conditions had an influence on the number of the total words and proportion of first-person pronouns written in the each condition, a Repeated Measure Analysis was used. The result of the analysis showed no significant influence of the chance in which order the experiment was performed on the total number of words and the proportion of first-person pronouns in each condition ($F_{\text{First-person}}(1, 51) = 0.84, p > 0.05$; $F_{\text{All words}}(1,58) = 1.04, p > 0.05$). Table 2. gives an overview over the total amount of words and the different percentages of the proportion of fist-person pronouns in each condition.

Table 2. Overview over the LIWC output

Variable	N	Mean	SD
Total words Dishonesty	60	166.25	92.94
Total words Honesty	60	162.60	98.32
First-person Dishonesty (%)	53	1.36	1.28
Frist-person Honesty (%)	53	2.31	2.31
N (valid)	53		
Missing	7		

To test the first hypothesis also a Repeated Measures Analysis of Variance was executed. This analysis could also be named a Mixed-Design Analysis of Variance, because it compares the two conditions honesty and dishonesty for each participant (within-subject factor) and the amount of Self-Esteem (table 3) between each participant (between-subject factors).

Table 3. Repeated Measure Analysis of Variance of the Conditions Honesty and Dishonesty and the Self-Esteem Scale

Effect	Mean Square	df	F	Sig.
Honesty and Dishonesty	23.50	1	8.32	.006
Self-Esteem Scale	1.65	1	.38	.536
Honesty and Dishonesty * Self-Esteem Scale	.28	1	.13	.714
Error(Lie or Truth)	2.82	51		

The outcome of the analysis showed a significant difference between the proportion of first-person pronouns in the honest condition and the dishonest condition ($M_{\text{honest}} = 2.31$; $SD_{\text{honest}} = 2.31$ versus $M_{\text{dishonest}} = 1.36$; $SD_{\text{dishonest}} = 1.28$; $F(1, 51) = 8.32$, $p < .05$). However there was no significant difference between the scores of the participants on the Self-Esteem Scale ($F(1, 51) = .38$, $p > .05$). More important there was no significant interaction effect between the honest and dishonest conditions and the score on the Self-Esteem Scale ($F(1, 51) = .13$, $p > .05$). Summarized the first hypothesis could not be confirmed. At the end of the research the participants were asked to answer some questions about the topic death penalty and the research itself. Nearly 70 % of the participants rated the importance of death penalty for themselves between “very important” and “somewhat important”. Moreover 84 % were confident that they succeeded in writing down an opinion out of a different point of view, although 45 % of the participants rated the difficulty of taking the position of a person with a different point of view between “difficult” and “somewhat difficult”.

5. Discussion

The aim of this research was to find out, whether there is an interaction between the character traits self-esteem and self-consciousness and the effect of lying on people’s writing style. The effect of lying was defined as the use of fewer first-person pronouns when people write down a dishonest opinion. The first hypothesis researched in this study was that the effect of lying was expected to be stronger by people with a lower amount of self-esteem as by people with higher amount self-esteem. The second hypothesis was that the effect of lying is expected to

be stronger by people who are more public self-conscious as by people, who are more private self-conscious.

Based on the evaluation of the experimental data both hypotheses could not be confirmed. Testing the first hypothesis, the results of the evaluation displayed no significant interaction between the character trait self-esteem and the effect of lying, which means it could not be confirmed that people with a lower amount of self-esteem used fewer first- person pronouns than people with higher amount self-esteem.

Regarding the second hypothesis a further analysis, to find an interaction effect between self-consciousness and the effect of lying, was prohibited, based on the low reliability of the Fenigstein Self-Consciousness Scale. This means no statement about the influence of self-consciousness on the effect of lying could be made in the frame of this research. In a nutshell, both hypotheses were not supported by the outcome of this study and therefore need to be rejected.

What are the reasons for this outcome?

