An Investigation of the Lie-Telling Personality Type Within Different Social Contexts

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I. Overview

Within my dissertation project, as the title makes clear, I dealt with t*he lie-telling personality type.* In doing so, I dedicated my efforts to further develop and refine the nomological network of personality traits that can predict deception. To provide a suitable introduction to the research topic, the synopsis first presents a general definition of deception (see Section 1.) and then provides an overview about relevant literature on which it becomes evident that people use lies for a variety of different reasons and motives within their everyday life (see Section 1.1). Depending on the acceptance of different types of lies and depending on who is being lied to (for example, a stranger or a very close person), the frequency of deceptive behavior varies (see Section 1.2).

Attentive readers will certainly have noticed the addition *within different social contexts* in the title of my dissertation. This is because in the following part of the synopsis, it will be pointed out why it is of special importance to take the social context into account when investigating the lie-telling personality type. It is striking that research agrees that the closer two interactions partners are, the less likely they lie to each other, but thar this rule does not seem to apply in romantic relationships. Within this relationship type, lie rates are relatively higher compared to other close relationship types. Therefore, it will be elaborated that the specific motivation that drives deception in romantic relationships makes context-specific testing necessary, because established findings for predicting the frequency of lies are not necessarily transferable from other types of relationships. Again, to gain a deeper understanding of the research topic, relevant literature on the frequency of lying within the specific field of romantic relationships will be reviewed (see Section 2.). Further, underlying explanations for deception in romantic relationships (see Section 2.1) and the consequences of relationship-based dishonesty will be presented (see Section 2.2).

As another specific social context in which research and practice are interested in the prevalence of deception and its consequences is academic cheating (see Section 3.) A more

detailed insight into Learning Goal Theory is provided, as past research has highlighted learning goals to be valid predictors for academic cheating (see Section 3.1).

The subsequent synopsis provides a theoretical overview about the most studied personality traits and their predictive value for general lying behavior, namely the Dark Triad traits (see Section 4.1) and the Big Five factors of personality (see Section 4.2). Most importantly, I will then introduce a personality trait that has been completely neglected within the context of relationship-based dishonesty so far, namely Honesty-Humility (see Section 4.3). I will further point out that also in the academic context, the Honesty-Humility trait should be given much more consideration, as it turns out that learning goals (see also Section 3.1) do not explain incremental variance when the Honesty-Humility trait is considered. Finally, I will discuss the role of people's belief in a just world in predicting relationship-based dishonesty (see Section 4.4). Like research on the association between Honesty-Humility and deception, also this personality trait was mostly investigated by applying several cheating paradigms from behavioral ethics in which participants interact with anonymous players, so that—despite valid theoretical arguments—statements about the generalizability of these findings to the specific context of romantic relationships are in question.

The synopsis then ends with a brief summary of the findings of all empirical studies included in this dissertation project (see Section 5.), followed by a more detailed discussion about the role of the Honesty-Humility factor (see Section 5.1) and the role of people's belief in just world (see Section 5.2) for general deception research. Finally, directions for future research are suggested (see Section 5.3) and a general conclusion is drawn (see Section 5.4).

The empirical section follows in which I will present the results of 23 studies embedded in my three manuscripts: My first paper dealt with the correlation between Honesty-Humility and dishonesty in romantic relationships (see Appendix A). The second paper investigated the correlation of Honesty-Humility and learning goals with academic cheating (see Appendix B). The third paper then investigated the question if people's belief in a just world is associated with dishonesty in romantic relationships (see Appendix C).

Raw data, analysis codes and Supplemental Material of all studies reported in the empirical section can be found in the Open Science Framework (OSF). Further, of nearly all studies, hypotheses, analysis plans, exclusion criteria and power analyses were preregistered. Links to the preregistration protocols are provided within the specific projects on OSF, to which we will refer at the appropriate places within this dissertation.

II. Synopsis

1. Dishonesty

The truth, the whole truth, and nothing but the truth; What should be true in court is not necessarily true in real life. “Intimate relationships are not built on the truth and nothing but the truth.” (Cole, 2001, p. 107). That someone lies to someone and consequently vice versa, that someone is lied to, is common in many different contexts of our everyday life (DePaulo et al., 1996; Turner et al., 1975). Because not telling the truth is condemned as immoral, most people are interested in identifying liars so that they can implement appropriate consequences. This is true not only in the context of our social interactions with family members, friends, romantic partners, but also in the academic and professional context. For example, when we find out that our romantic partner is cheating on us this often leads to the immediate dissolution of the relationship; and if a teacher detects cheating in an exam, the student in question will be excluded to ensure that performance assessments at school and university are fair. Because the norm of honesty is so important to us (e.g., Geißler et al., 2013), I therefore think it is of great importance to further investigate the already posed question if there is a lie-telling personality type (e.g., Ennis et al., 2008; Kashy & DePaulo, 1996). While past research mostly investigated the ability to detect lies as noted by many researchers (e.g., McLeod & Genereux, 2008; Seiter et al., 2002), the present work clearly focuses on the lie teller and investigates which personality traits predict the frequency of lying in different social contexts.

One of the most influential descriptions of how to define a lie (with 2321 citations on Google Scholar; status as of April 2023) stem from DePaulo et al. (1996). They state that a lie occurs any time someone is to be deliberately deceived. They further mention that they interpret their definition “[…] broadly as encompassing any intentional attempts to mislead, including even nonverbal ones.” (p. 981). From many other definitions reviewed for the present dissertation (e.g., Bryant, 2008; DePaulo & Kashy, 1998; Ennis et al., 2008; Lindskold & Walters, 1983; Metts, 1989), it becomes clear that past research agrees that both, the *intend to deceive*

and the *actual deception* must be present to speak of a lie. The terms lying, deception and dishonesty are often used synonymously.

While a basic definition of lying has become generally accepted in past literature, a large research body has focused on developing taxonomies/typologies of different reasons/motives and different types of lies, with significant differences becoming apparent between these works. To better interpret own empirical results and to be able to compare them with past literature, the various names and operationalizations that have been used for different reasons/motives for lying and different types of lies will be clarified in the following section.

1.1 Different Reasons/Motives and Types of Lies

In their groundbreaking work, DePaulo et al. (1996) asked an American college student sample (N = 77) and an American community sample (N = 70) to daily report all their everyday lies told during a seven-day recording period and then coded participants self-described reasons for telling lies. As a result, they suggested a classification scheme in which lies are categorized (amongst others) regarding (a) the *type* of a lie and (b) the *reason/motive* of a lie. Regarding different types, DePaulo et al. (1996) defined an *outright lie* as a lie wherein the information is completely contradictory to the truth (e.g., “I told my mother that I did not drink beer at college."), an *exaggeration* as overstating facts to form an impression that exceeds the truth (e.g., “Exaggerated how sorry I was to be late."), and a *subtle lie* as evading or omitting relevant details to mislead another person about the truth (e.g., “He and I discussed sexual acts that I had performed, but he assumed that they had been performed with a woman.”; DePaulo et al., 1996). They also investigated for what reasons/motives people lied and consequently came to a differentiation between *self-focused lies* and *other-oriented lies*. Self-focused lies are defined as lies told to benefit oneself or to protect or enhance the liar’s psychological well-being/general interest; self-focused lies are also told to elicit a desired emotional response (e.g., “Lie: I told her Ted and I still liked each other when really I don't know if he likes me at all. Reason: Because I'm ashamed of the fact that he doesn't like me anymore."). Other-oriented lies are defined as lies told to benefit another person or to protect or enhance other persons’ psychological well-being/general interests (e.g., “Lie: Told her she looked well, voice

sounded good when she looks less well than a few weeks ago. Reason: Not to add worry as she undergoes chemotherapy treatments."). In reference to DePaulo et al. (1996), the present work adopts the view that different types of lies are about a more technical understanding of lies (e.g., how much information was omitted, concealed, exaggerated, or understanded), while the reasons/motives of a lie are about whose interests are served due to the lie (e.g., who profits from the lie).

Reference should be made to the work of McLeod and Genereux (2008), who investigated the acceptability and likelihood of different reasons/motives of everyday lies (they labelled it as different types) within a sample of 287 students. Although they stated that their study does not include an exhaustive list, based on past literature, they identified four motives for lying: lying motivated by *altruism* (i.e., lying to help or protect the lie-receiver), lying motivated by *conflict avoidance* (i.e., lying to avoid a conflict with the lie-receiver), lying motivated by *social acceptance* (i.e., lying to fit in with or be liked by others) and lying motivated by *self-gain* (i.e., lying to materially benefit oneself). These authors thus take a somewhat more differentiated approach than DePaulo et al. (1996), because within the two superordinate categories of DePaulo et al. (1996), they separated in a more differentiated way lying motivated by altruism from lying motivated by conflict avoidance (associated with other-oriented lies), as well as lying motivated by social acceptance from lying motivated by self-gain (associated with self-focused lies). For example, regarding lying motivated by conflict avoidance, however, it seems questionable whether conflict avoidance is only driven by protecting another person or rather selfish reasons (e.g., no desire to argue).

While the works reviewed above refer to general lying behavior in people's everyday life, there are some authors who have attempted to define different types of lies and different reasons/motives for lying more specifically in the context of close and romantic relationships. For example, in a study conducted by Metts (1989), 356 participants (all American students) were asked via two open-ended questions to describe the situation and the reason for what they have lied to a person that is very important to them. Like DePaulo et al. (1996), also Metts (1989) proposes to distinguish between (a) different types of lies and (b) different

reasons/motives of lies. Regarding different types of lies, Metts (1989) defines a *falsification* as a lie that contains completely contradictory information to the truth, a *distortion* as manipulation of true information for example due to exaggeration or minimization, and an *omission* is defined as the withholding of relevant information. A fourth category labeled as *escape* arouse for ambiguous cases. This classification of different types of lies is very similar to the categorization of DePaulo et al. (1996), even though Metts (1989) used different notations. Regarding different reasons/motives of lies in close relationships, Metts (1989) came to a differentiation between *teller-focused reasons, partner-focused reasons, relationship-focused reasons*, and *issue-focused reasons*. Teller-focused lies are motivated by the lie-tellers concerns for protecting him/herself (e.g., to protect or enhance the own image) and partner-focused lies are motivated by the partner's attitudes and behaviours (e.g., to avoid hurting the partner); unlike DePaulo et al. (1996), Metts also includes lies for the disadvantage of the close partner to this category (i.e., lies that are told to regulate the self-image of the partner when it is more positive than the lie teller believes it should be). Further, the underlying motivation of relationship-focused lies is to maintain and promote stability and harmony within the relationship (e.g., avoid conflict, relational trauma and potential disengagement). The fourth motive, labelled as issue-focused, is defined as deception motivated by the privateness or the triviality of the information (e.g., the information is too private or too trivial).

Derived from past literature, another suggestion for categorizing lies in close and romantic relationships comes from Ennis et al. (2008). For their research, they differentiated between (a) *self-centered lies*, (b) *other-oriented lies* and (c) *altruistic lies*. The definition of self-centered lies (i.e., lies told to protect the self) goes hand in hand with the well-known definition of DePaulo et al. (1996), to which Ennis et al. (2008) also referred to. However, different to DePaulo et al. (1996), they more specifically differentiated between lies that are told to benefit another person: They defined other-oriented lies as lies directed to the close person in order to protect this person, and altruistic lies as lies told to a third party outside the relationship to protect the close person.

It is important to note that this review of past literature about different types of lies and different reasons/motives of lies only includes a few studies and therefore should not be understood as an all-encompassing overview. Nevertheless, an important purpose is fulfilled: already these few studies show that not only inconsistent terms are used for different types, reasons, and motives of lies, but also the operationalization of the constructs across different studies is not uniform and sometimes even contradicting. Within the general discussion, I will point out directions for future research to may counteract this problem (see Section 5.3).

1.2 Acceptability and Frequency of Lying

Describing lies more detailed is also important, as different reasons/motives and different types are given more or less acceptance and accordingly, they are told more or less often in different contexts (e.g., Bryant, 2008; Lindskold & Walters, 1983; McLeod & Genereux, 2008). The acceptability of a lie can be defined as the degree to which a lie is experienced as permissible (e.g., Bryant, 2008). Regarding different types of lies, outright lies and complete falsifications of the truths are less accepted than more subtle lies. Those subtle lies, which are also known as *white lies*, are widely accepted as they are seen as a necessary instrument to negotiate the social world (Bryant, 2008).

However, past literature revealed that besides the type of lie, the reason/motive of a lie is a stronger predictor for its acceptability (Seiter et al., 2002). Lindskold and Walters (1983) stated that the permissibility of a lie generally ranges from altruistic motivated lies, through individualistic lies, to exploitative deception. In sum, several studies support the hypothesis that individuals report a higher acceptability for altruistic/other-oriented lies compared to self-centered lies (Lindskold & Walters, 1983; McLeod & Genereux, 2008; Ning & Crossman, 2007; Seiter et al., 2002). Now that it is clear how types and reasons/motives of lies are differentiated and how they influence the perceived acceptance of deception, past literature on the frequency of lying will be reviewed.

Serota et al. (2010) asked a representative US-sample (N = 1,000), using an open-ended format, to report all lies the participants have told within the past 24 hours (face to face and in mediated situations). It showed that participants told on average one to two lies per day

(*M* = 1.65, *SD* = 4.45). Importantly, the distribution of the frequency showed that most people reported to have told no lie at all, and 22.7% of all reported lies were told by only 1% of the sample, leading to a highly right-skewed distribution. Thus, most people do not lie at all, but most lies are told by only a few prolific liars. Their results further revealed that an increase in participants age is associated with less lying. No sex differences in the frequency of lying were found (Serota et al., 2010).

One of the most comprehensive works on the frequency of everyday lies in close and casual relationships stems from DePaulo and Kashy (1998). Following their diary-based study, in which they asked students and community members (total *N* = 147) to report their lying behavior across seven days, students reported lying in 77.4% of interactions they had with strangers and community members in 55.6% of interactions with strangers. With their friends, students and community members lied in approximately 27% of interactions, and regarding spouses, community members lied in 9.9% of their interactions. In line with their reasoning that lying violates the openness and authenticity people value in their close relations, DePaulo and Kashy (1998) found that with increasing closeness, people lie less often (see also Williams, 2001). One potential reason is that liars feel more uncomfortable with their lies when they are directed to people to whom they feel close. Additionally, they found that lies told in close relationships are relatively more often motivated by other-oriented reasons compared to self-focused reasons (DePaulo & Kashy, 1998; see also Ennis et al., 2008). Summarized, close partners lie less often to each other, but when they lie, their lies are more likely designed to protect the partner rather than to gain own advantage.

Although there is evidence that lying to loved ones is generally less accepted (e.g., Maier & Lavrakas, 1976; Ning & Crossman, 2007), DePaulo and Kashy (1998) found that the rates of lies regarding non-married romantic partners were relatively higher compared with other close relationship types; students and community members lied in approximately 33% of interactions they had with their romantic partners. Thus, the prevalence of lying in romantic relationships cannot be explained by the perceived closeness between both partners alone. Generally, within romantic relationships, lying takes a very special role. According to Cole

(2001), more than in any other relationship type, the motivation behind deception in romantic relationships is often rooted in a genuine concern for both, the relationship, and the partner, and less in the self-interest of the lie-teller. It has already been pointed out that these other-oriented and relationship-focused lies are more accepted than self-centered lies (Lindskold & Walters, 1983; McLeod & Genereux, 2008; Ning & Crossman, 2007; Seiter et al., 2002). Because more accepted lies are told more often, it could be hypothesized that especially the use of other-oriented and relationship-focused lies increase the general frequency of lying within romantic relationships compared to other close relationship types. Furthermore, DePaulo and Kashy (1998) explained the relatively high deception rates within romantic relationships with the romantic partners' increased need to impress each other, which may promotes lying also out of self-oriented reasons. Thus, the specific motivation that drives lying in romantic relationships makes context-specific testing necessary, as established findings of the prevalence of lying are not necessarily transferable from other relationship types (see also Cole, 2001), remaining with the quote from Guthrie and Kunkel (2013), who wrote that "In essence, researchers should examine what specific factors of relationships or personality make deception more or less prevalent and how the context of the relationship may change deceptive behavior." (p. 155).

2. Dishonesty in Romantic Relationships

A romantic relationship—if we have one—plays an essential role in our life and regarding the preservation of humanity not only for us, but for all of mankind. But reproduction is not the only characteristic necessary to speak of a romantic relationship. *Bidirectional interdependence*, thus, the reciprocal influence of two interaction partners, is a defining feature of any kind of a social relationship. Intimacy increases, when this interdependence is *persistent*, thus holds over time. In defining a romantic relationship, persistent interdependence is necessary, but not sufficient. When additionally considering each other as *special and unique*, a more trivial social relationship turns into a personal relationship. With increased *influence and intensity*, a personal relationship becomes a close relationship. The final step that a close relationship turns into a romantic relationship includes some kind of *sexual passion* that is expressed and shared.

In sum, a romantic relationship (hetero- as well as homosexual) is characterized by strong, sustained, bidirectional influence over a broad range of interactions, with the possibility of sexual involvement (Bradbury & Karney, 2014; see also Miller, 2015).

