**The Costs of Lying: Consequences of Telling Self-Centered and Other-Oriented Lies for
the Self-Esteem and Affect of Liars**

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Abstract

Deceiving others is generally viewed as immoral. However, most people lie on a daily basis. This paper examines the psychological consequences for the liars themselves, as they are participating in what is generally perceived as immoral behavior. More specifically, this paper focuses on the effects of self-centered and other-oriented lying on the liar's self-esteem and affect. We tested 1) if lying, in comparison to telling the truth, lowers liars' self-esteem and positive affect and 2) if these effects are stronger for self-centered than other-oriented lying, as self-centered lying is generally seen as more immoral. In total, three cross-sectional and one longitudinal studies were conducted ($N = 783$). Results showed that lying decreased people's self-esteem and increased negative affect, regardless of the type of lie. Furthermore, lying on a given day decreased people's self-esteem compared to their self-esteem on the previous day and to their average level of self-esteem.

Keywords: lying; deception; self-esteem; affect

The Costs of Lying: Consequences of Telling Self-Centered and Other-Oriented Lies for the Self-Esteem and Affect of Liars

Deceiving others is viewed by most people as unethical, yet research shows that people lie on a daily basis (Charlton & Cooper, 2003; DePaulo, Kashy, Kirkendol, & Epstein, 1996; DePaulo, Lindsay, Malone, Muhlenbruck, 2003; Feldman, Forrest, & Happ, 2002). Most of these lies stay undetected by others (Kupfer, 1982). For example, when people are explicitly asked to distinguish lies from the truth in laboratory studies, they can do so in 54% of all cases (i.e., performance is just above chance; Bond & DePaulo, 2006). One consequence of people's inability to detect lies is that liars often get away with their deception and accomplish the goal they attempted to achieve. However, when lying is uncovered, receivers of lies tend to react negatively to liars and report to feel less satisfied with relationships that involve frequent deception (Peterson, 1996; Tyler, Feldman, & Reichert, 2006), which can eventually lead to termination of the relationship (McCornack & Levine, 1990). Thus, lying affects receivers and relationships between senders and receivers negatively. Yet, relatively little is known about the psychological effects of lying for the person telling the lie. Here, we examine how lying affects the self-esteem of liars.

Self-Centered and Other-Oriented Lies

Deception can be defined as "an act intended to foster in another a belief or understanding which the deceiver considers false" (Zuckerman, DePaulo & Rosenthal, 1981). However, this does not mean that lying is always meant to harm others or to protect one's own interests. People can also lie to protect someone else's feelings (DePaulo & Bell, 1996). These white lies are considered other-oriented lies, while lies told in one's own interests are called self-centered lies (Kashy & DePaulo, 1996). Self-centered lies are told with the intention of material gain or for personal convenience, but also to make oneself feel better or to protect oneself against shame or rejection. Hample (1980) found that because people know that lying is wrong, they tend to only tell self-centered lies when they know that the rewards are assured and large.

Lying is generally perceived negatively (Cantarero et al., 2018), but the way in which lies are perceived by people depends on the context in which a lie is told and whether the lie is self-centered or other-oriented (Cantarero, Szarota, Stamkou, Navas & Dominguez Espinosa, 2018; Seiter, Bruschke & Bai, 2002). The motive behind a lie is the largest determinant for perceiving a lie as acceptable or not. When a lie is less self-centered and more other-oriented, the deception is considered more acceptable than when it is more self-centered and less other-oriented (Cantarero et al., 2018; Seiter et al., 2002). The context in

which a lie is told also has an effect on the acceptability of a lie. For example, telling a lie to a stranger to protect one's privacy is considered acceptable, while it is considered unacceptable when a lie to protect one's privacy is told to a spouse (Seiter et al., 2002). Furthermore, self-centered lies are generally considered as more acceptable in a professional setting than in a personal setting. However, in cultures with relatively high power distances, attitudes towards deception in a workplace setting are more similar to the attitudes towards deception in a private sphere, possible due to the fact that lying to a superior is perceived as a stronger norm violation in high power distance cultures than in lower power distance cultures (Cantarero et al., 2018).