Based on the fact that the evaluation confirms an effect of lying on people's writing style, which means that the participants indeed used fewer first-person pronouns in dishonest condition as in the honest condition, could lead to the assumption that the used method in the experiment, to detect the effect of lying, was successful. Accordingly, writing down one honest and one dishonest opinion about death penalty was a good solution to represent a lie and truth condition. This is also confirmed by the answers of the participants about death penalty and the experiments itself in the end of the experiment. Most of the participants thought that death penalty is an important topic for them. This means, that it is a topic of interest where everybody as an opinion about. Moreover, most respondents shared the opinion that they succeeded to write down a dishonest opinion, even though, it was not easy to provide arguments.

Summarizing, the significant effect confirms the effect of lying, founded by Pennebaker (2003). Pennebaker and also of Knapp, Hart and Dennis (1974) pointed out that the reason for the effect of lying might be, that people try to depersonalize from themselves when they are lying (Newman, Pennebaker, Berry & Richards, 2003). This conclusion can also lead to another explanation about the effect of lying found in this research. During the present experiment the respondents never got the instruction to "lie", but only the instruction to write down an opinion out of a contrary point of view. Based on this instruction it could be argued, that the depersonalization and the effect of lying might also already occur when people write down an opinion, which does not confirm their own personal argumentation. If this is true it

means, that the effect of lying can be expanded to all kinds of situations where people write down something which undermines their personal perception. This is a really important point which could be an addition to the work of Pennebaker.

Assuming, that writing down an honest and dishonest opinion about death penalty was a successful method to measure the effect of lying, the problem, why both hypotheses could not be confirmed, could be found in the used questionnaire. The analysis could not detect a significant difference between the scores of each participant on the Self-Esteem Scale. Hence, a significant interaction effect between the different amounts of self-esteem for each participant and the effect of lying could also not be detected. One reason might be that the used Self-Esteem Scale measures self-esteem in general but without any relation to honesty and dishonesty. This non-existent coherence between the two parts of the experiment might have confused the participants. Also, all 35 items of the scale had to be rated on a 5-point Likert scale, which could have led the participants to rate each item automatically in the same way, without reading it correctly or thinking about it more intensively. Additionally, some items might have been too personal for some respondents, so that they did not answer them honestly, although it was an anonymous experiment.

The Fenigstein Self-Consciousness Scale brought up the problem of a low reliability, so that further analysis was prohibited. Evaluating this low reliability, the above mentioned generalization, the one-sided possibility of answering the items on a 5-point Likert scale and the thought of a lack of anonymity, also might have been influencing factors. The Fenigstein Self-Consciousness Scale consisted out of 8 items, 4 items for the private and the other 4 items for the public self-consciousness. A total amount of 8 (4) items for one scale might not have been enough for measuring self-consciousness.

Also the theoretical framework needs to be reflected to find possible reasons for the research outcome. The theory of self-awareness points out, that by making people aware of a situation they are automatically becoming aware of themselves. Only when people become aware of themselves they can deal with their self-discrepancies. Either they deal with the discrepancies and minimize them through behavior change (high amount of self-esteem) or they escape self-awareness without dealing with self-discrepancies (low amount of self-esteem). In relation with the present study it can be concluded that the created dishonest situation in the experiment indeed made the participants aware of the situation but it was not enough to make them aware of themselves. The step to reach self-awareness step is required in order to get aware of self-discrepancies. So it can be said that the whole progress of dealing with those

discrepancies and the possible behavior change did not happen at all, which means the participants could not change their behavior as expected.

Regarding the self-consciousness, no statement can be made about the concept of private and public self-consciousness, because it was not part of the deeper analysis.

Apart from the problems concerning the questionnaire, having a closer look at the analysis of the collected data maybe also reveal some possible reasons for the research outcome.

To define whether people have a higher or a lower amount of self-esteem a median split of all scores on the Self-Esteem Scale was used. On the one hand this is a good solution, because it shows exactly who has a higher or lower amount of self-esteem. On the other hand this dichotomy gives a limitation of variability, which might have affected the outcome, that there was no significant difference between the scores on the Self-Esteem Scales of the participants. Last, some reasons for the outcome of the research might lie in the whole structure of the experiment. The participants first had to answer all 35 items about their general feeling about themselves, then had to write down two opinions with 300 words each and afterwards they had to answer eight more questions about death penalty. This order of the experiment might have demotivated the participants to continue the research with the same enthusiasm and concentration, hoped by the researcher. Thus, they might not have read all questions and introductions correctly, which may have manipulated their answers and the outcome of the research.