The above presented definition of romantic relationships purposely does not specify the status of the relationship (e.g., dating partners, cohabitants, or married). Regarding the relationship status, specific selection effects concerning religiosity or socioeconomic status seem to play a crucial role in predicting, for example, which couples prefer to marry, while other prefer to cohabit with each other. Because the focus of this dissertation and all included studies should not be on factors such as religiosity and socioeconomic status, the relationship status is neglected in the following and instead, all forms of relationships are summarized under the term *romantic relationship*.

As already stated (see also Section 1.3), DePaulo and Kashy (1998) found that non-married but romantic partners reported to lie during 33% of their interactions. Despite extensive research, only one additional study is known that specifically examined the absolute frequency of lying in romantic relationships: Guthrie and Kunkel (2013) asked their participants (N = 67 American students), of which all were in a romantic relationship with an average relationship length of 22.5 month (SD = 23.47), to report all lies they have told to their romantic partner during a questioning period of seven days. Across all diaries, the authors identified a total of 327 deceptive acts. This correspondents to an average rate of 4.88 deceptive acts per participant across the seven days, respectively 0.7 deceptive acts per participant per day that were directed to their romantic partners. The following section about underlying explanations for deception in romantic relationships should explain how these relatively high deception rates within romantic relationships emerge although romantic partners highly value the norm of honesty within their relationships.

2.1 Underlying Explanations for Deception in Romantic Relationships

Theoretical approaches explaining the use of deception in romantic relationships are majoritarian build on *social exchange perspective*. As proposed by Kelley and Thibaut (1978), this theoretical framework seeks to explain social behavior by examining the exchange of

rewards and costs in interpersonal relationships. According to this perspective, which is also known as *interdependence theory*, individuals engage in social interactions with the goal of maximizing their rewards and minimizing their costs. In romantic relationships, rewards can include various positive outcomes such as emotional support, love, material resources, and social status. Costs, on the other hand, refer to negative aspects such as time, effort, compromises, and emotional stress. The authors state that the outcome of a relationship arises from adding up the perceived rewards and the perceived costs (Kelley & Thibaut, 1978).

Based on social exchange perspective, Cole (2001) postulates three potential explanations underlying deceptive behavior within romantic relationships. The first explanation is based on the process of *reciprocity*, meaning the adjustment of resources vis-à-vis the allocation of others' contributions. Given the assumption that people like to reciprocate in the same kind, this indicates that if (dis)honesty emanates from one partner, the other part responds in the same vein. Therefore, Cole (2001) predicted that the own use of deception is related to the belief that the romantic partner is also dishonest. Especially within romantic relationships with a lower outcome (with lower levels of satisfaction and commitment), people are prone to lie more frequent and therefore, to also expect an increased frequency of lying from their romantic partners (Cole, 2001).

Furthermore, Cole (2001) based another potential explanation for the use of deception in romantic relationships on the fact that not telling the truth sometimes helps to *avoid punishment*. One the one hand, full disclosure can be rewarding when this leads to increased intimacy between both partners (see also Lin & Utz, 2017). On the other hand, telling the truth can be costly, for example, when this results in one's own unfavorable portrayal or when telling the truth would lead to the disapproval of the romantic partner; then, dishonesty could help. Successfully hiding costly information helps to foster a positive image in the eyes of the romantic partner, leading to more satisfied relationships. Further, deception may help to protect the romantic partner from hurt or it can help to avoid a conflict. Consequently, Cole (2001) hypothesized that with an increased degree to which romantic partners are perceived to respond adversely when confronted with undesirable information, the more likely the other part will lie.

From this, Cole (2001) further deduced that there is a negative association between relational deception and one's self-reported intimacy and perceived understanding within the relationship.

Finally, Cole (2001) focused on an individual's *intimacy needs*. Based on attachment theory (cf. Hazan & Shaver, 1987), Cole (2001) noted that deception could be used to meet the needs of avoidantly attached individuals (i.e., individuals who feel uncomfortable with intimacy). For people with an avoidant attachment style, dishonesty can be deliberately used to establish or maintain distance from a romantic partner. Also, for anxious attached individuals (i.e., individuals who feel fear for being alone and unloved), dishonesty could be beneficial if deception is used to manage the own impression and to regulate the interest, closeness, and devotion of the romantic partner.

As a final note, Cole (2001) stated that all three possible explanations underlying deception should not be seen as independent approaches. They are all build upon the underlying assumption that telling the truth could be costly "when partners do not engage in similar exchange of information (reciprocity), react poorly to it (avoid punishment), or when honesty does not help fulfill their attachment needs (intimacy needs)." (Cole, 2001, p. 113). If these costs outweigh the benefits of honest communication, an individual is more likely to lie.

2.2 Consequences of Deception in Romantic Relationships

Past research revealed a view works that have examined the consequences of lying, but some of them without referring to romantic relationships. A direct effect of lying (whether discovered or undetected) is that the teller of a lie feels more uncomfortable and experiences the conversation as less pleasant compared to honest conversations (DePaulo & Kashy, 1998). In addition, a phenomenon called *deceiver's distrust* was investigated (Sagarin et al., 1998). The authors showed that in dyadic relationships, the own frequency of lies effect the perception of the partner's frequency of lies in the way that increased own deception result in the perception that the partner is also less honest. The authors based one possible explanation for this phenomenon on the so-called *false consensus effect*, which manifests itself in the tendency to infer the own belief, behavioral intention, attitude, or behavior to others (Sagarin et

al., 1998). Summarized, lying can be detrimental to a relationship, even if the liar is the only person who knows that a lie has been told.

Long-term consequences for the general relationship quality have also been examined. For example, research by DePaulo and Kashy (1998) showed that participants who reported increased deceptive behaviour perceived lower levels of relational closeness to their interaction partners. In this area, there are also studies that have focused specifically on romantic relationships. Thereby, most of the research consistently indicated dishonesty to be disadvantageous, both, for the individuals involved and the overall dynamics of the romantic relationship. Research by Cole (2001) showed that perceived dishonesty (emanated from the romantic partner as well as from oneself) was significantly linked to decreased relational satisfaction, commitment and intimacy. One study by Peterson (1996) showed a significant negative correlation between self-reported own frequency of lying with relationship satisfaction. The same was true for estimated levels of partner's dishonesty. Considering different reasons/motives of lying, Metts (1989) found that individuals who reported higher levels of partner-focused lies had significantly higher ratings of perceived commitment and closeness to their partners compared to those who reported higher levels of self-centred lies.

McCornack and Levine (1990), who investigated a sample of 190 students who recently uncovered a lie of a close partner, found that participants attributed importance to the information that was lied about was a strong predictor for the termination of the relationship. Nearly two-thirds of the sample indicated that the discovery of the lie contributed to ending the relationship, whereby the recipient of the lie has actively initiated the separation in all cases (McCornack & Levine, 1990). This finding has a special importance for romantic relationships, as research found that when people tell serious lies, they do this most likely regarding their closest partners than to anyone else (DePaulo et al., 2004).

In summary, it can be said that lying in close and romantic relationships generally has negative consequences. The lie teller experiences discomfort (DePaulo & Kashy, 1998) and loses trust in the other person (i.e., *deceiver's distrust*; Sagarin et al., 1998), further leading to decreased relationship satisfaction (Peterson, 1996), closeness (DePaulo & Kashy, 1998),

commitment and intimacy (see also Cole, 2001). Ultimately, the discovery of a serious lie can result in the dissolution of the relationship (McCornack & Levine, 1990). Notability, there are also other areas in which both, research and practice, are interested in the prevalence of deception and its consequences; one of these further forms of dishonesty is academic cheating.

3. Academic Cheating

A number of researchers have put forward various definitions for investigating academic cheating. Stephens (2008, p. 137) has stated that “cheating can be defined broadly as the use of unauthorized or unacceptable means in any academic work.” Daumiller and Janke (2020) agreed as they defined academic cheating as an intentional break of the rules, for example, by using unauthorized notes. For the following work, however, the somewhat more broadly defined understanding of Newstead et al. (1996) will be used as a basis, who defined academic cheating as cheating on coursework including plagiarism, data manipulation and collaborative cheating, cheating on exams including collusion, lying for special consideration (for example lying for extension), and noncollaborative cheating in exams (for example writing off something).

Over fifty percent of students reported to have engaged in academic cheating at least once during one academic year (e.g., Haines et al., 1986; see also Freiburger et al., 2017). However, cheating can lead to significant consequences, particularly in terms of the student's ethical and moral principles. Non-cheaters are also affected because they may feel unfairly treated when they receive lower grades compared to those who cheated (Iqbal et al., 2021). Moreover, cheating can impact the education system as a whole, because it undermines the validity of academic tests (McCabe, 2005; McCabe et al., 2001). Thus, institutions must react to the misconduct.

When the appeal is made that institutions must react, of course, this raises the question of how to do it. Research already revealed that with an increasing difficulty in the academic context, students showed increased academic cheating (Brimble & Stevenson-Clarke, 2005; Freiburger et al., 2017). Amongst others, also a higher perceived unfairness of a test situation was found to be associated with increased academic cheating (Leiner et al., 2018). Thus, one

could argue that the academic environment should be made as easy and stress-free as possible to prevent cheating but obviously, this can't be the solution to the problem.

Since academic cheating is often described as motivated behavior because it involves a conscious decision to break rules to gain an advantage (Anderman, 2007; Anderman & Koenka, 2017; Anderman & Murdock, 2007; Daumiller & Janke, 2020; McCabe et al., 2001), students' motivation is assumed to play an important role in whether they decide to cheat or not. The learning goal theory offers such a motivational perspective on academic cheating.

3.1 Learning Goals

Learning goals describe what motivates students to put effort into their work, whereby a distinction between a *mastery (or learning) goal orientation* and a *performance (or extrinsic) goal orientation* is made (Dweck, 1986; Dweck & Leggett, 1988; Elliot, 2005). Students with a stronger mastery goal orientation have a strong desire to learn and to acquire a profound understanding of the subject matter. While this learning goal is described as adaptive, a performance goal orientation is described as maladaptive, because students with a stronger performance goal orientation prioritize showcasing their competence relative to others and would like to enhance their perceived ability status without the motivation to really understand the content (Daumiller & Janke, 2020; Dweck, 1986; Elliot, 2005).

Over time, this theoretical framework was further developed. Elliot and McGregor (2001) proposed a 2 (mastery vs. performance) x 2 (approach vs. avoidance) goal framework, which further separates the mastery goal into a *mastery approach goal* and a *mastery avoidance goal*, and the performance goal into a *performance approach goal* and a *performance avoidance goal*. The main difference of this further differentiation in approach vs. avoidance goals is the valence of the competence (i.e., approach goals are valanced positive and avoidance goals are valanced negative). For example, students with a stronger performance approach goal orientation are motivated to attain specific outcomes, such as receiving recognition for their performance and their grades; their primary aim is to appear competent and to achieve a positive outcome. Students with a stronger performance avoidance goal orientation are

primarily driven by anxiety regarding the perception of incompetence so they strive to avoid negative comparisons; their primary aim is to avoid being viewed as incompetent.

One line of research has identified these learning goals to be valid predictors for academic cheating. In literature, it is widely accepted that students with a stronger performance goal orientation are assumed to cheat more likely within the academic context, compared with students with a mastery approach goal orientation, independent of their approach or avoidance orientation (Jordan, 2001; Van Yperen et al., 2011; see also Rettinger et al., 2004). The basic argument is that cheating for students who are mastery-oriented would not assist them in their goal to truly understand the learned content. By contrast, for students who are performance-oriented, independent of their approach or avoidance orientation, cheating would help to achieve their goal (i.e., approach success to others, respectively avoid failure; e.g., Anderman, 2007). However, there is also first evidence that the performance approach goal and the performance avoidance goal differ in the way that the performance avoidance goal is more closely related to academic cheating. In this vein, one study conducted by Janke et al. (2019) showed that academic cheating was significantly positively linked to the performance approach goal, but negatively linked to the performance avoidance goal.

4. The Lie-Telling Personality Type

„As social psychologist, we (...) do think that certain situations and people elicit lying. But we expect personality to predict lying as well." (Kashy & DePaulo, 1996, p. 1047). This quote has a special meaning for this dissertation project. In short, as a social psychologist, one generally assumes that individuals react in response to situational factors. Nevertheless, personality also has a significant influence on human mind and behavior. During the whole research process of the here presented dissertation, it appeared that the two disciplines of social psychology and personality psychology, in some instances, conduct research side by side rather than adopting a more integrative perspective (e.g., Snyder & Monson, 1975; see also Zettler et al., 2013). For the investigated research question, this implies that past research examining the influence of personality on deceptive behavior have done so in a way that did not consider the concrete *social context*. Commonly, studies applied several cheating

paradigms from behavioral ethics to measure dishonesty (e.g., Conrads et al., 2013; Gylfason et al., 2016; for a meta-analysis, see Gerlach et al., 2019). For example, in a variant of a dice-roll task, participants are asked to roll a die in private and then report in public whether they rolled a previously defined target number associated with a monetary gain. Thus, when rolling a fair, six-sided die, the baseline probability of winning is 1/6; on an aggregated level, significant deviations above or below can be operationalized as dishonest behavior. Other classical examples are coin toss tasks or anagram tasks (for a meta-analysis, see Gerlach et al., 2019).

Critically, in most of these studies, it is not obvious to the participants who they are playing against. Moreover, these cheating paradigms mainly measure self-oriented deception (e.g., deception to gain extra money), but as already pointed out (see also Section 1.2), especially regarding close interaction partners other-oriented lies are told more frequent (McLeod & Genereux, 2008; Ning & Crossman, 2007; Seiter et al., 2002). Some other studies about the predictive value of several personality traits on the frequency of lying have applied self-report scales as deception measures (e.g., Azizli et al., 2016; Hart et al., 2020; Jonason et al., 2014). Here, it also can be critically noted that these works leave open, trough the lack of more detailed instructions or item formulations, to whom the measured lying behavior refers to. Therefore, as one basic claim of this dissertation, the generalizability of previous findings about which personality type is the most likely to lie to more specific social contexts is in question.

Kashy and DePaulo (1996) were one of the first who investigated the question of whether there is a “lie-telling personality type” (p. 1037). Within their study conducted with undergraduates, they assessed participants self-reported frequency of overall lies regarding all their social interaction partners they have met during the past seven days. They found that people higher in *manipulativeness* (i.e., people with higher scores openly express their readiness to employ manipulative tactics like deceit and ingratiation and do not concern with conventional morality) report to tell significantly more lies. Further, people with higher scores on *public self-consciousness* and *other directedness* (i.e., people with higher scores are highly interested in their physical appearance and the impressions they make on others) were found to also report significant more lies. *Extraversion* (i.e., people with higher scores are more

sociable, talkative, and assertive) proved to be a further significant predictor in the way that more extraverted people reported to tell more lies. Self-esteem, social anxiety, and social desirability were uncorrelated to the self-reported frequency of lies, leading the authors to conclude that “People who tell more lies than others are people who care more than others about the impressions they are creating in social life. They are also sociable sorts who are more likely to be extraverts than introverts.” (Kashy & DePaulo, 1996, p. 1048). Based on this first description of the lie-telling personality type, further authors investigated several personality traits, whereby a large part of research focused on the Dark Triad traits (at a subclinical level).

4.1 Dark Triad

The Dark Triad traits—which were introduced to the literature by Paulhus and Williams (2002) —include *Machiavellianism* (i.e., people with higher scores have a cynical and unprincipled mindset and believe that manipulation is the key to achieving personal success), *psychopathy* (i.e., people with higher scores exhibit heightened impulsivity and a strong inclination towards seeking thrills, coupled with lower levels of empathy), and *narcissism* (i.e., people with higher scores have a high need for grandiosity, entitlement, dominance and superiority; for a review, see Furnham et al., 2013).

Applying a self-report scale that measured general high-stakes deception, Azizli et al. (2016) found within their sub-clinical sample that all Dark Triad traits are significantly positively correlated with high-stakes deception, but only Machiavellianism added unique variance. Considering the social context, they also found all Dark Triad traits to be positively associated with self-reported lying withing a hypothetical mating scenario, as well as within a hypothetical scenario involving academic cheating (see also McLeod & Genereux, 2008). One study conducted by Jonason et al. (2014) also found that all Dark Triad traits are significantly positively related with the general number of self-reported lies, as well as with intersexual deception (i.e., lying to the opposite sex) and intrasexual deception (i.e., lying to the same sex); especially Machiavellianism was significantly correlated with a broad spectrum of intersexual deception tactics related to physical appearance and sexual intentions (Jonason et al., 2014). Furthermore,

there are several studies that specifically focused on potential correlations between the Dark Triad traits and deception within the *context of dating*.

For example, people higher in Machiavellianism were found to use deceptive tactics more often in attracting potential dating partners (Dussault et al., 2013) and to secure sex (Jonason et al., 2009). Another study found Machiavellianism and psychopathy to be significantly positively related with self-reported deception rates in the context of mating (Baughman et al., 2014). Further, research of Brewer et al. (2015) on heterosexual women indicated that all Dark Triad traits are significantly correlated with higher sexual infidelity but in contrast to the findings reviewed above, the results revealed that narcissism and psychopathy had a stronger predictive value compared to Machiavellianism (Brewer et al., 2015). Another study based on self-report scales only found psychopathy to significantly predict men's and women's self-reported infidelity (Sevi et al., 2020). Summarized, most studies emphasized the role of Machiavellianism in predicting (dating) deception (Azizli et al., 2016; Dussault et al., 2013), but psychopathy and narcissism were also found to be significantly positively correlated with deception (Baughman et al., 2014; Jonason et al., 2014; Sevi et al., 2020).