Lying and Self-Esteem

Despite contextual differences in which type of lie is perceived as more acceptable, lying is generally seen as immoral across cultures (Cantarero et al., 2018). This raises the question of whether liars experience a decrease in self-esteem as a consequence of engaging in the violation of a moral norm. Self-esteem is defined as the way people typically feel about themselves (Brown, Dutton & Cook, 2001). This type of self-esteem is mostly called global- or trait self-esteem and is relatively stable throughout people's lives (Brown, Dutton & Cook, 2001). However, self-esteem can also be defined as a momentary emotional state that is influenced by positive and negative experiences (Brown et al. 2001). For example, feeling proud, regretful, or ashamed have all been shown to influence state self-esteem (Brown et al. 2001). State self-esteem fluctuates and is influenced by people's perception of how others see them (Harter, 1993). Behavior that is high in relational evaluation (e.g. succeeding or being praised) generally increases people's self-esteem, while behavior that is low in relational evaluation (e.g. failing or being rejected) lowers self-esteem (Leary, 1999). Therefore, self-esteem might be decreased by telling a lie, as this is an act that is widely perceived as wrong and immoral (Charlton & Cooper, 2003; DePaulo et al., 1996; DePaulo et al, 2003; Feldman et al., 2002).

Previous research suggests that self-esteem affects a range of important life outcomes. For instance, self-esteem is positively related with the enjoyment of life, as people with high self-esteem are psychologically happier and healthier than people with low self-esteem (Heatherton & Wyland, 2003). Low self-esteem is also related to several negative psychological states, such as feeling lonely, shy, distressed, and sometimes even depressed (Leary, 1999; Tennen & Affleck, 1993). Thus far, empirical evidence on the effect of lying on self-esteem is scant, despite the fact that low relational behavior (which should include lying) lowers self-esteem (Leary, 1999).

In the only study (to our knowledge) on this topic, Hample (1980) examined how liars appraise the consequences of their lies. Results showed that people were often satisfied with the outcome of their lies. People were successful in achieving their goals by lying. However, lying was also associated with reduced self-esteem. In short, while people may be satisfied with the outcome of a situation after telling a lie, they may be less satisfied with themselves, presumably because they had to violate a moral norm to achieve their goal. However, Hample (1980) did not examine if self-esteem was higher for people who told the truth compared to telling a lie. Furthermore, Hample (1980) did not test if self-satisfaction was influenced by the motive (self-centered or other-oriented) of the lie. The motive of a lie could however influence the effect of lying on self-esteem, as self-centered lying is considered to be less acceptable than other-oriented lying (Cantarero et al., 2018; Seiter et al., 2002).

The Present Studies

The present studies investigate the effect of lying on self-esteem. We focus on explicit self-esteem, which refers to self-esteem that is measured by standard self-report scales (Jordan, Spencer & Zanna, 2005), rather than implicit self-esteem that is an unconscious form of self-reflection (Greenwald & Banaji, 1995). We hypothesize that lying lowers someone's self-esteem, as lying is generally considered to be immoral behavior (Cantarero et al., 2018; Seiter et al., 2002). Moreover, we examine whether this relationship depends on the type of lie. We expect that the effect on self-esteem is stronger when a lie is self-centered than when it is other-oriented, as self-centered lies are perceived as less acceptable than other-oriented lies (Cantarero et al., 2018; Seiter et al., 2002). Nevertheless other-oriented lies are expected to decrease self-esteem because it is still generally viewed as immoral behavior, but the effects are anticipated to be weaker than for self-centered lies.

We also examine the role of negative affect. Self-esteem is often defined as "the positive or negative evaluations of the self, as in how we *feel* about it" (Smith & Mackie, 2007). Furthermore, state self-esteem is associated with feelings like being proud or ashamed of oneself (Brown et al. 2001). Thus, affective responses play a central role in determining a person's self-esteem (Benson & Giacomini, 2020; Brown & Marshall, 2001; Juth, Smyth & Santuzzi, 2008; Krieger, Hermann, Zimmermann & Grosse Holtforth, 2015; Passanisi, Gervasi, Madonia, Guzzo & Greco, 2015). Therefore, this study aims to explore the effects of lying on a affect (and whether this depends on the type of lie being told). We hypothesize that lying increases negative affect. We expect that the effect of lying on affect is stronger when a lie is self-centered than when it is other-oriented, as self-centered lies are perceived as less acceptable than other-oriented lies (Cantarero et al., 2018; Seiter et al., 2002). Other-oriented

lies are still expected to increase someone's negative affect and decreases someone's positive affect, but the effects are anticipated to be weaker than for self-centered lies. We report all manipulations, measures, and exclusions in these studies. This research was not pre-registered. All data and analysis scripts can be accessed at <https://osf.io/623dy>.

Study 1

In Study 1, we tested the hypotheses that lying, compared to telling the truth, decreases a person's self-esteem and increases negative affect. We hypothesized that these effects are stronger for self-centered lies than for other-oriented ones.