Another cause could be the request of participation and the reward for the participants. Since all respondents were friends or acquaintances of the researcher, their motivation might have been higher than usual to take part on a research but still they did not get any reward for the participation.

6. Conclusion

The hypotheses that the effect of lying is expected to be stronger by people with a lower amount of self-esteem and by people who are more public self-conscious could not be supported within the framework of this research. The analysis of the experimental data showed no interaction effect between the amount of self-esteem and the effect of lying. Moreover an analysis concerning the interaction of a person's self-consciousness and the effect of lying could be conducted based on the low reliability of the Fenigstein Self-Consciousness Scale. On the other hand the evaluation showed a significant difference between the proportion of first-person pronouns used in the honest and dishonest condition.

Participants used a significant lower proportion of first-person pronouns in the dishonest condition as in the honest condition. This result goes along with the research outcome of Pennebaker's study in 2003 and supports Pennebaker's assumption about the existence of an effect of lying on people's writing style (Newman, Pennebaker, Berry & Richards, 2003). Also, the discussion above reveals a new possibility of expanding the effect of lying to all kinds of situations, besides a lying situation, where people have to write down an opinion which does not go along with their personal perception. This is an interesting point which could be a motivation for researches in the future.

Summarizing, the outcome of this research did not reveal the hoped outcome, which means it could not confirm the formulated hypotheses but, it gives a small contribution for the good approach of Pennebaker and also of Duval and Wicklund, who implied a possible influence of character traits on lying.

For future research it is advised to use a different questionnaire, which measures self-esteem in place of the Rosenberg Self-Esteem Scale and the Heatherton and Polivy Self-Esteem Scale. In addition, the outcome of this research showed that 8 items out of the Fenigstein Self-Consciousness Scale are not enough to measure self-consciousness. More questions, besides the used questions out of the Fenigstein Self-Consciousness Scale, should be used in the future. Moreover, it should be more effective to use a questionnaire which is more accurate and more applied to the research topic. Also, the addition of different answer possibilities, for example a mixture of open, dichotomy and Likert-scale questions, should be considered. This could avoid answer stagnation of the participants and should keep the participants motivated and concentrated. Concerning the analysis of the collected data, it is advised to use another method instead of a median split for the scores on the Self-Esteem Scale. For example, using the variable Self-Esteem as a continuous variable could give more variability and room for further analysis. In the end, it might be also helpful to give the respondents a reward which motivates them to do their best. The obligation of more participants could help to get a result, which can be generalized on a larger population.

Summarizing, the interaction between character traits and the effect of lying on people's writing style is an interesting topic, which is worthwhile to be researched, but with some adequate and useful changes in the setup of the experiment and material use.

7. References

- Conrads, J., Irlenbusch, B., Rilke, R. M. & Walkowitz, G. (2012) Lying and team incentives; *Journal of Economic Psychology*, 34, 1-7
- DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M. & Epstein, J. A. (1996) Lying in Everyday Life; *Journal of Personality and Social Psychology*, 70 (5), 979- 995
- Duval, S. & Wicklund, R. A. (1973) Effects of Objective Self-Awareness on Attribution of Causality; *Journal of Experimental Psychology*, 9, 17-31
- Erat, S. & Gneezy, U. (2012) White Lies; *Management Science*, 58 (4), 723-733
- Fenigstein, A., Scheier, M. F. & Buss, A. H. (1975) Public and Private Self-consciousness: Assessments and Theory; *Journal of Consulting and Clinical Psychology*, 43 (4), 522-527
- Frank, M. C. & Ekman, P. (1997) The Ability to Detect Deceit Generalizes Across Different Types of High- Stake Lies; *Journal of Personality and Social Psychology*, 72 (6), 1429-1439.
- Heatherton, T. F. & Polivy, J. (1991) Development and validation of a scale for measuring state self- esteem; *Journal of Personality and Social Psychology*, 60, 895-910
- Heatherton, T. F. & Wyland, C. L. (1991) *Assessing Self-Esteem*; American Psychological Association, (14), 219- 233
- Ickes, W. J., Wicklund, R. A. & Ferris, C. B. (1973) Objective Self Awareness and Self Esteem; *Journal of Experimental Social Psychology*, 9, 202-219
- Kassin, S., Fein, S. & Markus, H. R. (2011) *Social Psychology*; Wadsworth Cengage Learning; 8th Edition