A few studies have investigated the Dark Triad traits in the *academic context*. One study conducted by Esteves et al. (2021) revealed that people higher in narcissism reported signifacant higher rates of academic cheating. Further, they showed Machiavellianism to be also positively related to self-reported cheating, while psychopathy was unrelated (Esteves et al., 2021). Contrary, other studies postulated that of all three Dark Triad traits, psychopathy displays the most influential predictor for academic cheating (Williams et al., 2010; Zhang et al., 2018). A study by Cheung and Egan (2020) found all Dark Triad traits to be significantly positively related with a self-reported academic cheating. Thus, also regarding academic cheating, results are mixed. In addition to the Dark Triad traits, there is another theoretical personality model that has received a lot of attention in past deception research, namely the Big Five Factor model of personality.

4.2 Big Five

The Big Five Factor model of personality is a prominent theoretical framework used to describe the human personality. It has emerged as one of the most widely accepted and influential models and is commonly measured with the NEO Five-Factor Inventory created by Costa and McCrae (1985). The model includes the factors *Neuroticism* (i.e., people with higher scores have a heightened sensitivity to stress and the experience of negative emotions such as anxiety or depression), *Extraversion* (i.e., people with higher scores seek the company of others and are described as outgoing, assertive, and energetic), *Openness to experiences* (i.e., people with higher scores appraise a variety of experiences as for example art and adventure and are described as intellectual curious, creative, and open-minded), *Conscientiousness* (i.e., people with higher scores are described as self-disciplined, organized, and goal-directed), and *Agreeableness* (i.e., people with higher scores are empathic, trusting, and value harmony and therefore like to cooperate).

Following Kashy and DePaulo (1996), several other studies followed that revealed significant positive associations between Extraversion and deception. For example, Gylfason et al. (2016) applied a cheating paradigm to measure participants deceptive behavior (i.e., the Gneezy's cheap talk game). They found a significant positive association for more extraverted people and their deceptive behavior, but also Agreeableness proved to be a significant predictor in the way that people lower in Agreeableness lied more frequent (Neuroticism, Openness to experiences, and Conscientiousness were not significantly correlated with deception). Conrads et al. (2013) applied a classical die-roll task and found that people higher in Extraversion and Neuroticism were more likely to lie (Openness to experiences, Conscientiousness and Agreeableness were unrelated). In the same vein, Michikyan et al. (2014) found that young adults with higher levels of Neuroticism and Extraversion tend to portray their idealized and false self to a greater extent on Facebook, which they also interpreted as deceptive behavior. Moreover, Jackson and Francis (1999) measured socially desirable response behavior as a proxy for deception and found that people with higher scores on Neuroticism more strongly "fake good".

Summarized, most research on the Big Five highlighted the role of Extraversion and Neuroticism in predicting general deception. Openness to experiences seems to play a neglectable role in predicting deception, and the pattern for Agreeableness and Conscientiousness is mixed. Regarding the latter two traits, the literature reviewed above revealed Agreeableness and Conscientiousness to predict lying in some studies, but not in all. Interestingly, a recent study conducted by Hart et al. (2020) revealed that of all Big Five traits, only Agreeableness is significantly negatively associated with the self-reported frequency of vindictive lies. Further, only Conscientiousness was significantly negatively correlated with the self-reported use of altruistic lies. To fully report the results, it should be mentioned that self-serving lies were significantly predicted by all Big Five traits in the expected direction (Hart et al., 2020). The claim that there may be interactions between personality and specific reasons/motives of lies is also supported by McLeod and Genereux (2008), who found that for different reasons/motives of lies, a unique set of personality explains most variance.

With a closer look to academic cheating, again, a mixed pattern concerning the predictive value of the Big Five traits emerged, which is why the meta-analysis of Giluk and Postlethwaite (2015) that includes 17 studies (N = 3448) on the association between the Big Five traits and academic cheating probably provides the most meaningful result. They found that Conscientiousness and Agreeableness displayed the strongest relationship to academic cheating, in the way that people higher in these traits showed decreased cheating (see also Cuadrado et al., 2021; De Vries et al., 2011). For Neuroticism, Extraversion, and Openness to experiences, the 95% confidence intervals were close to zero/included zero, which is why the authors concluded that these correlations cannot be observed universally in all academic situations.

Neglected in the research reviewed above is the fact that more recent research has revealed a cross-culturally replicated set of *six* factors labeled the HEXACO model of personality (for a review, see Ashton & Lee, 2007). In addition to the Big Five dimensions, the HEXACO model adds another factor labeled as Honesty-Humility.

4.3 Honesty-Humility

Honesty-Humility is defined as “the tendency to be fair and genuine in dealing with others, in the sense of cooperating with others even when one might exploit them without suffering retaliation.” (Ashton & Lee, 2007, p. 156). The most widely used measurement instrument, the HEXACO Personality Inventory crated by Ashton and Lee (2009), defines Honesty-Humility by the four dimensions *Sincerity* (i.e., the tendency to be genuine in interpersonal relations), *Fairness* (i.e., the tendency to avoid fraud and corruption), *Modesty* (i.e., the tendency to be unassuming), and *Greed Avoidance* (i.e., the tendency to be uninterested in high status symbols and wealth).

Generally, the nomological network of the Honesty-Humility factor is already well researched, indicating that Honesty-Humility mainly maps to the outcome domain of exploitation. Zettler et al. (2020), who conducted an extensive large-scale meta-analytic investigation operationalized exploitation through immoral behavior (i.e., cheating, counterproductive work behavior, and unethical decision making), short-term mating (i.e., engaging in sexual intercourse without long-term commitment), dark traits (i.e., a prevailing inclination to maximize personal benefits without considering/intentionally causing harm to others), active cooperation (i.e., fairness and loyalty), and pro-environmental behavior (Zettler et al., 2020); people higher in Honesty-Humility are assumed to show decreased immoral behavior, short-term mating and lower scores on the dark traits, but to show increased active cooperation and pro-environmental behavior.

As Reinhardt and Reinhard (2023) already emphasized, one line of research specifically focused on Honesty-Humility and actual deceptive behavior. Commonly, these studies applied several cheating paradigms from behavioral ethics to measure participants actual dishonest behavior (i.e., dice-roll tasks, coin toss tasks and anagram tasks; for a meta-analysis see Gerlach et al., 2019). The negative association between Honesty-Humility and deception reliably emerged across various incentive structures (i.e., monetary gains and losses, avoiding tedious work), modes of data collection (i.e., lab, web, longitudinal), and baseline probabilities of winning (e.g., Hilbig & Zettler, 2015; Schild et al., 2020). Notably, Honesty-Humility has

consistently emerged as the primary predictor for dishonest behavior, outperforming the remaining HEXACO factors and all other Big Five personality factors. Moreover, one study demonstrated that the relationship between the Dark Tetrad (Dark Triad traits plus Sadism) and actual dishonest behavior was completely nullified when accounting for the predictive value of Honesty-Humility (Pfattheicher et al., 2018). Given that Honesty-Humility and the Dark Triad share common variance (Lee et al., 2013), this finding underscores the unique role of Honesty-Humility in predicting dishonesty. Furthermore, a re-analysis of 16 studies examining dishonest behavior also revealed Honesty-Humility to be the major predictor, with no other personality trait from the HEXACO or Big Five providing any incremental validity beyond the Honesty-Humility factor (Heck et al., 2018). Moreover, Honesty-Humility was also shown to be negatively linked with self-reported sexual infidelity (Bourdage et al., 2007; Schild et al., 2020).

However, the transferability of these established findings—mostly investigated by applying game-theoretical paradigms and/or self-report scales not sensitized for the social context—to more specific fields as for example deception within romantic relationships or academic cheating is in question (see also Section 1.3 and Section 4.). Especially in times of replication crisis (e.g., Open Science Collaboration, 2015), we consider it particularly necessary to test already established correlations in a context-specific way before postulating their generalizability to the corresponding situation. Therefore, we (a) conducted a series of 11 preregistered online studies with different methodological approaches to test the hypothesis that Honesty-Humility is negatively linked to dishonesty within romantic relationships (Appendix A)[1], and (b) we conducted one preregistered online study in which we tested the predictive value of Honesty-Humility (and learning goals) on academic cheating (see Appendix B)[2]. Both research projects will be reviewed in the following.

[1] Raw data, analysis codes, Supplemental Material and links to the preregistration protocols of all studies can be found in the OSF (https://osf.io/qf79t/).

[2] Raw data, analysis codes, Supplemental Material and links to the preregistration protocols of all studies can be found in the OSF (https://osf.io/tcen4/).

4.3.1 Honesty-Humility and Relationship-Based Dishonesty. The following procedure and results are described in detail in Reinhardt and Reinhard (2023). All studies were conducted with communal samples, where all participants confirmed that they were in a romantic relationship at the time of the survey.

Within the first eight preregistered online studies of our series of 11 studies, we applied a variety of different self-report measurements on dishonesty in romantic relationships (i.e., closed-ended self-report scales, scenarios, open questions). In sum, four studies applied several closed-ended self-report scales, focusing on different perspectives of lying (i.e., own and partner's dishonesty), and different reasons/motives of lies (i.e., other-oriented and self-oriented lies), as for example the scale of Ennis et al. (2008; see also Section 1.1). Importantly, the used scales were created (or self-adapted) in a way that they specifically asked for own dishonesty towards the romantic partner, respectively dishonesty emanated by the romantic partner. A measurement for estimated levels of partner's dishonesty was included because in addition to the predicted negative association between Honesty-Humility and own dishonesty, we also predicted a negative association between Honesty-Humility and partner's dishonesty (i.e., dishonesty emanated by the romantic partner). The later hypothesis was built upon the theoretical assumption of social projection: that is, people expect others to be like them (Krueger, 2007). This argumentation is very similar to the theoretical explanation of Cole (2001), who explained the phenomenon of deception within romantic relationships based on the process of reciprocity (see also Section 2.2). Following this, people higher in Honesty-Humility should show decreased relationship-based deception and consequently should also consider their romantic partners to show decreased deception. To further consider the theoretical reasoning of Hart et al. (2020) and McLeod and Genereux (2008), who postulated an interaction between personality and different reasons/motives of lies (see also Section 4.2), we explicit measured the frequency of different reasons/motives of lies. However, we assumed that every lie violates the openness and authenticity people value from their romantic partners (e.g., DePaulo & Kashy, 1998; DePaulo et al., 1996), which is why we predicted negative correlations

between Honesty-Humility and both reasons/motives of lies (i.e., other-oriented and self-oriented lies).

Because the first two studies were solely based on closed-ended self-report scales, criticism can be raised that dishonesty is only measured in an abstract and global way. Based on this critique, McLeod and Genereux (2008) developed a scenario-based method to build in the advantage of describing in more detail different reasons/motives of lies (see also Section 1.1). Thus, within one preregistered online study, we additionally applied this scenario-based method. In these scenarios, different reasons for lying towards the romantic partner are described (i.e., lying motivated by altruism, lying motivated by conflict avoidance, lying motivated by social acceptance, and lying motivated by self-gain). After reading each scenario, participants were asked for their perceived acceptability and likelihood of lying.

Nevertheless, the additional use of the scenarios leaves criticism open, namely that these methods do not measure specific, individual lies that took place over a determined time span. Hence, within two further preregistered online studies, we additionally applied a methodological procedure in which participants were asked directly (via one open question) about their own and their partner's frequency of lying across a certain time span.

In the same vein, in an eighth preregistered online study, we measured participants deception in real-time over a determined time period of five days by applying a diary-based approach. In diary studies, participants are asked to frequently report their lies towards more or less close interaction partners. Our participants were asked to report all lies towards their romantic partner, whether face-to-face, in writing, by phone, or over the internet.

An interim conclusion across these eight studies is that higher levels of Honesty-Humility were significantly associated with decreased levels of own relationship-based dishonesty, as well as with decreased estimations of partner's dishonesty, with the latter finding supporting the assumption of an underlying social projection account. Against the theoretical arguments of Hart et al. (2020) and McLeod and Genereux (2008) who postulated an interaction between personality and different reasons/motives of lies, but supporting our assumption that Honesty-Humility is overall negatively correlated with deception in romantic relationships, the

negative association was found for other-oriented lies and self-oriented lies measured with the Ennis et al. scales (2008), and also measured with the scenarios of McLeod and Genereux (2008).

Although these first eight studies provided reliable evidence in support of our hypotheses', only self-reported deception (vie closed-ended self-report scales, scenarios, and open frequency measures) was assessed, which allows for critique on the transferability of the found results to actual behavior. Accordingly, we followed up our series of studies with three more studies measuring actual deceptive behavior. In doing so, we have (at least in two of the three studies) oriented ourselves to classical cheating paradigms from behavioral ethics (i.e., an anagram task and a die-roll task). Importantly, due to the use of several cover stories, we transferred these paradigms to the context of romantic relationship relationships. The first study that measured actual relationship-based deception operationalized deception due to participants' decision to forward a deceptive email to their romantic partners in return for a financial reward. In the second study, participants were invited to take part in a study involving a competition with their romantic partner in an intelligence-task; the task consisted of an anagram task with only three solvable and five unsolvable anagrams. Thus, reporting a number greater than three correctly solved anagrams was operationalized as dishonest behavior towards the romantic partner. The final study applied a die-roll paradigm (see also Section 4.), with the important modification that participants were told that their romantic partners will prepare the same dice roll task and only the one who performs better will receive a bonus payment at the end. In doing so, significant deviations from the expected value (which is 3.5) can be operationalized as deceptive behavior towards the romantic partner on an aggregated level. These studies also reliably revealed significant negative correlations between Honesty-Humility and actual relationship-based deception.

Again, Honesty-Humility proved to be a reliable predictor for relationship-based dishonesty. Importantly, independent of the underlying methodological approach, the negative association between Honesty-Humility and the deception measure remained robust across studies even under control of *Honesty-Propriety*, which is a further honesty-related personality trait

that emanated from another recently developed, six-dimensional personality model called the Big Six model of personality (Saucier, 2009). According to Saucier (2009), the lexical procedure used to develop the HEXACO model of personality overlooked adjectives with highly evaluative connotations, resulting in what he termed the "narrow selection-based six-factor model" (p. 1577). To address this limitation, Saucier (2009) proposed a more wideband six-factor model that is assumed to be applicable across languages and populations (see also Thielmann et al., 2017). Within the Big Six model, the Honesty-Humility factor is replaced by Honesty-Propriety, which is assumed to represent a broader factor and thus to predict a broader set of variables, especially those related to negative valence and socially disapproved risk-taking. However, in line with past literature (e.g., Heck et al., 2018; Hilbig & Zettler, 2015; Pfattheicher et al., 2018; Schild et al., 2020), the here presented research revealed that the Honesty-Humility factor is the key predictor for the specific field of relationship-based dishonesty, because Honesty-Propriety did not reliably proved to be a significant predictor; in some studies, the predictive value of Honesty-Propriety did not remain robust under control of the Honesty-Humility factor (see Section 5.1 for a more detailed discussion about the role of the Honesty-Humility factor for deception).

4.3.2 Honesty-Humility and Academic Cheating. Within the second research project, which is described in detail in Reinhardt et al. (2023a), we have conducted another preregistered online study on the predictive value of Honesty-Humility focusing specifically on academic cheating. While most studies in this field so far focused on the Big Five traits and revealed that lower levels of Conscientiousness and Agreeableness predict academic cheating (Cuadrado et al., 2021; De Vries et al., 2011; Giluk & Postlethwaite, 2015), more recent studies further revealed that also Honesty-Humility is negatively correlated with counterproductive academic behavior, including cheating and plagiarism (De Vries et al., 2011; Van Rensburg et al., 2018). Moreover, as already pointed out (see also Section 3.1), learning goals are also dealt as valid predictors for academic cheating (Janke et al., 2019; Jordan, 2001; Rettinger et al., 2004; Van Yperen et al., 2011). Interestingly, because Honesty-Humility and learning goals were found to share a substantial amount of variance (Dinger et al., 2015), we raised the

question if learning goals could explain any significant incremental variance of academic cheating that goes beyond the explained variance of the predictor Honesty-Humility.

Therefore, within our student sample, we assessed Honesty-Humility and self-reported academic cheating behavior, including a wide range of different behaviors as for example plagiarism, the use (and distribution) of unauthorized information, making false personal excuses ("Lying about medical or other circumstances to get an extended deadline or exemption from a piece of work") and collaborative cheating ("In a situation where students mark each other's work, coming to an agreement with another student or students to mark each other's work more generously than it merits"). Consistent with our prediction, we found a significant negative correlation between Honesty-Humility and cheating behavior among students. Specifically, we observed that students who scored higher on Honesty-Humility reported decreased academic cheating. Most importantly, our results revealed that the predictive value of Honesty-Humility remained significant, even when controlling this association for the different learning goals (see also Section 3.1). Thus, Honesty-Humility appeared to be an important and reliable predictor of academic cheating behavior.