Method

Participants and Design

Participants were 202 Amazon Mechanical Turk (MTurk) workers who participated for €1. One outlier with an unusual high acceptability perception score (84) was excluded from the analyses, together with a participant that did not finish the questionnaire, leaving a sample size of 200 participants (93 females; 105 males; 2 unspecified). Their ages ranged from 19 to 72 ($M = 33.39$; $SD = 11.05$). The study was a 2 (type of dilemma: self-centered vs. other-oriented) $\times 2$ (behavior: lying vs. truth telling) between-subjects design. In total, 101 participants were assigned a self-centered dilemma (50.5%) and 99 participants were assigned an other-oriented dilemma (49.5%). The outlier that was excluded was originally in the "other-oriented lying"-condition.

Procedure and Materials

Participants were given one of eight situations, which they could have previously experienced in their lives. These situations are typical dilemmas in daily life for which participants had to decide whether to lie or tell the truth. For the presented dilemma, participants were asked how they responded the last time they were in a similar situation. Four of these dilemmas described a self-centered dilemma and four described an other-oriented dilemma. Participants were asked how they responded the last time that they were in a similar situation. After the dilemma, participants' self-esteem and affect were measured.

Participants' self-esteem was measured using two self-esteem scales constructed by Rosenberg (1965) with thirty-five items. The first scale consisted of ten items and was focused on the feeling that someone had about himself or herself (e.g., "I feel I do not have much to be proud of"). The second scale consisted of twenty-five items and was more focused on what a person thinks that others think of them (e.g., "Most people would take advantage of me if they could"). The items were measured by asking participants to what extent they agreed on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly*

agree). For this study, the two scales were combined into one general self-esteem scale ($\alpha = .96$), in which lower scores corresponded with lower self-esteem and vice versa. The items that were negatively worded were reverse coded, so that higher scores indicated higher self-esteem.

Participants' affect was measured with four items that described negative emotions: nervousness, regret, discomfort, and unhappiness ($\alpha = .90$). An example of an item from the affect scale is: 'My behavior in this situation made me feel uncomfortable'. The items were measured by asking the participants to what extent they agreed on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*very much*). The items were reverse coded, so that lower scores indicated more negative affect. The average of the total points was used for the analyses. A confirmatory principal components analysis revealed that there was indeed one factor for negative affect.

We additionally measured perceived acceptability of lying (see Supplementary Materials). Finally, participants were asked how vividly they remembered the situation in which they lied. The vividness was measured by asking the participants to what extent they could vividly remember how they felt during and after the situation they described on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*very much*).

Results

Of all participants, 87% answered 5 or above on our 7-point scale for the question to what extent they vividly remembered experiencing the dilemma ($M = 6.27$, $SD = 1.09$), indicating that participants generally found it easy to remember being in a similar dilemma. Out of the 101 participants that were assigned a self-centered dilemma, 42 told a lie (41.6%), 49 told the truth (48.5%) and 10 had not experienced a similar dilemma before (9.9%). Out of the 99 participants that were assigned an other-oriented dilemma, 45 told a lie (45.5%), 48 told the truth (48.5%) and 6 had not experienced a similar dilemma before (6.1%). There was no significant association between behavior (lying vs. truth telling) and type of dilemma (self-centered vs. other-oriented), $X^2(1, N = 184) = 0.09$, $p = .762$. The 16 participants who never experienced a similar dilemma before were excluded from further analyses, leaving a final sample size of 184 participants.

Before conducting each analysis, we checked whether the required assumptions were met. If assumptions were violated, we report the results of non-parametric tests (see the Supplemental Materials for full results of diagnostic tests).

Self-Esteem

A Kruskal-Wallis H test showed that there was a significant difference in self-esteem between the four combinations of behavior and type of dilemma, $\chi^2(3) = 13.15, p = .004$, with a mean rank self-esteem score of 74.56 for lying during a self-centered dilemma, 79.70 for lying during an other-oriented dilemma, 106.35 for telling the truth in a self-centered dilemma, and 104.44 for telling the truth in an other-oriented dilemma.

Post-hoc Mann Whitney U tests revealed that for self-centered dilemmas, participants reported lower levels of self-esteem when lying than when telling the truth, $U = 611.50, p = .001$. The post-hoc Mann Whitney U tests also showed that the mean rank scores for telling the truth in an other-oriented dilemma significantly differed from lying during an other-oriented dilemma, $U = 813.50, p = .040$. There were no significant differences between the rank scores of self-centered lying and other-oriented lying, $U = 914.50, p = .796$, and between the rank scores of self-centered truth-telling and other-oriented truth-telling, $U = 1127, p = .855$.