Mullen, E. & Nadler, J. (2006) Moral Spillovers: The effect of moral violations on deviant behavior; *Journal of Experimental Social Psychology*, 44, 1239-1245

Newman, M. L., Pennebaker, J. W., Berry, D. S. & Richard, J. M. (2003) Lying Words: Predicting Deception From Linguistic Style; *Personality and Social Psychology Bulletin*, 29 (5), 665-675

Pennebaker, J. W., Mehl, M. R. & Niederhoffer, K. G. (2003) Psychological Aspects of Natural Language Use: Our Words, Our Selves; *Annual Review of Psychology*, 54, 547-77

Rosenberg, M. (1965) *The Rosenberg Self-Esteem Scale*; The Morris Rosenberg Foundation: Department of Sociology, Maryland, 20742- 1315

Vorauer, J. D. & Ross, M. (1999) Self- Awareness and Feeling Transparent: Failing to Suppress One's Self; *Journal of Experimental Social Psychology*, 35, 415-440

Weinberger, S. (2010) Intent to deceive? Can the science of deception detection help to catch terrorists? ; *News Feature; Nature*, 46

8. Appendix

Questionnaire

To all participants,

Thank you for taking the time to complete this survey for my Bachelor experiment. Your participation is very important to me to get enough data for my study.

This survey is researching the influence of the character traits self-esteem and self-consciousness on the writing style of people when they are formulating personal and other opinions about topics of interest. To study this influence this online-research is build up out of two parts:

The first part is a small questionnaire containing statements about your general feeling about yourself which you are asked to rate based on a scale.

In the second part you first get to see a video clip about a death penalty scene out of a mainstream American movie, where a prisoner who is sentenced to death gets a deathly injection. Although death penalty is a controversial topic the video clip does not contain brutal details and is R-rated by the age of 16. Still you have the opportunity to stop the research or continue the research without watching the video.

After watching the video you are asked to write down two different opinions about the topic death penalty: Your own personal and honest opinion and an opinion where you put yourself in the position of a person who has a different opinion, thus you write down the total opposite of your own opinion.

It is really important for this research to write down the opposite opinion as trustworthy as it is your real personal opinion.

Although it is not easy, I really would like you to try your best. Please take your time and write around 300 words (half page) for each opinion.

The whole survey should only take about 30-40 minutes of your time. Your answers will be completely anonymous and will not be seen by outsiders.

All questions require an answer in order to progress through the survey. Please submit this survey before the 07.11.2013.

If you have any questions about the survey, please contact me at n.schulz@student.utwente.nl.

Thank you very much for your participation!

1. What is your sex?

- Female
- Male

2. What is your age?*

3. What is your nationality?*

- German
- Dutch
- Other

4. What is your current occupation?*

- Student
- Employed
- Unemployed
- House maker
- Retired

The following questions are dealing with the feeling you have about yourself. Please give your honest opinion about each statement on a scale.

Please rate whether you strongly agree, agree, somewhat agree, disagree, or strongly disagree with the statements.

- | | | | | | |
|---|---|---|---|---|---|
| 5. On the whole, I am satisfied with myself. | 1 | 2 | 3 | 4 | 5 |
| 6. At times, I think I am no good at all. | 1 | 2 | 3 | 4 | 5 |
| 7. I feel that I have a number of good qualities. | 1 | 2 | 3 | 4 | 5 |
| 8. I am able to do things as well as most other people. | 1 | 2 | 3 | 4 | 5 |
| 9. I feel I do not have much to be proud of. | 1 | 2 | 3 | 4 | 5 |
| 10. I certainly feel useless at times. | 1 | 2 | 3 | 4 | 5 |