Regarding the measured learning goals, only the learning goal of work avoidance revealed a predictive value that goes beyond the Honesty-Humility factor. University students frequently justify their cheating behavior, despite being aware of its ethical problems, by attributing it to time pressure and a heavy workload (McCabe et al., 2001; Newstead et al., 1996). Consequently, cheating behavior may decrease due to reducing the workload. However, as already pointed out (see also Section 3.), it cannot be the goal of any learning environment to be as simple as possible. Therefore, by helping to better understand the personality structure of people who are the most likely to lie, this work provides useful information that can help to better target interventions that should prevent students from cheating, as discussed in more detailed in the general discussion (see Section 5.1). Moreover, this work questions the correlation between learning goals and academic cheating as postulated by many authors (Janke et al., 2019; Jordan, 2001; Rettinger et al., 2004; Van Yperen et al., 2011), as more global constructs like the Honesty-Humility factor make this association disappear.

To further investigate the lie-telling personality type within different social contexts, the last work focused on the personality trait belief in a just world, which was already shown to be significantly correlated with general deception, but never with reference to romantic relationships.

4.4 Belief in a Just World

The *just world hypothesis*, initially introduced by Lerner and Simmons (1966), suggests that individuals hold a belief in a fair and just world by believing that they receive what they deserve and deserve what they receive. This belief in justice emerges during childhood as children learn to regulate their actions to obtain rewards and to avoid punishment. Due to this norm-compliant behavior, children develop a personal contract with the world and the expectation that continued compliance with norms will lead to further rewards. People who strongly believe in a just world perceive their environment as structured and consistent, contributing to a sense of controllability and stability of one's own life (Lerner, 1965, 1980).

Research operationalizes people's belief in a just world as stable personality trait. Dalbert (1999) has developed the most extensively used and studied self-report tool for assessing dispositional belief in a just world. This scale distinguishes between two dimensions: the *personal belief in a just world*, which is defined as an individual's belief that they personally will be treated fairly, and the *general belief in a just world*, which is defined as an individual's overall tendency to perceive the world as fair and just.

There exists some initial evidence that the personal belief in a just world is associated with lower levels of dishonesty. Across two studies, Schindler et al. (2019) showed that personal belief in a just world significantly predicted own dishonest behavior in that people with a stronger personal belief in a just world showed less dishonesty in a dice task and an anagram task. In a broader sense, the authors explained this finding with the increased importance of ethical behavior (i.e., being honest) for people who are strongly committed to their personal contract. However, as already mentioned (see also Section 4. and Section 4.3), the problem arises that these studies applied game-theoretical paradigms not sensitized for the social context. Given that with increasing closeness between two interaction partners dishonesty

decreases (e.g., DePaulo & Kashy, 1998; Williams, 2001), it is questionable whether the found negative correlation between people's personal belief in a just world and dishonesty tested with game theoretical paradigms in which participants played against anonymous players also persist in the context of romantic relationships. Therefore, within another research project of this dissertation consisting of 11 (mostly) preregistered online studies, we aimed to test the hypothesis if people's personal belief in a just world is negatively associated with dishonesty in romantic relationships (Appendix C).[3]

4.4.1 Belief in a Just World and Relationship-Based Dishonesty

The theoretical argumentation why people's belief in a just world should be negatively correlated with relationship-based dishonesty can be logically deduced from just world hypothesis: Given that romantic partner's strongly value the prevailing norm of honesty (e.g., Cole, 2001; DePaulo & Kashy, 1998; Guthrie & Kunkel, 2013; McLeod & Genereux, 2008), "as a good romantic partner, one should be convinced of being deserving high levels of honesty; following just world logic, this should strengthen the commitment to be honest with one's partner in return." (Reinhardt et al., 2023b, para. 3). Based on previous research indicating that an individual's personal belief in a just world (compared to the general belief in a just world) is more effective in predicting the personal benefits derived from the personal contract (e.g., Bègue, 2002; Dalbert, 1999), we specifically hypothesized a negative correlation between personal belief in a just world and relationship-based dishonest and proposed general belief in a just world to only play a subordinate role.

Based on our theoretical reasoning, we assumed a self-reinforcing cycle where both perspectives of dishonesty (i.e., own and partner's dishonesty) should hold equal importance. Therefore, we predicted negative correlations between personal belief in a just world and own dishonesty, as well as between personal belief in a just world and partner's dishonesty. Again, in line with the reasoning that every kind of lie violates the openness and authenticity people

[3] Raw data, analysis codes, Supplemental Material and links to the preregistration protocols of (mostly) all studies can be found in the OSF (https://osf.io/bwzty/).

value in their relationships (e.g., DePaulo & Kashy, 1998; DePaulo et al., 1996), we further predicted negative correlations between people's personal belief in a just world and the use of other-oriented lies, as well as between the personal belief in a just world and self-oriented lies.

The following description of the series of 11 studies shows great parallels to the research project dealing with the correlation between Honesty-Humility and relationship-based dishonesty (see also Section 4.3.1), which is why it will only be briefly presented here and besides, procedure and results are described in detail in Reinhardt et al. (2023b). In sum, we conducted seven (mostly) preregistered online studies based on several closed-ended self-report scales measuring different perspectives of lying (i.e., own and partner's dishonesty), and different reasons/motives of lies (i.e., other-oriented and self-oriented lies), for example with the Ennis et al. (2008) scales (see also Section 1.1). To measure relationship-based dishonesty in a more specific way, we also conducted three scenario-based (mostly) preregistered online studies using the scenarios of McLeod and Genereux (2008; see also Section 1.1). To also consider measuring deception over a determined time span, two more studies were conducted in which participants were asked directly (via one open question) about their own and their partner's frequency of lying across a certain time span. Finally, on study measured actual relationship-based dishonesty; here, deception was operationalized due to participants decision to forward a deceptive email to their romantic partners. Importantly, participants of all studies confirmed their current relationship status and further, all used scales were designed (or self-adapted) to capture the specific dynamics of dishonesty within the context of romantic relationships.

Results across all studies were ambiguous. Some studies revealed the predicted significant negative correlations between personal belief in a just world and the specific dishonesty measure, but others did not produce significant results or even revealed significant positive correlations. Because it is a valuable tool for estimating the average population effect from multiple data that investigate the same research question, we decided to only report one internal meta-analysis across all 11 studies instead of discussing the mixed results of the single studies in more detail. The meta-analysis yielded a small negative average effect of Fisher's *z*

= −0.07, but importantly, the 95% confidence intervals included zero which rather weakens than strengthens the support for our hypothesis. Regarding general belief in a just world, there was also no significant effect on relationship-based dishonesty. Upon a closer examination due to several subgroup analyses, it was found that studies focusing on the measurement of perceived dishonesty levels emanated by the romantic partner demonstrated significantly stronger negative associations with individuals' personal belief in a just world compared to studies that measured own dishonesty (see also Section 5.2 for a more detailed discussion about the role of belief in a just world for deception).

Interestingly, within three studies, we controlled the association between personal belief in a just world and relationship-based dishonesty for Honesty-Humility. In each case, Honesty-Humility added an incremental value to the explained variance that goes beyond the value of personal belief in a just world, which (a) strengthens our claim that Honesty-Humility is a key predictor for relationship-based dishonesty (see also Section 4.3.1), and (b) further weakens our hypothesis that personal belief in a just world is a valid predictor for (own) dishonesty behavior.

5. General Discussion

The present work was conducted to further develop and refine the nomological net (i.e., the conceptual framework that represents the relationships between variables) of personality traits predicting deception within different social contexts. *On the side of personality traits,* I focused on the Honesty-Humility factor (emanated from the HEXACO model of personality; Ashton & Lee, 2007), and the belief in a just world (emanated from just world theory; Lerner, 1965, 1980). Both, Honesty-Humility (e.g., Heck et al., 2018; Hilbig & Zettler, 2015; Pfattheicher et al., 2018; Schild et al., 2020) and the belief in a just world (e.g., Schindler et al., 2019) have already been considered by deception research and were shown to be significantly negative associated with general deception; that is, people higher in Honesty-Humility and their belief in a just world showed decreased deceptive behavior. However, at several points of my dissertation, I criticized that results of these studies should not be used to make statements about deception in more specific situations, because all of these studies did not

adequately considered the social context as they (a) applied game theoretical paradigms from behavioral ethics in which participants are not aware against whom they are playing and thus, who suffers from their mostly self-oriented lies and/or (b) applied self-report scales that leave open (trough a lack of more detailed instructions and item formulations) to whom the measured deceptive behaviors refers to. Therefore, the generalizability of these findings to more specific social contexts is in questions, since an individuals' lying behavior differs from situation to situation: Regarding romantic relationships, for example, it is striking that although lying decreases with increasing closeness (DePaulo & Kashy, 1998; Williams, 2001), this rule does not seem to apply in romantic partnerships, as more lies are told in this context compared to friends (DePaulo & Kashy, 1998), indicating that lying within romantic relationships is unique and is therefore not comparable with general dishonest behavior. Moreover, in romantic relationships, people increasingly lie out of other-oriented reasons (DePaulo & Kashy, 1998; Ennis et al., 2008), which is why the results from classical cheating paradigms are not transferable because they mainly measure self-oriented lies. Because researchers in psychological science are currently facing a set of severe problems which can be assigned to the so-called replication crisis of psychology (Open Science Collaboration, 2015), valid and thus context specific testing is indispensable. Therefore, *on the side of the social context*, I specifically focused on dishonesty within romantic relationships and further on academic cheating.

The important message is that while the already postulated relationship between Honesty-Humility and general deceptive is also transferable to deception within romantic relationships (Reinhardt & Reinhard, 2023; see Appendix A) and academic cheating (Reinhardt et al., 2023a; see Appendix B), the relationship between (personal) belief in a just world and lying was not found when specifically testing for the context of romantic relationships (Reinhardt et al., 2023b; see Appendix C). The significance of these findings for deception research and directions for future research are discussed.

5.1 The Role of the Honesty-Humility Factor for Deception

In line with recent research revealing Honesty–Humility to be the major predictor for the outcome domain of exploitation (Zettler et al., 2020), for general dishonest behavior measured

with classical cheating paradigms (Heck et al., 2018; Hilbig & Zettler, 2015; Pfattheicher et al., 2018; Schild et al., 2020), and self-reported infidelity (Bourdage et al., 2007; Schild et al., 2020), our series of 11 preregistered online studies (Reinhardt & Reinhard, 2023) showed that Honesty-Humility is also a valid predictor for dishonesty within romantic relationships, both for different perspectives of lying (i.e., own and partner's dishonesty), as well as for different motives/reasons for lying (i.e., other-oriented and self-oriented lies). This significant negative association—indicating that people higher in Honesty-Humility showed decreased relationship-based dishonesty—remained robust, even though we used a variety of methodological approaches for the measurement of relationship-based dishonesty like closed-ended self-report scales, scenarios, direct frequency measures, a daily diary methodology, and the measurement of actual deceptive behavior in concrete situations.

In seven out of these 11 studies, we also examined the predictive value of the personality trait *Honesty-Propriety*. Previous research by Hilbig and Zettler (2015) demonstrated that Honesty–Humility accounts for unique variance in predicting dishonesty beyond the remaining five factors of the HEXACO model and all other classic Big Five factors, but never with reverence to the Honesty–Propriety factor of the Big Six model (Saucier, 2009). Compared to the Honesty-Humility factor, Honesty-Propriety is assumed to predict a broader set of variables related to negative valence and socially disapproved risk-taking (Thielmann et al., 2017). Newly, some of our studies also revealed Honesty-Propriety to predict relationship-based dishonesty, however, this negative association was not consistently observed across studies when controlling for Honesty-Humility. That a mixed pattern arises even though the same factors are examined across several studies has already been pointed out by reviewing past literature on the Big Five traits and their links to deception (see also Section 4.2). To name just a view of these ambiguous findings, for example, Conscientiousness was not significantly related with general deception measured via several cheating paradigms (Conrads et al., 2013; Gylfason et al., 2016). However, within a meta-analysis conducted by Giluk and Postlethwaite (2015), Conscientiousness emerged as one of the primary predictors for academic cheating. Further, in the same meta-analysis, Neuroticism was found to be no significant predictor for

academic cheating (Giluk & Postletwaithe, 2015) and general deceptive behavior (Gylfason et al., 2016). However, a study conducted by Conrads et al. (2013) revealed that people higher in Neuroticism showed significantly increased deceptive behavior. Therefore—as one superordinate lesson than can be learnt—regarding the prediction of deception, my dissertation project highlights the significance of six-dimensional personality models such as the HEXACO model (Ashton & Lee, 2007) and the Big Six model (Saucier, 2009), because traditional personality models used in the 1980s and 1990s were limited to only five factors, with the notable absence of a distinct honesty-related personality factor. Given the inconsistent findings of research on the Big Five traits as correlates for deception (see also Section 4.2), such a specific honesty-related trait is necessary to reliably predict outcomes related to exploitation (Zettler et al., 2020)—and when the topic of interest is about lying in romantic relationships, then especially the Honesty-Humility factor from the HEXACO model of personality (Ashton & Lee, 2007) should be considered. Even if the literature on Dark Triad traits as correlates for deception showed a more consistent picture in the form that all three Dark Triad traits (i.e., Machiavellianism, psychopathy, and neuroticism) were shown to be significantly associated with general deceptive behavior (e.g., Azizli et al., 2016; Jonason et al., 2014: see also Section 4.1), it is important to note that a recent study found the association between Dark Tetrad (i.e., Dark Triad traits plus Sadism) and actual dishonest behavior to be fully eliminated when including Honesty-Humility as predictor (Pfattheicher et al., 2018). Thus, this finding makes it even clearer that it basically depends on the Honesty-Humility trait to predict deception.

Also regarding academic cheating, a problem that affects many educational institutions, Reinhardt et al. (2023a) showed that students higher in Honesty-Humility reported decreased academic cheating. Importantly, even after controlling for the influence of learning goals (see also Section 3.1), the significance of Honesty-Humility as a predictor of academic cheating behavior remained robust and only the learning goal of work avoidance revealed a predicted value that goes beyond the Honesty-Humility factor. Hence, in line with recent literature (e.g., De Vries et al., 2011; Van Rensburg et al., 2018), this finding suggests that Honesty-Humility plays a crucial role in predicting academic dishonesty and further weakens the hypothesis

claiming learning goals to be a valid predictor for academic cheating (Janke et al., 2019; Jordan, 2001; Rettinger et al., 2004; Van Yperen et al., 2011).

On the basis of these two works about the predictive value of Honesty-Humility on dishonesty within romantic relationships and on academic cheating, two basic approaches can now be derived (a) to select people with lower values of Honesty-Humility (e.g., before entering in a firm partnership) and (b) to specifically target people with lower values of Honesty-Humility to discourage them from cheating.

Considering the widespread importance of the honesty norm in social relationships and given past research revealing the negative effects of dishonesty within a relationship (Cole, 2001; DePaulo & Kashy, 1998; McCornack & Levine, 1990; Peterson, 1996), it can be argued that an individual's Honesty-Humility level is a crucial factor in determining relationship quality (see also Section 2.2). Based on the theoretical arguments of Lee and Ashton (2012), one can deduce valid signs of lower Honesty-Humility scores that can be observed in everyday interactions, which then can be considered, for example, when choosing a romantic partner: Clearly, individuals who express genuine intentions to engage in illegal activities such as tax evasion are more prone to cheat to others, including the romantic partner. Further, individuals who exhibit selective friendliness and politeness only towards those who can benefit them are also more inclined to lie towards the romantic partner. Engaging in frequent gambling or speculative activities with the intention of making quick money effortless is also indicative of lower scores in Honesty-Humility. Furthermore, people with lower levels of Honesty-Humility often exhibit extensive conspicuous consumption, showcasing various expensive status symbols. They also tend to make derogatory comments about other groups, suggesting a lack of belief in the equal dignity and fair treatment of all individuals. When comparing the academic context with the relationship context, within the academic context it is unusual to select students based on their personality structure (rather than their grades or their motivation). To counteract cheaters here as well, the second approach can be helpful. It refers to the targeted addressing of people with lower scores of Honesty-Humility to prevent them from cheating. One possible starting point could be to address issues that are important to people with lower Honesty-

Humility values, such as being perceived more valuable than others. To reduce deception rates in the academic context, but also within a relationship, it might therefore be useful to address the high value of the honesty-norm in our society and to specifically emphasize that liars are therefore perceived as less respectable. With the goal of preserving their reputation, which is especially important for people with lower Honesty-Humility values, this might keep them from lying. While it makes sense to also think about the practical implications of the Honesty-Humility factor (because the empirical situation clearly shows that this trait has a major impact on deceptive behavior), the discussion about the role of people's belief in a just world is different because there is no reliable empirical evidence that supports a significant association between personal belief in a just world and deception.