Affect

The results of a 2 (type of dilemma: self-centered vs. other-oriented) x 2 (behavior: lying vs. truth-telling) ANOVA revealed a significant main effect of type of behavior on affect, $F(1,180) = 25.03, p < .001, \eta_p^2 = .12, 95\% \text{ CI } [.046, .213]$. Participants who lied, experienced more negative affect ($M = 4.14, SD = 1.55$) than participants who told the truth ($M = 5.27, SD = 1.53$; see Figure 2). There was no significant main effect of type of dilemma on negative affect, $F(1,180) = 2.53, p = .113, \eta_p^2 = .01, 95\% \text{ CI } [.000, .065]$. There was no significant interaction between the effects of behavior and type of dilemma on negative affect, $F(1,180) = 0.24, p = .622, \eta_p^2 = .001, 95\% \text{ CI } [.000, .065]$ (see Table 1). See Supplementary Materials for the mediation of self-esteem on the influence of lying on affect.

Discussion

Both self-centered and other-oriented lying, in comparison to telling the truth, were associated with a decrease in self-esteem. However, the expectation that the effect of lying on self-esteem would be stronger for self-centered lies than for other-oriented lies was not confirmed. Similar results were found for the effect of self-centered and other-oriented lying on affect.

A limitation of Study 1 is that the Rosenberg self-esteem scale that was used to measure self-esteem may be less sensitive to how people feel in one particular moment than to how people generally feel about themselves. As our goal was to measure fluctuations in

self-esteem after telling a lie, we used a scale that is more sensitive to capture fluctuations in self-esteem in Study 2.

Table 1

Participants' negative affect for behavior (lying vs. truth telling) per dilemma (Study 1)

Type of dilemma	Behavior	<i>M</i>	<i>SD</i>	95% Confidence Interval	
				Lower Bound	Upper Bound
Self-centered	lie	3.89 _a	1.55	3.42	4.37
	truth	5.15 _b	1.65	4.72	5.58
Other-oriented	lie	4.37 _a	1.52	3.91	4.83
	truth	5.40 _b	1.40	4.96	5.84

Note. Means with different subscripts differ significantly ($p < .05$).

Study 2

Study 2 was a replication of Study 1. In this study, we measured self-esteem with three items that measure one's self-esteem in a specific moment, namely after they either lied or told the truth in a self-centered or other-oriented dilemma.

Method

Participants and Design

In total, 197 people voluntarily participated in the study of whom 192 (157 females; 35 males) completed the entire questionnaire. Their ages ranged from 15 to 57 ($M = 20.52$; $SD = 4.75$).

This study used a between-subject design with behavior (lying vs. truth telling) and type of dilemma (self-centered vs. other oriented) as the independent variables and self-esteem and affect as dependent variables. Five participants that did not fill in the questionnaire correctly, for example, by describing a situation that did not describe a lie were excluded from the study. In addition, one participant was excluded from the analyses for answering every question with a value of either 1 out of 7 or 10 out of 100.

Procedure and Materials

Participants were asked to describe one of the following four situations: 1) A situation in which they lied for their own benefit (self-centered lie); 2) A situation in which they could have lied for their own benefit but chose to tell the truth instead (self-centered truth); 3) A situation in which they lied for someone else's benefit (other-oriented lie); 4) A situation in which they could have lied for someone else's benefit but chose to tell the truth instead

(other-oriented truth). They were instructed to try to remember this situation as vividly as possible and to explain what they said and why they said it. In total, 54 participants described a situation in which they told a self-centered lie (28.1%), 43 participants described a self-centered situation in which they told the truth (22.4%), 51 participants described a situation in which they told an other-oriented lie (26.6%), and 44 participants described an other-oriented situation in which they told the truth (22.9%).

Participants' self-esteem was measured using a self-esteem scale (Vonk et al., 2017) with three items ($\alpha = .87$). An example of an item from the self-esteem scale is: 'I was satisfied with myself'. The items were measured by asking the participants to what extent they agreed on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The items that were negatively worded were reverse coded, so that higher scores indicated higher self-esteem.

Affect was measured by asking the participants to what extent they experienced positive or negative affect on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The average of the total points was used for the analyses. Positive affect that is related to lying/truth-telling was measured with four items: comfortable, happy, relieved, and proud. Negative affect that is related to lying/truth-telling was measured with six items: guilty, embarrassed, ashamed, discredited, sorry and angry. The items that were negatively worded were reverse coded, so that higher scores indicate more positive affect. The Cronbach's Alpha of the affect scale was 0.82.

Finally, participants were asked how vividly they remembered the situation in which they lied. The vividness was measured by asking the participants to what extent they could vividly remember how they felt during and after the situation they described on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*very much*). We additionally measured perceived acceptability of lying (see Supplementary Materials).