11. I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4	5
12. I wish I could have more respect for myself.	1	2	3	4	5
13. All in all, I am inclined to feel that I am a failure.	1	2	3	4	5
14. I take a positive attitude toward myself.	1	2	3	4	5
15. I' always trying to figure myself out	1	2	3	4	5
16. I'm constantly examining my motives	1	2	3	4	5
17. I'm alert to changes in my mood	1	2	3	4	5
18. I'm aware of the way my mind works when I work on a problem	1	2	3	4	5
19. One of the last things I do before leaving my house is look in the mirror	1	2	3	4	5
20. I feel confident about my abilities.	1	2	3	4	5
21. I am worried about whether I am regarded as a success or failure.	1	2	3	4	5
22. I feel satisfied with the way my body looks right now.	1	2	3	4	5
23. I feel frustrated or rattled about my performance.	1	2	3	4	5
24. I feel that I am having trouble understanding things that I read.	1	2	3	4	5
25. I feel that others respect and admire me.	1	2	3	4	5
26. I am dissatisfied with my weight.	1	2	3	4	5
27. I feel self-conscious.	1	2	3	4	5
28. I feel as smart as others.	1	2	3	4	5
29. I feel displeased with myself.	1	2	3	4	5
30. I feel good about myself.	1	2	3	4	5
31. I am pleased with my appearance right now.	1	2	3	4	5

32. I am worried about what other people think of me.	1	2	3	4	5
33. I feel confident that I understand things.	1	2	3	4	5
34. I feel inferior to others at this moment.	1	2	3	4	5
35. I feel unattractive.	1	2	3	4	5
36. I feel concerned about the impression I am making.	1	2	3	4	5
37. I feel that I have less scholastic ability right now than others.	1	2	3	4	5
38. I feel like I'm not doing well.	1	2	3	4	5
39. I am worried about looking foolish.	1	2	3	4	5

You finished the first part of the survey.

Please click on "Next" to get to the YouTube Video clip.

As already said in the beginning this video clip is containing a scene where a man, who is sentenced to death is getting a deathly injection. The clip does not contain highly brutal details but you should be aware that it might affect you emotionally.

Please click on the video to watch it and if this is not working copy this link to watch it via YouTube:

<http://www.youtube.com/watch?v=lwTY4x6OKAI&feature=youtu.be>

After watching the video clip, please give some thought on the topic:

Should death penalty be allowed in general? - Why?

Do some people deserve to die? - Why?

Is an injection the best way to take somebody's life? – What is the alternative?

40. Now I would like you to write down an opinion about death penalty out of the position from a person who has a different opinion about this topic.


Thus you write down the total opposite of your own personal opinion.

Please make this opinion look as trustworthy as it is your own opinion.

Although it is not easy, please try your best!

Try to write down about 300 words.

Write down the opinion here:



41. Finally, please write down your honest and personal opinion about death penalty.

Please write about 300 words.

Write down your opinion here:



42. How important is the topic death penalty for you?

- Very important
- Important
- Somewhat important
- Not really important
- Not important at all

43. How important is it to you, that other people know your opinion about death penalty?

- Very important
- Important
- Somewhat important
- Not really important
- Not important at all

44. Do you think death penalty should be more discussed in society?

- Yes
- No

45. Do you think you succeeded in the task to write an opinion out of a different point of view?

- Yes
- No

46. How difficult was it to take the position of another person with a different point of view?

- Very difficult
- Difficult
- Somewhat difficult
- Not really difficult
- Not difficult at all

47. How difficult was it to provide arguments supporting the position of another person with a different point of view?

- Very difficult
- Difficult
- Somewhat difficult
- Not really difficult
- Not difficult at all

48. How good do you think your arguments supporting the position of another person with a different point of view were?

- Very good
- Good
- Somewhat good
- Not good
- Not good at all

49. How difficult is it for you accept an opinion about the death penalty that is contrary to your own?

- Very difficult
- Difficult
- Somewhat difficult
- Not really difficult
- Not difficult at all

Thank you very much for your participation!

So finish this survey please click on the "submit" button.