5.2 The Role of the Belief in a Just World for Deception

Even recent research showed that people with a stronger personal belief in a just world showed significantly decreased deception in a dice roll task and an anagram task (Schindler et al., 2019), this negative association was not found when specifically testing for relationship-based dishonesty (Reinhardt et al., 2023b). Through our 11 studies, we have achieved a very mixed picture of results. Some studies revealed the predicted significant negative association between personal belief in a just world and relationship-based deception, but others showed the exact opposite (i.e., significant positive correlations), and yet other studies revealed no significant association at all. To allow for the clearest test of the overall effect of dispositional personal belief in a just world on relationship-based dishonesty, we therefore decided to perform an internal meta-analysis across all studies. This meta-analysis yielded a small and non-significant overall effect, thus providing no support for our hypothesis. Even if we are convinced that our hypothesis is strongly founded in theory, the significance of the predicted association between the personal belief in a just world and relationship-based dishonesty for real life is in doubt. All studies in the internal meta-analysis are free of *p*-hacking and include all valid studies by the authors. No additional studies were conducted, making the meta-analysis highly informative and thus supporting the final interpretation of the reported results.

Importantly, due to several subgroup analyses, we found that studies that focused particularly on self-reported estimations of partner's dishonesty revealed significantly stronger effects compared to studies that measured self-reported own dishonesty towards the romantic partner. In other words, while we did not find personal belief in a just world to significantly predict own (actual) deceptive behavior, we found that people with a stronger personal belief in a just world expected significantly decreased deception from their romantic partners. This finding goes hand in hand with past research revealing people's belief in a just world to be a *cognitive resource* that helps people to cope with injustices (Dalbert & Donat, 2015). Following this, individuals who strongly believe in a just world encounter an injustice that they perceive as unsolvable by intuitively assimilate the experience of that injustice. One way they achieve this is, for example, by (cognitively) minimizing the significance of the injustice (Dalbert & Donat, 2015). In this vein, the result of the present work transferred this already well researched process of cognitive assimilation to the context of (dis)honesty within romantic relationships, claiming that people with a stronger personal belief in a just world also more strongly downplay the possibility that their romantic partner is lying to them to prevent a possible injustice (cognitively).

As a further general thought, this could be brought into connection with one of the theoretical explanations of Cole (2001), who stated that dishonesty in romantic relationships emerges because of the process of reciprocity. That is, if people belief that the romantic partner is dishonest, they behave dishonestly in the same way (see also Section 2.1). Theoretically, one can therefore conclude that even people's personal belief in just world does not directly affect the own deceptive behavior, it should have a rather indirect effect: if people with a stronger belief in a just world expect their partner's to be less dishonest, based on the process of reciprocity, they should also behave less dishonest, at least in the long run. However, if this theoretical argumentation should hold true, then we should also have found in our research project reliable significant associations between personal belief in a just world and own deceptive behavior, but we didn't.

5.3 General Directions for Future Research on the Lie-Telling Personality Type

Now that my specific research on Honesty-Humility and belief in a just world has been discussed, it is important for me to briefly summarize a few general insights that I gained during the whole research process on the lie-telling personality type. I strongly suggest that future research on the lie-telling personality type should test the same hypothesis broadly and across multiple studies. From my point of view, this broad testing should refer to different methodological approaches for measuring deception, but also to different operationalizations of deception. Regarding the use of different methodological approaches, Reinhardt and Reinhard (2023) have shown that valid predictors as for example the Honesty-Humility factor reliably predict deception, independent of the underlying method. In contrast, personality traits that generally show only a very small and/or non-significant effect on lying show a strong variation in effect sizes across different methods, as it appeared in the research project about the role of belief in a just world in predicting deception (Reinhardt et al., 2023b). If in the latter case only one single study based on only one specific method is carried out, then erroneous conclusions about the generalizability of the results may follow. Regarding different operationalizations of the construct of (relationship-based) dishonesty, my main works about the predictive value of Honesty-Humility and belief in a just world for relationship-based dishonesty revealed that it can make quite a difference whether participants are asked about their own lying behavior or about their estimated levels of interaction partner's dishonesty. While some personality traits may reliably predict both perspectives of lying (as for example Honesty-Humility; Reinhardt & Reinhard, 2023), other personality traits may only effect one of both perspectives of lying (as for example the personal belief in a just world; Reinhardt et al., 2023b). Also, different reasons/motives of lies should be measured more specifically to gain more insights whether there are possible interactions between several personality traits and specific reasons/motives of lying (e.g., Hart et al., 2020; McLeod & Genereux, 2008).

At this point, I would like to clearly point out that past deception literature has not found any consensus at all in how to define different types of lies and different reasons/motives of lies. It already starts with the fact that these generic terms of *types* and *reasons/motives* are

used synonymously, although there are completely different operationalizations behind them (see also Section 1.2). To better compare older and newer research, I strongly recommend the introduction of a uniform nomenclature. My suggestion is therefore to speak about types of lies in reference to a more technical understanding (e.g., how much information was omitted, concealed, exaggerated, or understanded), while reasons/motives of a lie should be understood as whose interests are served due to the lie (e.g., who profits from the lie). Regarding different reasons/motives of lies there are also numerous differentiations, some of which contradict each other (see also Section 1.2). In my opinion, the categorization of DePaulo et al. (1996), who separated lies that benefit another person (i.e., other-oriented lies) from lies that benefit oneself (i.e., self- oriented lies) is the most exhaustive and intuitively best understandable approach. Other authors have already pursued this approach but have often added further categories which limits the comparability of these works among each other. For example, McLeod and Genereux (2008) proposed to separate the motives of altruism, conflict avoidance, social acceptance, and selfish reasons. While lying motived by altruism and lying motived by selfish reasons fits good to the question whose interests are served due to the lie, this question is completely unclear for the other two categories; for example, a lie motivated by conflict avoidance can be told because the lie-teller wants to spare the partner from the conflict (and therefore mingles with altruistic/other-oriented lies), or because the lie-teller does not feel like arguing oneself (and therefore mingles with selfish/self-oriented lies). Thus, this additional differentiation of McLeod and Genereux (2008) mixes different aspects with each other and leads to the fact that this more detailed differentiation actually becomes more unclean. What has been explained here with the example of McLeod and Genereux (2008) is applicable to the various propositions put forth by other authors for differentiating motives/reasons of lies (see also Section 1.2). As already said, I therefore recommend for future research to apply the exhaustive and well-understood differentiation between other-oriented and self-oriented lies as first suggested by DePaulo et al. (1996).

5.4 Conclusion

The present work aimed to further develop and refine the nomological net of personality traits predicting deception within the specific context of romantic relationships, as well as within the academic context. The main findings are that the already established correlation between Honesty-Humility and general deceptive behavior also reliable emerged for relationship-based dishonesty and academic cheating; however, against general deception research, when examining the specific context of romantic relationships, the association between people's personal belief in a just world and deception was not evident. As own research and the review of relevant literature about the predictive value of more classical Big Five traits and Dark Triad traits revealed, Honesty-Humility is the key predictor for relationship-based dishonesty and academic cheating, as all other traits (also including personal belief in a just world and learning goals) do not add an incremental value that goes beyond the Honesty-Humility factor. Thus, the importance of such a six-dimensional personality models such as the HEXACO model, which includes a distinct honesty-related personality trait, is highlighted in a significant way for research on the lie-telling personality type. Beyond, my dissertation hopefully emerges as a good example showing that context-specific testing with a broad array of underlying methodological procedures but also purposefully chosen operationalizations of the relevant constructs is necessary to ensure the generalizability of the findings to the corresponding context. To all researchers who will deal with the lie-telling personality type in future research I remain with the following: It's the honest personality, stupid!

6. References

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III. Further Published Manuscripts

These articles are relevant to other research areas and are not essential to this thesis but were also written during the dissertation period:

Harhoff, N., Reinhardt, N., Reinhard, M.-A., & Mayer, M. (2023). Agentic and communal narcissism in predicting different types of lies in romantic relationships. *Frontiers in Psychology, 14,* Article 1146732. https://doi.org/10.3389/fpsyg.2023.1146732

Schindler, S., Reinhardt, N., & Reinhard, M.-A. (2022). Challenges in detecting proximal effects of existential threat on lie detection accuracy. *Current Psychology.* https://doi.org/10.1007/s12144-022-03237-1

Marris, A., Reinhardt, N., & Schindler, S. (2022). The role of just world beliefs in responding to the COVID-19 pandemic. *Social Justice Research, 35,* 188–205. https://doi.org/10.1007/s11211-022-00388-1

Schindler, S., Reinhardt, N., & Reinhard, M.-A. (2021). Defending one's worldviews under mortality salience: Testing the validity of an established idea. *Journal of Experimental Social Psychology*, *93*, Article 104087. https://doi.org/10.1016/j.jesp.2020.104087

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IV. Statement of Originality

Universität Kassel, Fachbereich Humanwissenschaften

Erklärung zur kumulativen Dissertation im Promotionsfach Psychologie

Erklärung über den Eigenanteil an den publizierten Artikeln innerhalb der Dissertationschrift und eidesstattliche Versicherung:

Allgemeine Angaben

Name: Reinhardt, Nina

Institut: Institut für Psychologie, Universität Kassel

Thema der Dissertation: „*An investigation of the lie-telling personality type within different social contexts*"

Erklärung gemäß §8 der Allgemeinen Bestimmungen für Promotionen der Universität Kassel vom 14.07.2021.

1. Bei der eingereichten Dissertation zu dem Thema „*An investigation of the lie-telling personality type within different social contexts*" handelt es sich um meine eigenständig erbrachte Leistung.
2. Anderer als der von mir angegebenen Quellen und Hilfsmittel habe ich mich nicht bedient. Insbesondere habe ich wörtlich oder sinngemäß aus anderen veröffentlichten oder unveröffentlichten Werken übernommene Inhalte als solche kenntlich gemacht.
3. Die Dissertation oder Teile davon habe ich bislang nicht an einer Hochschule des In- oder Auslands als Bestandteil einer Prüfungs- oder Qualifikationsleistung vorgelegt.
4. Die abgegebenen digitalen Versionen stimmen mit den abgegebenen schriftlichen Versionen überein.
5. Ich habe mich keiner unzulässigen Hilfe Dritter bedient und insbesondere die Hilfe einer kommerziellen Promotionsberatung nicht in Anspruch genommen.
6. Im Fall einer kumulativen Dissertation: Die Mitwirkung von Ko-Autor:innen habe ich durch eine von diesen unterschriebene Erklärung dokumentiert. Eine Übersicht, in der die einzelnen Beiträge nach Ko-Autor:innen und deren Anteil aufgeführt sind, füge ich anbei.
7. Die Richtigkeit der vorstehenden Erklärungen bestätige ich.

_____ _____

Ort, Datum M.Sc. Nina Reinhardt

Nummerierte Aufstellung der publizierten Artikel (Reihenfolge gemäß der Erwähnung in der Synopsis):

1. Reinhardt, N., & Reinhard, M.-A. (2023). Honesty–humility negatively correlates with dishonesty in romantic relationships. *Journal of Personality and Social Psychology.* Advance online publication. https://doi.org/10.1037/pspp0000456

2. Reinhardt, N., Trnka, L.-M. & Reinhard, M-A. (2023). The correlation of honesty-humility and learning goals with academic cheating. *Social Psychology of Education, 26*, 211–226. https://doi.org/10.1007/s11218-022-09742-2

3. Reinhardt, N., Reinhard, M.-A., & Schindler, S. (2023). Is peoples' belief in a just world associated with (dis)honesty in romantic relationships? *Journal of Research in Personality, 105,* Article 104396. https://doi.org/10.1016/j.jrp.2023.104396

V. Appendix

Appendix A

Reinhardt, N., & Reinhard, M.-A. (2023). Honesty–humility negatively correlates with dishonesty in romantic relationships. *Journal of Personality and Social Psychology.* Advance online publication. https://doi.org/10.1037/pspp0000456

Honesty-Humility Negatively Correlates with Dishonesty in Romantic Relationships

Submitted 11-21-2022

Abstract

Despite the clear existing theoretical links, ours is the first direct systematic series of studies investigating a potential negative association between Honesty-Humility and general dishonesty in romantic relationships. Eleven preregistered online studies with community samples were run (total *N* = 5677). For a first test of our hypothesis, we conducted a series of seven cross-sectional studies based on self-reports; these studies used different methodological approaches to assess relationship-based dishonesty (i.e., closed-ended self-report scales, scenarios, and direct frequency measures). This was followed by one diary study and three studies that base their assessment on more behavioral measurements of relationship-based dishonesty (e.g., a dice roll task and an anagram task). In line with our hypothesis, all studies reliably revealed that participants higher in Honesty-Humility reported less relationship-based dishonesty. The classification of the found results to past research and the general relevance of the Honesty-Humility factor for romantic relationships are discussed.

Keywords: Honesty-Humility; deception; lying; romantic relationships; personality

Honesty-Humility Negatively Correlates with Dishonesty in Romantic Relationships

"As social psychologist, we [..] do think that certain situations and people elicit lying. But we expect personality to predict lying as well." (Kashy & DePaulo, 1996, p.1047).

People perceive an interaction as less pleasant and less intimate when they lied during it compared with social interactions in which they were honest overall (DePaulo et al., 1996). In this vein, research indicates that dishonesty in romantic relationships is linked to decreased relational satisfaction (Cole, 2001; Peterson, 1996), commitment (Cole, 2001), and closeness (Williams, 2001; see also DePaulo & Kashy, 1998). Despite these negative consequences, lying in romantic relationships occurs. For example, Guthrie and Kunkel (2013) conducted a diary-based study that specifically investigated the frequency of lying within romantic relationships. During the seven-day long questioning period, the student sample reported an average rate of 0.7 lies per day. In a groundbreaking diary-based study, DePaulo and Kashy (1998) found students to report lying in 77.38% of interactions they had with strangers and community members in 55.56% of interactions with strangers. With their friends, students and community members lied in approximately 27.00% of interactions, and regarding spouses, community members lied in 9.85% of their interactions.

In line with their reasoning that lying violates the openness and authenticity people value in their close relations, DePaulo and Kashy (1998) found that people who lied to others to whom they feel close felt more uncomfortable with their lies. Interestingly, rates of lies regarding non-married romantic partners were relatively higher compared with other close relationship types; students and community

members lied in approximately 33.00% of interactions they had with their romantic partners. The authors argue that these high deception rates can be explained by the non-married but romantic partners' increased need to impress each other, which may promote lying (see also Rowatt et al., 1999).

In their diary study, DePaulo and Kashy (1998) also asked about the reasons participants lie in social interactions. Previously, Kashy & DePaulo (1996) applied a coding scheme in which independent raters coded the reasons participants offered for telling their lies into two major categories: *other-oriented lies* and *self-focused lies*. Other-oriented lies are defined as lies told to benefit another person or to protect or enhance other persons' psychological well-being/general interests. Self-focused lies are defined as lies told to benefit oneself or to protect or enhance the liar's psychological well-being/general interest; self-focused lies are also told to elicit a desired emotional response (DePaulo et al., 1996; DePaulo & Kashy, 1998; see also Metts, 1989). As expected, DePaulo and Kashy (1998) found that other-oriented lies were told more often in close relationships compared with interactions with strangers.

Although several diary studies investigated lying in close and casual relationships, only a few have investigated which personality traits predict lying in close and casual relationships, leading to the question: "Is there a lie-telling personality type?" (Kashy & DePaulo, 1996, p.1037). For example, Kashy and DePaulo (1996) first evaluated several individual differences measures (e.g., manipulativeness, impression management, self-confidence, socialization, and sociability) followed by a seven-day diary period as described above. As predicted, people higher in manipulativeness, people who are highly concerned with impression management, and people who are more sociable/extraverted were found to lie in their everyday life most often (self-confidence and socialization were unrelated).

Studies have also linked Dark Triad traits (i.e., Machiavellianism, psychopathy, and narcissism; Muris et al., 2017) to higher deception tendencies in general (e.g., Jonason et al., 2014), to an increased use of deceptive tactics in attracting potential dating partners (e.g., Baughman et al., 2014; Dussault et al., 2013), and to infidelity in relationships measured with self-report scales (Brewer et al., 2015; Sevi et al., 2020).

Remarkably, one prime candidate is so far missing: the Honesty-Humility factor of the HEXACO model of personality (Lee & Ashton, 2004) is an established predictor of unethical behavior and actual dishonest behavior in particular but no study has, to the best of our knowledge, investigated its effects on general dishonesty in romantic relationships. This goes beyond sexual infidelity and applies more complex methods like diary-based data collection or measurements of direct deceptive behavior in romantic relationships.

Honesty-Humility and Deception

While in the 1980s and 1990s most researchers adopted five-factorial models of personality, which they collectively named the Big Five, more recent research has revealed a cross-culturally replicated set of six factors labeled the HEXACO model of personality (for a review, see Ashton & Lee, 2007). In addition to the Big Five dimensions denoted as Emotionality (E), eXtraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experiences (O), the HEXACO model adds another factor labeled as Honesty-Humility (H).

Honesty-Humility is defined as “the tendency to be fair and genuine in dealing with others, in the sense of cooperating with others even when one might exploit them without suffering retaliation.” (Ashton & Lee, 2007, p.156). Accordingly, several studies indicate Honesty-Humility to be negatively linked to anti-social behavior (Lee et al., 2005a, 2005b).

Another line of research reliably showed Honesty-Humility to be negatively associated with actual dishonest behavior. Commonly, these studies apply several cheating paradigms from behavioral ethics to measure dishonesty. Using a dice-roll task as well as other tasks like a coin-toss task or an anagram-task, Honesty-Humility was found to be negatively linked to dishonest behavior. This negative association reliably emerged across various incentive structures (i.e., monetary gains and losses, avoiding tedious work), modes of data collection (i.e., lab, web, longitudinal), and baseline probabilities of winning (e.g., Hilbig & Zettler, 2015; Schild et al., 2020a).