Results

Of all participants, 87.6% answered 5 or above on our 7-point scale for the question to what extent they vividly remembered experiencing the dilemma ($M = 5.31$, $SD = 1.41$), indicating that participants generally succeeded in remembering being in a similar dilemma.

Before conducting each analysis, we checked whether the required assumptions were met. If assumptions were violated, we report the results of non-parametric tests (see the Supplemental Materials for full results of diagnostic tests).

Self-esteem

First, we examined the effect of lying and the type of lie that was told on participants' self-esteem. The results of a 2 type of dilemma (self-centered vs. other-oriented) x 2 behavior (lying vs. truth-telling) ANOVA revealed no significant main effect of type of dilemma on self-esteem, $F(1,187) = 0.33, p = .566, \eta_p^2 = .002, 95\% \text{ CI } [.000, .032]$. It did reveal that there was a significant main effect of type of behavior on self-esteem, $F(1,187) = 14.59, p < .001, \eta_p^2 = .072, 95\% \text{ CI } [.017, .152]$. Participants who lied, experienced lower self-esteem ($M = 4.14, SD = 1.52$) than participants who told the truth ($M = 4.95, SD = 1.35$; see Figure 1). There was no significant interaction between the effects of behavior and type of dilemma on self-esteem, $F(1,187) = 1.01, p = .315, \eta_p^2 = .01, 95\% \text{ CI } [.000, .045]$ (Table 2). Thus, we again found that lying decreased self-esteem and this effect was not moderated by which type of lie participants told (self-centered vs. other-oriented).

Affect

We also examined the effects of lying on affect. The results of a 2 type of dilemma (self-centered vs. other-oriented) x 2 behavior (lying vs. truth-telling) ANOVA revealed that there was no significant main effect of type of dilemma on affect, $F(1,187) = 0.70, p = .404, \eta_p^2 = .004, 95\% \text{ CI } [.000, .040]$. It did reveal that there was a significant main effect of type of behavior on self-esteem, $F(1,187) = 9.03, p = .003, \eta_p^2 = .05, 95\% \text{ CI } [.005, .116]$. Participants who lied, experienced less positive affect ($M = 4.13, SD = 1.13$) than participants who told the truth ($M = 4.61, SD = 1.11$; see Figure 2). There was no significant interaction between the effects of behavior and type of dilemma on affect, $F(1,187) = 0.19, p = .667, \eta_p^2 = .001, 95\% \text{ CI } [.000, .028]$. Table 3 presents means, standard deviations, and confidence intervals of a 2 type of dilemma (self-centered vs. other-oriented) x 2 behavior (lying vs. truth-telling) ANOVA. See Supplementary Materials for the mediation of self-esteem on the influence of lying on affect.

Table 2

Participants' self-esteem for behavior (lying vs. truth telling) per dilemma (N=191)

Type of dilemma	Behavior	<i>M</i>	<i>SD</i>	95% Confidence Interval	
				Lower Bound	Upper Bound
Self-centered	lie	3.98 _a	1.55	3.59	4.37
	truth	5.00 _b	1.30	4.56	5.43
Other-oriented	lie	4.31 _a	1.48	3.91	4.72
	truth	4.91 _b	1.40	4.47	5.34

Note. Means with noncommon subscripts differ significantly ($p < .05$).

Table 3*Participants' affect for behavior (lying vs. truth telling) per dilemma (N=191)*

Type of dilemma	Behavior	<i>M</i>	<i>SD</i>	95% Confidence Interval	
				Lower Bound	Upper Bound
Self-centered	Lie	4.09 _a	1.14	3.78	4.40
	truth	4.51 _b	1.12	4.17	4.85
Other-oriented	Lie	4.16 _a	1.13	3.84	4.47
	truth	4.72 _b	1.10	4.38	5.05

Note. Means with noncommon subscripts differ significantly ($p < .05$).

Discussion

Study 2 replicated the results as Study 1. People who lied either for self-centered reasons or for other-oriented reasons reported a lower self-esteem compared with people who did not lie. The effect of lying on self-esteem was not stronger for self-centered lies than for other-oriented lies. Furthermore, the results showed that people who lied, either for self-centered reasons or other-oriented reasons, experienced more negative and less positive affect than people who did not lie. Again, participants who told a self-centered lie did not experience a stronger increase in negative affect or stronger decrease in positive affect than the participants who told an other-oriented lie.

A limitation of both Studies 1 and 2 is that we relied on how well a person could remember a situation from their past. It could have been difficult for participants to remember how they felt after telling a lie, especially when it occurred some time ago. Therefore, in Study 3, we conducted a diary study in which participants tracked and reported their lying behavior, self-esteem, and affect on the day of the lie immediately.

Study 3

Study 3 was conducted to test whether the results as obtained in Study 1 and 2 could be replicated. We used a diary study design to minimize memory bias.

Method

Participants and Design

In total, 285 Amazon MTurk workers (150 females; 135 males) participated in this study for €1. Only the first entry from people who participated twice were included. Their ages ranged from 18 to 75 ($M = 33.56$, $SD = 11.56$). This study used a between-subject diary study design with behavior (lying vs. truth telling) and type of dilemma (self-centered vs. other oriented) as independent variables and self-esteem and affect as dependent variables.

Procedure and Materials

Participants were asked to keep track of their lying behavior for one day. They had to report whether they lied or not and if they did lie, describe their lies and motive. Five people coded their lies as either self-centered or other-oriented (intercoder reliability was at 100%). After describing their lying behavior, participants who reported to have lied were asked in an online questionnaire if they had planned the lie and how serious they perceived their lie to be, both on a scale from one to nine. Next, self-esteem and positive and negative affect of all participants were measured.¹

Participants' self-esteem was measured using the same self-esteem scale as Study 2 did, which was designed by Vonk, Radstaak, De Heus and Jolij (2017) with a total of three items ($\alpha = .80$). Affect was measured by the same items that were used in Study 2. The items that were negatively worded were reverse coded, so that higher scores indicate more positive affect. The average of the total points was used for the analyses ($\alpha = .74$).

Results

Participants that could not be categorized, or that did not describe a situation in which they told either a self-centered or an other-oriented lie were excluded from the analyses. Out of the remaining 267 participants, 59 (22.1%) told a self-centered lie, 22 (8.2%) told an other-oriented lie, and 186 (69.7%) did not tell a lie on the day they participated in the diary study.

Before conducting each analysis, we checked whether the required assumptions were met. If assumptions were violated, we report the results of non-parametric tests (see the Supplemental Materials for full results of diagnostic tests).

Self-Esteem

A one-way ANOVA with behavior as the independent variable (self-centered lying vs. other-oriented lying vs. not lying) and self-esteem as the dependent variable showed that there was a significant difference in the average self-esteem score of the three groups of participants; self-centered liars, other-oriented liars, and people who did not lie, $F(2,264) = 24.99$, $p < .001$, $\eta_p^2 = .159$, 95% CI [.083, .235].

Post-hoc Tukey tests showed that people who lied either for self-centered reasons ($M = 3.88$, $SD = 1.35$) or for other-oriented reasons ($M = 4.40$, $SD = 1.22$) reported a lower self-esteem compared with people who did not lie ($M = 5.25$, $SD = 1.35$), respectively $p < .001$

¹ Study 3 also measured experienced comfort before and after telling a lie and experienced stress symptoms of the participants. These results were however not included in this paper as they were not relevant for answering this paper's hypotheses.

and $p = .015$ (see Figure 1). There was no significant difference in self-esteem between self-centered liars and other-oriented liars, $p = .259$.

Affect

A one-way ANOVA with behavior as the independent variable (self-centered lying vs. other-oriented lying vs. not lying) and affect as the dependent variable showed that there was a significant difference in the average affect score of the three groups of participants, $F(2,264) = 46.66$, $p < .001$, $\eta_p^2 = .255$, 95% CI [.170, .337].

Post-hoc Tukey tests showed that people who did not lie ($M = 5.34$, $SD = 0.07$) felt significantly more positive than people who told self-centered lies ($M = 4.03$, $SD = 0.98$) and people who told other-oriented lies ($M = 4.38$, $SD = 0.19$), respectively $p < .001$ and $p < .001$ (see Figure 2). There was no significant difference in affect between self-centered liars and other-oriented liars, $p = .299$. See Supplementary Materials for the mediation of self-esteem on the influence of lying on affect.

Discussion

As the results of Studies 1 and 2, the results from Study 3 showed that people who lied either for self-centered reasons or for other-oriented reasons reported lower self-esteem compared with people who did not lie. Again, the effect of lying on self-esteem was not stronger for self-centered lies than for other-oriented lies. Furthermore, the results showed that people who lied, either for self-centered reasons or other-oriented reasons, experienced more negative affect than people who did not lie, regardless of the type of lie.

Studies 1-3 consistently showed that lying is associated with decreases in self-esteem and increases in negative affect. In all three studies, we focus on between-person differences in self-esteem and affect, comparing people who told the truth with people who told a lie. In Study 4, we extended our analysis by examining *within-person* changes in self-esteem and affect.