Crucially, Honesty-Humility repeatedly turned out to be the major predictor for dishonest behavior—beyond all other HEXACO and Big Five personality factors. One study found the association between Dark Tetrad (i.e., Dark Triad traits plus Sadism) and actual dishonest behavior to be fully eliminated when including Honesty-Humility as predictor (Pfattheicher et al., 2018). Given that the Dark Triad/Tetrad share a substantial amount of variance with Honesty-Humility (Lee et al., 2013), this underlines the outstanding role of Honesty-Humility in predicting dishonesty. A re-analysis of 16 studies assessing dishonest behavior also showed Honesty-Humility to be the major predictor, with no other personality traits from the HEXACO or Big Five providing any incremental validity beyond the Honesty-Humility factor (Heck et al., 2018).

Beyond dishonest behavior, another aspect of social life that is influenced by interindividual differences in Honesty-Humility is trust. As a path of *social projection*, people with higher levels of Honesty-Humility are assumed to hold higher trustworthiness expectations (Thielmann & Hilbig, 2014). In simple terms, social projection means that people expect others to be like them. Thus, social projection results in a positive correlation between judgements about the self and judgements about others (Krueger, 2007). As one part of their experiment, Thielmann and Hilbig (2014) asked participants to take part in a Distrust Game in which two players (trustor and trustee)

receive an equal amount as the initial profit. As a measure of trust, participants (the trustors) are then asked to estimate the amount the other part (the trustees) has left for them, as trustees are allowed to keep any part of the trustors initial gain. As predicted and replicated by Schild et al. (2020b), participants higher in Honesty-Humility expected the trustees to leave a higher amount of their initial profit, thus indicating higher trustworthiness expectations.

Besides this research on general deceptive behavior and trust, few studies have investigated the role of Honesty-Humility for predicting relationship-relevant behavior. For example, Holden et al. (2014) showed people lower in Honesty-Humility to use mate-retention strategies more often, including general manipulative behaviors regarding the romantic partner (see also Buss et al., 2008). Other studies revealed a negative association between Honesty-Humility and self-reported sexual infidelity (Bourdage et al., 2017; Hilbig et al., 2015; Schild et al., 2020). Notably, sexual infidelity is only a small part of general relationship-based dishonesty, and sexual infidelity is not part of every relationship, as on average, only 20–25% of all marriages are affected (Fincham & May, 2017). General dishonesty is, however, more or less common in every romantic relationship (DePaulo & Kashy, 1998; Guthrie & Kunkel, 2013).

Recent developments in personality research revealed a six-dimensional personality model beyond the HEXACO model, namely the Big Six model (Saucier, 2009). Saucier noted that within the lexical procedure which resulted in the HEXACO model of personality, adjectives of a highly evaluative nature were neglected; he called it the "narrow-selection-based six-factor model" (2009, p.1577). To widen the selection of attributes, Saucier suggests a more wideband six-factor model, which should be more general across languages and populations (see also Thielmann et al., 2016). Noteworthy, the Big Six model replaces the Honesty-Humility factor with a related but

theoretically distinct factor called Honesty-Propriety. Honesty-Propriety is assumed to represent a broader factor and thus to predict a broader set of variables, especially those related to negative valence and socially disapproved risk-taking. It remains an open question whether the HEXACO and Big Six traits represent merely related or rather equivalent dimensions (Thielmann et al., 2016).

The Present Research

Even though the theoretical links seem clear, past research remains silent on the transferability of the negative association between Honesty-Humility and the more specific field of general dishonesty in intimate relationships (Pfattheicher et al., 2018); this goes beyond sexual infidelity that is only a small part of relationship-based deception (Fincham & May, 2017). Thus, the present work presents eleven preregistered studies to test our first hypothesis that Honesty-Humility is negatively linked to own relationship-based dishonesty (i.e., dishonesty emanated by oneself; *Hypothesis 1*).

Although research on deception has revealed different types of lies (DePaulo & Kashy, 1998; DePaulo et al., 1996; see also Metts, 1989), we argue that every kind of a lie violates the openness and authenticity people value in their relationships (cf. DePaulo & Kashy, 1998; DePaulo et al., 1996). Therefore, we predict that Honesty-Humility is negatively linked to both: the frequency of other-oriented lies (*Hypothesis 2*) and the frequency of self-oriented lies (*Hypothesis 3*).

Given that Honesty-Humility was recently identified as a basic trait underlying trustworthiness (Thielmann & Hilbig, 2014), we further predict Honesty-Humility to be negatively linked to the perception of partner's relationship-based dishonesty (i.e., estimations of dishonesty emanated by the romantic partner; *Hypothesis 4*).

Given the theoretical and methodological development of the Honesty-Humility factor, which entails a more appropriate orientation to capture outcome domains

related to the field of exploitation, we finally predict that the association(s) between Honesty-Humility and relationship-based dishonesty should remain robust even when controlling for Honesty-Propriety (*Hypothesis 5*).

Transparency and Openness

Hypotheses, analysis plans, exclusion criteria and power analyses were pre-registered at *AsPredicted*. The *Open Science Framework* (OSF; osf.io/qf79t) provides raw data and analysis codes of all eleven studies. The *Supplement Material*, which is also available on the OSF, provides detailed information about data exclusion of each study, supplemental analyses and all research materials. During our research process, we pretested new paradigms for the measurement of relationship-based dishonesty. Descriptions of these *Deception Paradigms* are also available on the OSF.

Data were analyzed using SPSS (Version 28.0). For all studies, relevant ethical guidelines were followed; we received ethical approval from the ethics committee of the University of Kassel. No protocol number is supplied as a result of this process, but confirmation of approval is available on request. In the manuscript, we follow JARS (Kazak, 2018). Table 1 provides a detailed overview about sample characteristics of all eleven studies reported in the main manuscript.

Table 1

Overview About the Sample Characteristics Listed for Studies 1 to 11

Baseline characteristic	Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7	Study 8	Study 9	Study 10	Study 11
Total *N*	477	411	408	476	492	479	492	257	710	835	640
Mean age (in years)	37.12 (11.32)	36.10 (10.31)	34.28 (10.25)	29.75 (10.73)	36.46 (11.07)	35.06 (9.79)	35.68 (10.24)	23.63 (4.40)	37.20 (10.66)	31.11 (9.30)	35.58 (10.02)
Gender (%)											
Female	41.5	46.2	38.0	47.7	36.6	43.0	42.5	67.3	46.5	53.7	54.2
Male	58.3	53.8	62.0	51.3	63.4	57.0	57.5	32.3	53.5	45.9	44.8
Divers	0.2	–	–	1.1	–	–	–	0.4	–	0.5	0.9
Employment (%)											
Unemployed	3.6	1.9	3.4	8.0	2.0	2.9	2.2	6.2	2.5	3.4	0.5
Student	1.3	0.7	1.5	30.9	2.0	2.9	1.0	48.6	1.3	13.8	3.0
Employed	73.2	74.5	73.0	46.4	69.7	74.3	72.0	37.4	77.0	73.8	89.2
Self-Employed	19.9	20.9	20.6	8.8	22.6	13.3	24.2	6.2	16.1	8.0	6.7
Other	2.1	1.9	1.5	4.3	3.7	3.5	0.6	1.2	3.1	1.0	0.6
Ethnicity (%)											
Caucasian	60.0	60.1	49.5	71.2	52.6	56.4	57.5	61.1	71.4	69.0	83.8
African American	11.7	10.2	9.1	0.4	5.7	9.6	3.5	0.8	4.1	0.7	1.7
Asian American	6.3	7.1	7.6	–	2.4	4.2	2.4	0.4	2.0	0.4	0.8
Asian	8.8	7.5	19.4	3.4	19.9	14.4	23.0	3.1	9.3	3.5	3.3
Hispanic	5.0	5.1	4.7	9.2	6.7	7.5	5.5	6.6	5.1	8.4	2.3
Indian	2.7	6.6	6.1	0.4	7.3	4.6	5.1	1.6	4.2	1.6	0.5
Other	5,2	3.4	3.7	15.4	5.3	3.3	3.0	26.5	3.9	16.4	7.7
Mean duration (in months)	59.23 (95.65)	49.05 (84.34)	39.93 (65.85)	71.58 (83.87)	61.43 (101.24)	21.81 [a] (39.23)	21.93 [a] (33.15)	29.81 (32.17)	67.82 (96.57)	82.99 (83.29)	114.64 (94.95)
Sexual preference (%)											
Heterosexual	85.1	86.8	83.1	91.2	85.6	84.8	89.2	82.5	86.9	86.0	85.5
Homosexual	13.4	12.6	16.2	5.4	13.4	12.7	10.2	7.0	12.0	8.5	10.7
No decision	1.5	0.6	0.7	3.4	1.0	2.5	0.6	10.5	1.1	7.5	3.8

Note. Numbers in parenthesis are the standard deviations. All participants confirmed they were currently in a romantic relationship with exception of participants of Studies 6 and 7 who confirmed that they have experienced at least one breakup from a romantic partner. Mean duration (in months) = mean duration in months of the romantic relationship at the moment of questioning.

[a] Mean duration (in months) of Studies 6 and 7 refer to the overall duration of participants past romantic relationship.

Studies 1 to 7: Cross-Sectional Studies Based on Self-Report Scales

For a first test of our hypotheses, and across seven preregistered online studies, we used a variety of different self-report scales on dishonesty in romantic relationships, focusing on different perspectives of lying (i.e., own and partner's dishonesty) and different types of lies (i.e., other-oriented and self-oriented lies). Additionally, we applied a methodological procedure in which participants are asked directly (via one open-question) about their own and their partner's frequency of lying across a certain time span.

In line with *Hypothesis 1*, we predict Honesty-Humility to be negatively linked to own relationship-based dishonesty assessed with the scale to measure own dishonesty developed by Cole (2001), as well as to more negative attitudes towards infidelity measured with the attitudes towards infidelity scale developed by Jones et al. (2011). Additionally, and in line with *Hypothesis 1*, Honesty-Humility should be negatively correlated with participants perceived acceptability and likelihood of lying when evaluating different scenarios of lying in romantic relationships (McLeod & Genereux, 2008), as well as to a decreased self-reported frequency of their lies (Serota et al., 2010). We further predict Honesty-Humility to be negatively linked to other-oriented lies (*Hypothesis 2*) and self-oriented lies (*Hypothesis 3*); we measured both with the Ennis et al. scales (2008). Given that Honesty-Humility was recently identified as a basic trait underlying trustworthiness (cf. Thielmann & Hilbig, 2014), in line with *Hypothesis 4*, we also predict a negative association between Honesty-Humility and estimations of partner's dishonesty; we assessed this with the scale to measure partner's dishonesty developed by Cole (2001), as well as with one open-question about partner's frequency of lying across a certain time span (e.g., Serota et al., 2010). We finally predict that the association(s) between Honesty-Humility and relationship-based dishonesty should remain robust even when controlling for Honesty-Propriety

(*Hypothesis 5*). All studies were preregistered at *AsPredicted* (Studies 1 to 3: https://aspredicted.org/ub6hm.pdf; Study 4: https://aspredicted.org/iy853.pdf; Study 5: https://aspredicted.org/8eg2q.pdf; Study 6: https://aspredicted.org/f9zw4.pdf; Study 7: https://aspredicted.org/us6ff.pdf).

Method

Subjects

Based on recent research about the correlation between Honesty-Humility and deception (Heck et al., 2018), we assumed a medium-to-large effect size (odds ratio = 0.53) but calculated our power analysis with a more conservative effect of $r = .20$. With an assumed power of 99% and setting Type I error rate at $p < .05$, the analysis for correlation (two-tailed) revealed a minimal sample size of $N = 443$. Data of all studies were collected via *Amazon Mechanical Turk*, except data of Study 4 that was collected via *Prolific*.

Procedure and Measures

First, participants confirmed participation requirements (i.e., the informed consent). In Studies 1 to 5, participants additionally must confirm to currently be in a romantic relationship. In Studies 6 and 7, we aimed to test our hypotheses more broadly, specifically regarding past relationships. Therefore, as a participation requirement of Studies 6 and 7, participants additionally must confirm that they have experienced at least one breakup from a romantic partner and were encouraged to answer all questions of the survey regarding their ex-partnership. In all studies, we then asked for participants' relationship-based dishonesty using several self-report measures.[4] In Studies 4, 6 and 7, we also assessed relationship commitment and

[4] In Study 4, we additionally asked for attributions of own and partner's types of lies (see section 3.1.2 in the Supplemental Material).

relationship satisfaction.[5] In each case, Honesty-Humility was measured next. Only in Studies 4 to 7, we assessed Honesty-Propriety as control variable. Participants filled out demographic measures (i.e., age, gender, occupational status, ethnicity, sexual preference) and answered the final attention check and the bot check; if they failed on of these checks, participants were excluded afterwards (see section 1.1 to 1.7 in the Supplemental Material). In Studies 1 to 5, participants were further asked about their actual relationship duration. In Studies 6 and 7, participants were asked for the duration of their last relationship.

Honesty-Humility. We measured Honesty-Humility in each study with the ten relevant items of HEXACO-PI-R created by Ashton and Lee (2009). Three items measured sincerity (i.e., the tendency to be genuine in interpersonal relations), three items measured fairness (i.e., the tendency to avoid fraud and corruption), two items measured modesty (i.e., the tendency to be unassuming) and two items measured greed avoidance (i.e., the tendency to be uninterested in high status symbols and wealth). We summarized all ten items to one variable (Study 1: α = .68; Study 2: α =.65; Study 3: α = .56; Study 4: α = .69; Study 5: α = .68; Study 6: α = .67; Study 7: α = .61). Participants responded to all items on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Honesty-Propriety. In Studies 4 to 7, we measured Honesty-Propriety as control variable with the seven relevant items (Study 4: α = .64; Study 5: α = .62; Study 6: α = .57; Study 7: α = .43) of the Big Six Questionnaire created by Thalmayer and Saucier (2014). Participants were asked to respond on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

[5] Because these relationship quality variables are not part of our main hypothesis, detailed descriptions and all analyses involving these variables can be found in the Supplemental Material (see section 2.4, 2.6, and 2.7, and section 3.1.1, 3.2.1, and 3.3.1 in the Supplemental Material).

Relationship-Based Dishonesty. See Table 2 for an overview about all self-report measures of relationship-based dishonesty. All materials can be found in the Supplemental Material (see section 4.1 to 4.6).

Table 2

Overview About all Self-Report Measures Used in Studies 1 to 7

Self-Report Measures				Studies						
DV	Method	Items	Scale Anchor	1	2	3	4	5	6[a]	7[a]
Own dishonesty	Self-report scale (Cole, 2001)	Eight items; e.g., "I sometimes lie to my partner."	1 (*strongly disagree*) to 7 (*strongly agree*)	X (.80)				X (.80)	X (.78)	X (.70)
Partner's dishonesty	Self-report scale (Cole, 2001)	Three items; e.g."I think that my partner tries to mislead me."	1 (*strongly disagree*) to 7 (*strongly agree*)	X (.66)				X (.68)	X (.64)	X (.75)[b]
Other-oriented lies	Self-report scale (Ennis et al., 2008)	Six items; e.g., "How often do you lie to your romantic partner to protect him/her from feeling hurt?"	1 (*strongly disagree*) to 7 (*strongly agree*)	X (.94)				X (.94)		
Self-oriented lies	Self-report scale (Ennis et al., 2008)	Six items; e.g., "How often do you lie to your romantic partner in order to come out of situation looking the best?"	1 (*strongly disagree*) to 7 (*strongly agree*)	X (.95)				X (.95)		
Attitudes towards infidelity	Self-report scale (Jones et al., 2011)	Seven items; e.g., "How likely would you be to tell a partner if you were unfaithful?"	1 (*not at all likely*) to 7 (*extremely likely*)	X (.87)				X (.87)		
Acceptability and likelihood of lying	Scenarios (McLeod & Genereux, 2008)	Four scenarios; e.g., "Kate's partner is complaining about an instructor he does not like. In order to fit in, Kate lies and says she dislikes the instructor as well, even though she really likes the instructor."	1 (*extremely unacceptable/ unlikely*) to 9 (*extremely acceptable/likely*)		X (.90)					
Own frequency of lies	Open question (e.g., Serota et al., 2010)	One item; „In the last fourteen days, how many times do you have lied to your romantic partner?"	–			X	X			
Partner's frequency of lies	Open question (e.g., Serota et al., 2010)	One item; „Please estimate the number of times your romantic partner lied to you during the last fourteen days."	–				X			

Notes. DV = dependent variable. An "X" indicates that the self-report measure was included in the corresponding study. Numbers in parentheses are the values for Cronbach's α.

[a] All items were adapted so that they measure deception during participants past romantic relationship.

[b] Because the three items to measure ex-partner's dishonesty had only unacceptable low internal reliability ($\alpha = .26$), in Study 7, we only used two items to create the ex-partner's dishonesty scale.

Results

Means, standard deviations, intercorrelations and confidence intervals for study variables of all seven studies can be found in the Supplemental Material (see section 2.1 to 2.7).