Figure 1*Self-Esteem of Liars Compared to Truth Tellers*

Note. The self-esteem scores of liars significantly differed from those of truth tellers in Study 1, 2 and 3.

Figure 2*Affect of Liars Compared to Truth Tellers*

Note. The affect scores of liars significantly differed from those of truth tellers in Study 1, 2 and 3.

Study 4

Study 4 tested whether lying causes within-person changes in self-esteem. Participants recorded their lying behavior, self-esteem, and affect for five days and we tested whether participants who lied on a given day would experience a decrease in self-esteem compared to their self-esteem on the previous day. Study 4 also explored whether the relationship between lying and self-esteem is reciprocal. That is, we tested whether participants' level of self-esteem on one day was associated with their lying behavior on the next day. In this study, we measured self-esteem with the same three items focusing on self-esteem in one particular moment as in Studies 2 and 3.

Method

Participants and Design

In total, 100 Amazon MTurk workers (59 females, 34 males, 7 unspecified) participated in this study for €1. Their ages ranged from 19 to 58 ($M = 32.26$, $SD = 9.34$). This study used a within-subject diary study design with as independent variables behavior (lying vs. truth telling) and type of dilemma (self-centered vs. other oriented) and as dependent variable 'self-esteem'.² Out of all participants, 69% filled in the questionnaire on all five days.

Procedure and Materials

Participants were asked to keep track of their lying behavior for five days by filling in the questionnaire at the end of each day. First, self-esteem of participants was measured. Then the participants were asked to report whether they lied or not and if they did lie, to describe their lies and motive (self-centered or other-oriented).

Participants' self-esteem was measured using the same self-esteem scale as Study 2 and 3 did, which was designed by Vonk, Radstaak, De Heus and Jolij (2017) with a total of three items ($\alpha = .91$). The average of the total points was used for the analyses.

We also included several other exploratory measures. After describing their lying behavior, participants who reported to have lied were asked to rate on a 7-point Likert scale how intimate their interaction was, if they had planned the lie, and how serious they perceived their lie to be. Finally, they were asked to imagine how they and the person they had lied to would have felt if they had told the truth (see the Supplemental Materials for the results).

Results

Average levels of self-esteem (across all five days) ranged from 2 to 7 on the 7-point scale ($M = 5.44$, $SD = 1.21$). Participants reported having told a lie 45.20% of the time ($SD = 35.35\%$), with 22% of participants reporting that they had lied on each day and 19% reporting that they had not lied on any day.

Before conducting each analysis, we checked whether the required assumptions were met. If assumptions were violated, we report the results of non-parametric tests (see the Supplemental Materials for full results of diagnostic tests).

² As part of a different study, we also measured details of the interaction in which participants lied, whether participants planned to tell a lie and how comfortable participants felt before, during and after telling a lie.

Cross-Sectional Analysis

First, we conducted cross-sectional analyses, examining the effects of lying on participants' self-esteem on the same day. To examine the effect of lying on self-esteem, a multilevel regression model was estimated using the *lme4* (Bates et al., 2015) and *lmerTest* packages (Kuznetsova et al., 2016) in R (R Core Team, 2020). The model included random intercepts per participant and day to account for differences in average levels of self-esteem across these two factors.³ This yielded a negative effect of lying on self-esteem, $\beta = -0.19$, $SE = 0.08$, 95% CI [-0.36, -0.03], $t(322) = 2.29$, $p = .023$, showing that participants reported lower levels of self-esteem when having lied on the same day. Similar results were found when only focusing on participants who provided data for all five days ($n = 68$), $\beta = -0.18$, $SE = 0.09$, 95% CI [-0.35, -0.01], $t(284) = 2.09$, $p = .037$.

The moderating role of the type of lie (self-centered vs. other-oriented) was also investigated. Rather than predicting self-esteem with a binary variable indicating whether participants had lied or not, a dummy variable was included indicating whether participants had told no lie (the reference category), a self-centered lie, or an other-oriented lie. There was no significant difference between the effect of self-centered lie (vs. no lie) and the effect of other-oriented lie (vs. no lie) on self-esteem, $z = 0.003$, $p = .997$. Again, only focusing on participants without any missing data yielded similar results, $z = 0.20$, $p = .843$.