Honesty-Humility and Own Relationship-Based Dishonesty

As predicted in *Hypothesis 1*, a first test showed significant negative correlations between Honesty-Humility and own dishonesty in Study 1 (r_p = -.58, 95% confidence interval [CI] = [-0.64; -0.52], p < .001) and in Study 5 (r_p = -.49, 95% CI [-0.55; -0.41], p < .001), and with attitudes towards infidelity in Study 1 (r_p = -.66, 95% CI [-0.70; -0.60], p < .001) and in Study 5 (r_p = -.60, 95% CI [-0.65; -0.53], p < .001). Also as predicted, we found significant negative correlations between Honesty-Humility and the acceptability and likelihood for lying in Study 2 (r_p = -.53, 95% CI [-0.60; -0.46], p < .001), with own frequency of lies in Study 3 (r_s = -.24, 95% CI [-0.33; -0.14], p < .001) and Study 4 (r_s = -.14, 95% CI [-0.23; -0.05], p = .003)[6], and with own dishonesty within the ex-relationship in Study 6 (r_p = -.39, 95% CI = [-0.47; -0.31], p < .001) and Study 7 (r_p = -.41, 95% CI = [-0.48; -0.33], p < .001).

For a more detailed test, we conducted linear regression models using Honesty-Humility as predictor (Model 1) for all dependent variables of Studies 1 to 7 that are operationalized as own relationship-based dishonesty. In a second step, in each case, we inserted gender (0 = female, 1 = male) as control variable (Model 2); and in Studies 4 to 7 we also inserted Honesty-Propriety as control variable (Model 2).

In line with *Hypothesis 1*, Honesty-Humility was a significant predictor for all measurements of own relationship-based dishonesty we used across Studies 1 to 7. For Studies 4 to 7, in line with *Hypothesis 5*, this is true even under control of

[6] Because of the right-skewed distribution of own frequency of lies in Study 3 (skewness = 4.36, *SE* = 0.12) and Study 4 (skewness = 8.94, *SE* = 0.11), we calculated Spearman's rank-order correlations (r_s) for correlation coefficients involving these variables.

Honesty-Propriety. Only in Study 1, gender also turned out to be a significant predictor for attitudes towards infidelity in Model 2, with men reporting more positive attitudes towards infidelity than women (see Table 3).

Table 3

Regression Coefficients on Own Relationship-Based Dishonesty

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
1											
	Own dishonesty										
		(1)	HH	-1.058	0.068	-1.19	-0.92	<.001	-.58	.34	.34***
		(2)	HH	-1.043	0.068	-1.18	-0.91	<.001	-.57	.34	.00
			Gender	0.164	0.084	-0.001	0.33	.052	.09		
	Attitudes towards infidelity										
		(1)	HH	-1.673	0.089	-1.85	-1.50	<.001	-.66	.43	.43***
		(2)	HH	-1.646	0.089	-1.82	-1.47	<.001	-.65	.44	.01**
			Gender	0.294	0.109	0.08	0.51	.007	.12		
2											
	Acceptability and likelihood										
		(1)	HH	-1.642	0.129	-1.90	-1.39	<.001	-.53	.28	.28***
		(2)	HH	-1.666	0.130	-1.92	-1.41	<.001	-.54	.29	.01
			Gender	-0.184	0.147	-0.47	0.11	.212	-.06		
3											
	Own frequency[a]										
		(1)	HH	-0.192	0.029	-0.25	-0.13	<.001	-.31	.10	.10***
		(2)	HH	-0.193	0.030	-0.25	-0.14	<.001	-.31	.10	.00
			Gender	-0.013	0.031	-0.07	0.05	.673	-.02		

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
4											
	Own frequency[a]										
		(1)	HH	-0.096	0.027	-0.15	-0.04	<.001	-.16	.03	.03***
		(2)	HH	-0.064	0.031	-0.12	-0.004	.038	-.10	.05	.02**
			Gender	-0.053	0.035	-0.12	0.02	.124	-.07		
			HP	-0.092	0.031	-0.15	-0.03	.003	-.14		
5											
	Own dishonesty	(1)	HH	-0.847	0.072	-0.99	-0.71	<.001	-.49	.24	.24***
		(2)	HH	-0.568	0.089	-0.74	-0.39	<.001	-.29	.28	.04***
			Gender	0.000	0.092	-0.18	0.18	.997	.000		
			HP	-0.423	0.084	-0.59	-0.26	<.001	-.23		
	Attitudes towards infidelity										
		(1)	HH	-1.461	0.093	-1.64	-1.28	<.001	-.60	.35	.35***
		(2)	HH	-0.887	0.109	-1.10	-0.67	<.001	-.36	.45	.09***
			Gender	0.099	0.113	-0.12	0.32	.380	.04		
			HP	-0.874	0.102	-1.08	-0.67	<.001	-.37		
6											
	Own dishonesty within ex-relation										
		(1)	HH	-0.683	0.073	-0.83	-0.54	<.001	-.39	.15	.15***
		(2)	HH	-0.355	0.087	-0.53	-0.18	<.001	-.19	.22	.07***
			Gender	0.081	0.089	-0.09	0.26	.362	.04	.15	.15***
			HP	-0.529	0.083	-0.69	-0.37	<.001	-.28	.16	.00

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
7											
	Own dishonesty within ex-relation										
		(1)	HH	-0.681	0.068	-0.82	-0.55	<.001	-.41	.17	.17***
		(2)	HH	-0.335	0.082	-0.50	-0.17	<.001	-.18	.24	.07***
			Gender	0.074	0.069	-0.06	0.21	.278	.05		
			HP	-0.555	0.080	-0.71	-0.40	<.001	-.30		

Note. Number of participants after excluding participants who declared divers for gender: Study 1 $N = 476$; Study 4 $N = 471$. DV = dependent variable; 95% CI = confidence interval for *B*; *LL* = lower limit; *UL* = upper limit; r_{part} = partial correlation coefficients; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

[a] We conducted log base 10 transformation for own frequency of lies of Study 3 (skewness = 0.00, *SE* = 0.12) and Study 4 (skewness = 0.54, *SE* = 0.11).

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

Honesty-Humility and Different Types of Lies

As predicted in *Hypothesis 2*, a first test showed significant negative correlations between Honesty-Humility and other-oriented lies in Study 1 (r_p = -.60, 95% CI [-0.65; -0.54], p < .001) and in Study 5 (r_p = -.45, 95% CI [-0.52; -0.38], p < .001). Further, as predicted in *Hypothesis 3*, there are significant negative correlations between Honesty-Humility and self-oriented lies in Study 1 (r_p = -.68, 95% CI [-0.72; -0.63], p < .001) and in Study 5 (r_p = -.55, 95% CI [-0.61; -0.48], p < .001).

We conducted parallel regression models for Studies 2 and 5 (Model 1 and Model 2). Supporting *Hypothesis 2*, Honesty-Humility was a significant predictor for other-oriented lies in both studies. Supporting *Hypothesis 3*, Honesty-Humility also proved to be a significant predictor for self-oriented lies in both studies. For Study 5, in line with *Hypothesis 5*, this is true even under control of Honesty-Propriety (see Table 4).

Table 4

Regression Coefficients on Different Types of Lies

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
1											
	Other-oriented lies										
		(1)	HH	-1.568	0.096	-1.76	-1.38	<.001	-.60	.36	.36***
		(2)	HH	-1.549	0.097	-1.74	-1.36	<.001	-.59	.36	.00
			Gender	0.207	0.119	-0.03	0.44	.082	.08		
	Self-oriented lies										
		(1)	HH	-1.957	0.097	-2.15	-1.77	<.001	-.68	.46	.46***
		(2)	HH	-1.943	0.098	-2.14	-1.75	<.001	-.67	.46	.00
			Gender	0.147	0.120	-0.09	0.38	.222	.06		
5											
	Other-oriented lies										
		(1)	HH	-1.143	0.104	-1.35	-0.94	<.001	-.46	.21	.21***
		(2)	HH	-0.842	0.129	-1.10	-0.59	<.001	-.29	.24	.02***
			Gender	0.236	0.134	-0.03	0.50	.079	.08		
			HP	-0.445	0.121	-0.68	-0.21	<.001	-.17		
	Self-oriented lies										
		(1)	HH	-1.517	0.109	-1.73	-1.30	<.001	-.55	.30	.30***
		(2)	HH	-0.868	0.128	-1.12	-0.62	<.001	-.31	.40	.09***
			Gender	0.068	0.134	-0.20	0.33	.614	.02		
			HP	-0.985	0.121	-1.22	-0.75	<.001	-.36		

Note. Number of participants after excluding participants who declared divers for gender: Study 1 $N = 476$. DV = dependent variable; 95% CI = confidence interval for B; LL = lower limit; UL = upper limit; r_{part} = partial correlation coefficients; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety. *$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

Honesty-Humility and Partner's Relationship-Based Dishonesty

As predicted in *Hypothesis 4*, Honesty-Humility was significantly negative correlated with estimations of partner's dishonesty in Study 1 (r_p = -.50, 95% CI = [-0.57; -0.43], p < .001) and Study 5 (r_p = -.43, 95% CI [-0.50; -0.35], p < .001), with estimations of partner's frequency of lies in Study 4 (r_s = -.10, 95% CI [-0.19; -0.01], p = .033)[7], and with ex-partner's dishonesty in Study 7 (r_p = -.35, 95% CI = [-0.42; -0.02], p < .001). Contrary to *Hypothesis 4*, no significant association was found between Honesty-Humility and ex-partner's dishonesty in Study 6 (r_p = .02, 95% CI = [-0.07; 0.11], p = .720).

We conducted parallel regression models for Studies 1, 4, 5, 6 and 7 (Model 1 and Model 2). In line with *Hypothesis 4*, Honesty-Humility was a significant predictor for all measurements of partner's relationship-based dishonesty we used in Studies 1, 4, 5 and 7 with the only exception of Study 6. For Study 6, none of the variables turned out as significant predictor for ex-partner's dishonesty, thus opposing *Hypothesis 4*. For Studies 4, 5 and 7, in line with *Hypothesis 5*, the negative association between Honesty-Humility and partner's frequency of lies remained robust even under control of Honesty-Propriety. Only in Study 4, gender also turned out to be a significant predictor for the estimation of partner's frequency of lies, indicating that women estimated higher frequencies of lies told by their romantic partners (of which 89.9% were male, and 6.2% female; see Table 5).

[7] Because of the right-skewed distribution of partner's frequency of lies in Study 4 (skewness = 3.47, *SE* = 0.11), we calculated Spearman's rank-order correlations (r_s) for correlation coefficients involving these variables.

Table 5

Regression Coefficients on Partner's Relationship-Based Dishonesty

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
1											
	Partner's dishonesty										
		(1)	HH	-1.099	0.087	-1.27	-0.93	<.001	-.50	.25	.25***
		(2)	HH	-1.089	0.088	-1.26	-0.92	<.001	-.50	.25	.00
			Gender	0.109	0.108	-0.10	0.32	.314	.05		
4											
	Partner's frequency[a]										
		(1)	HH	-0.062	0.027	-0.12	-0.01	.019	-.11	.01	.01*
		(2)	HH	-0.060	0.030	-0.12	0.000	.049	-.09	.03	.02**
			Gender	-0.107	0.034	-0.18	-0.04	.002	-.14		
			HP	-0.057	0.031	-0.12	0.00	.063	-.09		
5											
	Partner's dishonesty										
		(1)	HH	-0.928	0.091	-1.11	-0.75	<.001	-.43	.19	.19***
		(2)	HH	-0.426	0.108	-0.64	-0.21	<.001	-.43	.28	.09***
			Gender	-0.104	0.112	-0.33	0.12	.354	.03		
			HP	-0.772	0.102	-0.97	-0.57	<.001	-.50		

Study	DV	Model	Predictor			95% CI					
				B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
6											
	Ex-partner's dishonesty										
		(1)	HH	0.034	0.096	-0.15	0.22	.720	.02	.00	.00
		(2)	HH	0.003	0.118	-0.23	0.24	.979	.00	.00	.00
			Gender	-0.154	0.122	-0.39	0.09	.205	-.06	.00	.00
			HP	0.022	0.114	-0.20	0.25	.849	.01	.00	.00
7											
	Ex-partner's dishonesty										
		(1)	HH	-0.831	0.102	-1.03	-0.63	<.001	-.35	.12	.12***
		(2)	HH	-0.889	0.129	-1.14	-0.64	<.001	-.30	.12	.00
			Gender	0.039	0.107	-0.17	0.25	.717	.02		
			HP	0.094	0.125	-0.15	0.34	.456	.03		

Note. Number of participants after excluding participants who declared divers for gender: Study 1 $N = 476$; Study 4 $N = 471$; DV = dependent variable; 95% CI = confidence interval for *B*; *LL* = lower limit; *UL* = upper limit; r_{part} = partial correlation coefficients; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

[a] We conducted log base 10 transformation for partner's frequency of lies of Study 4 (skewness = 0.63, *SE* = 0.11).

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

Discussion

As hypothesized, across seven preregistered online studies and using several methodologies like close-ended self-report scales, the evaluation of scenarios about lying in romantic relationships, and direct frequency measures, we found clear support that Honesty-Humility is negatively linked with own relationship-based dishonesty (i.e., dishonesty emanated by oneself). Further, supporting our assumption that Honesty-Humility is overall negatively correlated with deception in romantic relationships, this negative association was found for other-oriented lies and self-oriented lies. We also found Honesty-Humility to be linked to decreased estimations of partner's dishonesty, supporting the assumption of an underlying social projection account (Thielmann & Hilbig, 2014). To test our hypotheses more broadly—specifically regarding past romantic relationships—we also asked for relationship-based dishonesty within the ex-relationship and found the predicted negative correlation between Honesty-Humility and own and ex-partners dishonesty (except for ex-partner's dishonesty in Study 6).

For all relationship-based deception measures of Studies 4 to 7, we found Honesty-Humility to account for unique variance of relationship-based dishonesty beyond the related but theoretically distinct personality factor Honesty-Propriety. Notably, Honesty-Propriety also significantly predicted dishonesty in some cases, but this negative association was not as reliable as the negative association between Honesty-Humility and relationship-based dishonesty. A summary of all results can be found in the Supplemental Material (see section 2.8).

Studies 1 to 7 reveal first support for our hypothesis; however, they allow for critique because they only measure deception at one single measurement point. To address this critical point, we run our diary-based Study 8.

Study 8: Diary-Based Study

A common method used in deception research consists of a daily diary methodology that allows for study of individuals' behavior in a natural setting. With this method, assessing deception is in real-time over a determined period (Kashy & DePaulo, 1996; Lischetzke, 2014).

Across our determined time span of five days, we predict that people higher in Honesty-Humility will report a decreased rate of own lies regarding their romantic partners (*Hypothesis 1*), a decreased frequency of other-oriented lies (*Hypothesis 2*) and a decreased frequency of self-oriented lies (*Hypothesis 3*). Other-oriented and self-oriented were both coded by three independent raters after data collection was completed. In line with *Hypothesis 5*, we predict that the association(s) between Honesty-Humility and rate of own lies should remain robust even when controlling for Honesty-Propriety. This study was preregistered at *AsPredicted* (https://aspredicted.org/bv3bh.pdf).

Importantly, we are not interested in a potential development of rate of lies over time; there is no theoretical assumption because Honesty-Humility is conceptualized as stable trait that should have the same effect on different days (e.g., Dunlop et al., 2021). Thus, since we are dealing with time-invariant covariates (i.e., Honesty-Humility and Honesty-Propriety) which were only assessed at one single measurement point, we preregistered to analyze our data with linear regression models with the mean value of rate of lies across the five days as central dependent variable instead of applying Multilevel Modelling. The main purpose of this diary-based approach is the more natural measurement of relationship-based dishonesty as discussed above.

Method

Subjects

We assumed a medium-sized effect of $r = .25$. With an assumed power of 99% and setting Type I error rate at $p < .05$, the analysis for correlation (two-tailed)

revealed a minimal sample size of *N* = 278. With the goal of obtaining complete data sets (i.e., no fewer than four reports) from a minimum 278 participants after the five-day long recording period, we collected data of 350 individuals via *Prolific* for the initial introductory session. Excluding all participants who missed more than one interaction and deception record across the five-day long recording period, the final sample consisted of *N* = 257 participants.

Procedure and Measures

The study consisted of six different parts: one initial introductory session and the five-day recording period. In the initial study, participants first confirmed participation requirements (same as in Study 1) and agreed to participate in all parts of this study, otherwise, further participation was not possible. We posed demographic questions, measured Honesty-Humility (α= .68; same as in Study 1) and Honesty-Propriety (α = .62; same as in Study 4). Afterwards, participants were informed that we will ask—for each day— for their number of interactions they have had with their romantic partners (i.e., interaction record) and for the number of lies told during these interactions (i.e., deception record). In line with DePaulo and Kashy (1998), we also asked them to briefly describe every lie and the reason why the lie was told (i.e., reasons for lying). For more details see the Supplemental Material (see section 4.7).

Participants who successfully participated in the initial study were invited to take part in the five-day recording period. For the recording period, we conducted time-based sampling, meaning that participants were asked to fill in the interaction and deception record once per day during a fixed time span (between 6 pm and midnight

UTC). On the fifth day and in addition to the daily interaction and deception record, we measured relationship commitment, satisfaction and closeness.[8]

Rate of Lies. As main dependent variable, we first summarized all recorded interactions and all recorded lies participants reported across the recording period; next we divided the total number of lies by total number of interactions which we label as *rate of lies*.