Time Series Analysis

Our time series data also allowed us to examine within-person changes in self-esteem. Using the *plm* package (Croissant & Millo, 2008) in R, we estimated a model predicting participants' self-esteem at time t with whether they had lied at time t while controlling for their self-esteem at $t - 1$. This yielded a positive effect of self-esteem at $t - 1$, $\beta = 0.60$, $SE = 0.04$, 95% CI [0.52, 0.68], $z = 14.46$, $p < .001$. Participants' self-esteem on any given day correlated with their self-esteem on the previous day. More importantly, the model also showed a negative effect of lying, $\beta = -0.21$, $SE = 0.11$, 95% CI [-0.42, -0.01], $z = 2.02$, $p = .044$. When participants had lied (vs. had not lied) on a given day, they experienced a decrease in self-esteem compared to their self-esteem on the previous day.

We also tested whether participants' level of self-esteem on one day was associated with their lying behavior on the next day. Self-esteem at $t - 1$ did not significantly predict the

³ Models that also included random slopes for the effect of lying on self-esteem per participant, $\chi^2(2) = 2.08$, $p = .353$, or per day, $\chi^2(2) = 5.50$, $p = .064$, did not show superior fit.

probability of lying behavior at time t or the increase in an individual's probability of lying relative to the previous day (i.e., lying at time t while also controlling for lying at time $t - 1$).

Discussion

Results of Study 4 showed that people who lied reported lower levels of self-esteem compared with people who did not lie. Similar to the results of Studies 1- 3, the effect of lying on self-esteem was not stronger for self-centered lies than for other-oriented lies. Importantly, we also found evidence that lying is associated with within-person changes in self-esteem: people who had lied on a given day experienced a decrease in self-esteem compared to their self-esteem on the previous day. Finally, we examined whether self-esteem is associated with future lying behavior, but did not find any evidence for this.

General Discussion

The present paper examined whether lying decreases self-esteem and increases negative affect. Moreover, we examined whether this effect is stronger for lies that are told for one's own benefit compared to lies that are told for someone else's benefit. Across four studies, evidence for effects of lying on self-esteem and affect were found (see also figures 1 and 2). However, there were no differences in the strengths of these effects between self-centered lies and other-oriented lies, as we had expected.

Specifically, in the retrospective studies 1 and 2, we found that both self-centered and other-oriented lying, in comparison to telling the truth, decreased people's self-esteem and increased their negative affect. Study 3 replicated these findings while using a diary study design that minimized memory errors among its participants. Study 4 again replicated these results, while also examining within-person changes in self-esteem. We found that lying on a given day decreased people's self-esteem compared to their self-esteem on the previous day. This confirms that lying decreases self-esteem, instead of the other way around (low self-esteem increases lying behavior). Finally, results from Study 4 suggest that self-esteem does not predict the probability of lying behavior in the future. Taken together, across four samples and various research designs, we consistently find that lying (vs. telling the truth) leads to decreased self-esteem and increased negative affect in the people telling the lies.

Previous research on the effects of lying very rarely focused on the liars' side of the story; most studies focused on the effect lying has on the relationship between the liar and the receiver or on the receivers alone. As a consequence, relatively little is known about the psychological consequences of lying for liars themselves (for an exception, see Hample, 1980). The present paper gives new insights into the effects of lying by showing that lying decreases self-esteem and increases negative affect. We also examined whether these effects

differ depending on the type of lie being told. As other-oriented lies (i.e., “white” lies) are typically perceived as less of a moral violation than self-centered lies, we hypothesized that the negative effects of lying for liars would be less pronounced for other-oriented lies. Across all four studies, we did not find support for this hypothesis. Thus, our results suggest that people experience a decrease in self-esteem and an increase in positive affect irrespective of whether they told lies to pursue their selfish goals or to benefit others. More research is needed to be able to explain why the effects of lying on self-esteem and affect were not stronger for self-centered liars than for other-oriented liars.

Limitations and Future Directions

One limitation for Studies 1 and 2 was that both of these studies relied on the memory of the participants for collecting data. We tried to minimize memory biases by 1) asking the participants to rate the vividness of their memories, and by 2) also including two diary studies in this paper (Studies 3 and 4). When asked to rate their vividness, 87% of the participants indicated having no trouble remembering.

Conclusion

To conclude, the present paper extends previous research on the effects of lying on the senders of lies by demonstrating that lying decreases self-esteem and positive affect. Although several previous studies showed that self-centered lying is considered to be less acceptable than other-oriented (Cantarero et al., 2018; Seiter et al., 2002), self-centered lying has no stronger negative effect on a liar’s self-esteem and affect than other-oriented lying does. Furthermore, lying on a given day decreases people’s self-esteem compared to their self-esteem on the previous day and to their average level of self-esteem. Finally, our results suggest that self-esteem does not predict the probability of lying behavior in the future. More research is necessary to be able to explain why the effects of lying on self-esteem and affect were not stronger for self-centered liars than for other-oriented liars.

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