Different Types of Lies. Following a coding scheme first developed and used by DePaulo et al. (1996), participants' open-ended descriptions for their reasons for lying were coded as (a) *other-oriented lies* or (b) *self-oriented lies*. If an answer proved unsuitable to those categories, we coded it as (c) *undefined lie.* Three independent raters coded 792 responses. Since all inter-coder reliabilities were good (agreement Rater 1 with Rater 2 = 87.47%, Cohens Kappa (κ) = .76; agreement Rater 1 with Rater 3 = 88.86%, κ = .78; agreement Rater 2 with Rater 3 = 86.96%, κ = .74), we used the ratings of Rater 1. In sum, 357 (45.19%) answers were coded as other-oriented lies, 421 (53.29%) as self-oriented lies, and 12 (1.52%) as undefined lies.

Results

Honesty-Humility and Rate of Lies

Across the five-day long recording period, on average, participants lied in 26.51% (*SD* = 26.74)[9] of interactions with their romantic partners (interactions: *mean* = 13.54, *SD* = 10.10; range 2–125; lies: *mean* = 3.11, *SD* = 3.20; range 0–25).

As predicted, a first test of *Hypothesis 1* showed a significant negative correlation between Honesty-Humility and overall rate of lies and (r_s = -.16, 95% CI [-0.28; -0.03], p = .011; see Table 6).

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[8] Because these relationship quality variables are not the focus of this work, detailed descriptions and all analyses involving these variables can be found in the Supplemental Material (see section 2.9 and 3.4.1).

[9] If participants reported more than one interaction but no lies over the five-day long period (n = 50), the score for their rate of lies was computed as zero.

Table 6

Means, Standard Deviations, Intercorrelations (Pearson's r and Spearman's *ρ) and Confidence Intervals of Study Variables of Study 8*

	Mean	*SD*	(1)	(2)	(3)	(4)	(5)
(1) Rate of Lies (%)	26.51	26.74	–				
(2) Other-oriented lies (%)	13.10	18.47	.64***[a] [0.54; 0.71]	–			
(3) Self-oriented lies (%)	14.40	15.65	.62***[a] [0.54; 0.69]	.22[a]*** [0.09; 0.33]	–		
(4) Honesty-Humility	3.32	0.59	-.16*[a] [-0.28; -0.03]	-.08[a] [-0.21; 0.05]	-.13*[a] [-0.25; 0.01]	–	
(5) Honesty-Propriety	3.80	0.63	-0.09[a] [-0.22; 0.04]	-.01[a] [-0.13; 0.12]	-.08 [-0.21; 0.04]	.43*** [0.32; 0.52]	–

Note. Values in brackets are 95% confidence intervals. Rate of lies = total number of lies divided by total number of interactions.

[a] Because of the right-skewed distribution of rate of lies (skewness = 1.92, *SE* = 0.15), other-oriented lies (skewness = 2.83, *SE* = 0.15) and self-oriented lies (skewness = 1.93, *SE* = 0.15), we calculated Spearman's rank-order correlations for correlations involving these variables.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

We first conducted linear regression models inserting Honesty-Humility as predictor for rate of lies (Model 1). In a second step, we inserted gender (0 = female, 1 = male) as control variable (Model 2) and therefore excluded *n* = 1 participant who declared divers for gender (this exclusion remains for all following analyses of Study 7 including gender as control variable); we additionally inserted Honesty-Propriety as control variable (Model 2). As shown in Table 7, and supporting *Hypothesis 1*, Honesty-Humility proved to be a significant predictor for rate of lies. In line with *Hypothesis 5*, this is true even under control of Honesty-Propriety.

In the Supplemental Material (see section 3.4.2), even not preregistered, we applied Multilevel Modelling on our data.

Table 7

Regression Coefficients on Rate of Lies and Different Types of Lies of Study 8

DV	Model	Predictor			95% CI					
			B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
Rate of lies[a]										
	(1)	HH	-0.026	0.009	-0.04	-0.01	.003	-.19	.04	.04**
	(2)	HH	-0.021	0.010	-0.04	-0.002	.031	-.14	.05	.01
		Gender	0.020	0.011	-0.002	0.04	.072	.11		
		HP	-0.002	0.009	-0.02	0.02	.791	-.02		
Other-oriented lies[a]										
	(1)	HH	-0.009	0.007	-0.02	0.004	.153	-.09	.01	.01
	(2)	HH	-0.010	0.007	-0.03	0.01	.177	-.09	.01	.00
		Gender	0.001	0.008	-0.02	0.02	.875	.01		
		HP	0.002	0.007	-0.01	0.02	.777	.02		
Self-oriented lies[a]										
	(1)	HH	-0.013	0.006	-0.03	-0.002	.026	-.14	.02	.02*
	(2)	HH	-0.012	0.007	-0.03	0.001	.080	-.11	.02	.00
		Gender	0.007	0.008	-0.01	0.02	.373	.06		
		HP	0.000	0.006	-0.01	0.01	.963	-.00		

Note. DV = dependent variable; 95% CI = confidence interval for *B*; *LL* = lower limit; *UL* = upper limit; r_{part} = partial correlation coefficients; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

[a] We conducted log base 10 transformation for rate of lies (skewness = 1.06, *SE* = 0.15), other-oriented lies (skewness = 1.91, *SE* = 0.15) and self-oriented lies (skewness = 1.24, *SE* = 0.15).

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

Honesty-Humility and Different Types of Lies

Contrary to *Hypothesis 2*, a first test showed no significant correlation between other-oriented lies and Honesty-Humility (r_s = -.08, 95% CI = [-0.21; 0.05], p = .195). In line with *Hypothesis 3*, self-oriented lies were significantly negatively correlated with Honesty-Humility (r_s = -.13, 95% CI = [-0.25; -0.01], p = .035; see Table 6).

We conducted parallel regression models (Model 1 and Model 2). As shown in Table 7, all models failed to reach significance when analyzing other-oriented lies as dependent variable, thus opposing *Hypothesis 2*. Supporting *Hypothesis 3*, Honesty-Humility significantly predicted self-oriented lies in Model 1, indicating decreased self-oriented lies to be linked to higher levels of Honesty-Humility. Unexpectedly, Honesty-Humility no longer significantly predicted self-oriented lies in Model 2. Interestingly, including gender and Honesty-Propriety as control variables in Model 2 did not lead to a significant increase in variance (ΔR^2 = .00, p = .664) compared with Model 1, which only includes Honesty-Humility as predictor (ΔR^2 = .02, p = .026).

Discussion

With the daily diary method of Study 8, we found participants lied on average in every fourth interaction they have had with their romantic partners. As predicted, we found a negative correlation between Honesty-Humility and rate of lies towards the romantic partner over a period of five days. Importantly, asking participants every day to report their interactions and all lies told during these interactions reflects a more natural setting of data collection compared to Studies 1 to 7, thus increasing the ecological validity of the present finding.

When investigating different types of lies, in this study, Honesty-Humility was only found to be negatively correlated with self-oriented lies, but not with other-oriented lies. This is against our prediction which says that in romantic relationships, every type of lie violates the openness and authenticity people value in their

relationships (cf. DePaulo & Kashy, 1998; DePaulo et al., 1996), which is why we hypothesized Honesty-Humility to be negatively correlated with both types of lies; indeed, this was already supported in recent studies.

At this point we want to mention that we did not reach our sample size and in addition, we now assert that the effect we found for the association between Honesty-Humility and rate of lies was smaller than we assumed in our a priori power analysis. Given a post-hoc power analyses for the found correlation (r = -.16, N = 257, Type I error rate $p < .05$, two-tailed), we only had 73.5% power to detect a small effect in Study 8. This general power problem of Study 8 should be considered regarding the interpretation of the results. However, future research should address the question whether the predictive value of Honesty-Humility is influenced by different types of lies.

Even we increased the ecological validity in Study 8 compared to the studies before, the used method of Study 8 still relied on participants self-report to assess relationship-based dishonesty. In the past, deception research revealed further paradigms that base the dishonesty assessment on participants' active decision to behave deceptively or non-deceptively in concrete situations (e.g., Daumiller & Janke, 2020; Heyman et al., 2020). Accordingly, we also tested a number of different paradigms in which we measured actual relationship-based dishonest behavior in concrete situations (see Deception Paradigms in the OSF); we applied the most suitable deception paradigm in Study 9.

Study 9: Decision to Forward a Deceptive E-Mail

In Study 9, we applied a paradigm in which we measure relationship-based dishonesty due to participants' decision to forward a deceptive e-mail to their romantic partners in return for a financial reward. We predict that people higher in Honesty-Humility will decide less often to forward the deceptive e-mail to their partners

(*Hypothesis 1*), even when controlling for Honesty-Propriety (*Hypothesis 5*). This study was preregistered at *AsPredicted* (https://aspredicted.org/sq64h.pdf).

Method

Subjects

Setting power at 95% and Type I error rate at $p < .05$, and assuming a *odds ratio* of 1.44, the analysis for logistic regression (R^2 other X = 0.37) revealed a minimal sample size of $N = 654$. Due to possible exclusions, we collected data of 795 individuals via *Amazon Mechanical Turk.* After excluding participants who failed the manipulation check ($n = 64$) and further, who failed the final attention check ($n = 21$), the sample consisted of $N = 710$ participants.

Procedure and Measures

First, participants confirmed participation requirements (same as in Study 1). Second, they were informed that in this study would include questions about their personality. Next, we measured Honesty-Humility ($\alpha = .68$; same as in Study 1) and Honesty-Propriety ($\alpha = .60$; same as in Study 4). We then informed the participants that they now have completed the main part of this study and asked them, as an attention check, to indicate the topic of the study; they must choose between the answers “This study was about my personality” and “This study was about my quality of sleep”. If they indicated the wrong answer (i.e., quality of sleep), the study ended premature. We then told participants that they can receive double the compensation for participation if they are willing to forward the following e-mail to their romantic partner: “Hi, I recommend you take part in a study I have recently participated in. This is an interesting study about your quality of sleep.” Thus, sending an e-mail invitation to their romantic partner that promotes a study about the quality of sleep, in which they allegedly participated, is in fact a lie (remember that in the previous step, they already confirmed that this study was about their personalities). As a manipulation

check, participants had to agree that they are aware about the deceptive and misleading content of the e-mail; if not, as preregistered, participants were excluded afterwards. Participants then were asked to decide whether to send the deceptive e-mail or not by pressing a button for no or for yes. We operationalized the decision to forward the deceptive e-mail (1 = yes) as deceptive behavior towards the romantic partner. If participants chose not to forward the e-mail (0 = no), they were directed to the demographic questions and the final attention check (same as in Study 1). If they pressed “continue” in anticipation of sending the deceptive e-mail, participants were debriefed by saying that the e-mail was actually not sent to the partner (which is important because otherwise a negative intervention in the relationship would take place) and that they will receive their bonus payment regardless. After the debriefing, they also answered the demographic questions and the final attention check (same as in Study 1).

Results

Due to the included manipulation check, all participants confirmed to perceive the e-mail as deceptive in the final sample. As predicted in *Hypothesis 1*, a significant negative correlation between Honesty-Humility and the decision to forward the deceptive e-mail was found (r_p = -.36, 95% CI = [-0.42; -0.29], p < .001; see Table 8).

Table 8

Means, Standard Deviations, Intercorrelations (Pearson's r) and Confidence Intervals of Study Variables of Study 9

Variables	*Mean*	*SD*	(1)	(2)	(3)
(1) Decision (%)	55.78	49.70	–		
(2) Honesty-Humility	3.15	0.64	-.36*** [-0.42; -0.29]	–	
(3) Honesty-Propriety	3.51	0.69	-.39*** [-0.45; -0.32]	.65*** [0.60; 0.69]	–

Note. Values in brackets are 95% confidence intervals. Decision (%) = percentage of participants who decided to forward the deceptive e-mail (0 = no, 1 = yes).

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

We also conducted a logistic regression analysis using Honesty-Humility as predictor for the decision to forward the deceptive e-mail (0 = no, 1 = yes) as dependent variable (Model 1). In a second step, we inserted gender (0 = female, 1 = male) and Honesty-Propriety as control variables (Model 2). As shown in Table 9 and supporting *Hypothesis 1*, Honesty-Humility proved to be significant predictor for the decision to forward the deceptive e-mail. This was true even when controlling for Honesty-Propriety, thus supporting *Hypothesis 5*. The same pattern emerged when also including participants who failed the manipulation check (see section 3.5.1 in the Supplemental Material).

Table 9

Logistic Regression Coefficients on the Decision to Forward the Deceptive E-Mail of Study 9

Model	Predictor						95% CI	
		B	*SE B*	Wald	*p*	Exp(B)	*LL*	*UL*
(1)	HH	-1.268	0.142	79.28	<.001	0.28	0.21	0.37
(2)	HH	-0.682	0.174	15.41	<.001	0.51	0.36	0.71
	Gender	0.079	0.168	0.22	.639	1.08	0.78	1.50
	HP	-0.939	0.171	30.06	<.001	0.39	0.28	0.55

Note. 95% CI = confidence interval for Exp(B); *LL* = lower limit; *UL* = upper limit; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

Within two further preregistered online studies the same procedure was applied before. In both cases, Honesty-Humility proved to be a significant predictor for relationship-based dishonesty, even when controlling for Honesty-Propriety. Because we did not include manipulation checks in these two previous studies, we decided to not report them in the main manuscript. Detailed descriptions are available on the OSF (see Deception Paradigm; Studies I and II).

Discussion

Using a paradigm that measures actual dishonest behavior in a concrete situation, and in line with our hypothesis, people higher in Honesty-Humility were found to be less willing to send a deceptive email to their partners in favor of a financial reward (even when controlling for Honesty-Propriety), thus strengthen our general assumption claiming Honesty-Humility to be a key factor in predicting relationship-based dishonesty.

Importantly, we included a manipulation check to ensure that participants make a fully informed decision to forward misleading and deceptive information to their romantic partner. However, for a better generalizability of our results, we decided to run Study 10 applying another procedure that measures actual relationship-based dishonesty.

Study 10: Anagram Task

In Study 10, participants were invited to a study in which they should compete against their romantic partner in an intelligence task. They were shown eight different anagrams (i.e., word puzzles with scrambled letters; cf. Aspinwall & Richter, 1999), but only three were solvable. Therefore, reporting a number greater that three correctly solved anagrams can be operationalized as dishonest behavior towards the romantic partner. We therefore predict that participants with higher levels of Honesty-Humility will report a decreased number of correctly solved anagrams (*Hypothesis 1*), even when controlling for Honesty-Propriety (*Hypothesis 5*). This study was preregistered at *AsPredicted* (https://aspredicted.org/7fi6r.pdf).

Method

Subjects

Setting power at 95% and Type I error rate at $p < .05$, and assuming an *odds ratio* = 1.74, the analysis for logistic regression (R^2 other X = 0.37) revealed a minimal sample size of $N = 607$. We collected data of 835 individuals via *Prolific.* No participants were excluded afterwards.

Procedure and Measures

On *Prolific*, this study was only shown to participants whose profile includes that their romantic partner is also registered on *Prolific* and that both are willing to participate in a study together. The study was labeled as “compete against your romantic partner in an intelligence task” and participants were informed that the one

who performs better will receive a bonus payment. Participants confirmed participation requirements (same as in Study 1). Then, they should enter their own and their partners *Prolific ID*. Participants were told that this is necessary to compare the two results and to determine the winner. In fact, we will never invite the partner to this study*;* this only serves as a cover story. Through this cover story, we can measure relationship-based dishonesty without interfering in participants' relationships. Participants then answered the demographic questions (same as in Study 1). Next, we measured Honesty-Humility with the sixteen relevant items (α = .81) of HEXACO-PI-R (100-Version; Ashton & Lee, 2009) and Honesty-Propriety (α = .73; same as in Study 4). Participants then had to answer an attention check to make sure that they understood by participating in this study, they are entering into a competition with their romantic partner for a bonus payment; if they choose the wrong answer, the study ended premature. Then, we showed them the instruction of the intelligence task, which in fact was a usual anagram task. We presented eight different anagrams (cf. Aspinwall & Richter, 1999), all on the same page. The first three anagrams were solvable (TRYPA = PARTY, CIJUE = JUICE, RYORS = SORRY) and the following five anagrams were unsolvable (ONECI, AMOOS, ACELO, PECIT, FILRU). After four minutes time, participants had to self-report how many of the eight anagrams they could solve correctly. Participants were fully debriefed, and all received the bonus payment.

Deceptive Behavior. We created a binary variable with no false indication for all participants who reported to have solved three or less anagrams coded as 0 and with at least one false indication for participants who reported to have solved four or more anagrams coded as 1; this variable is labeled as *dishonesty*.

Results

In sum, 9.5% (*n* = 79) reported to have solved one anagram, 14.9% (*n* = 124) reported to have solved two anagrams, 51.3% (*n* = 428) reported to have solved three anagrams, 14.5% (*n* = 121) reported to have solved four anagrams, 4.6% (*n* = 38) reported to have solved 5 anagrams, 3.0% (*n* = 25) reported to have solved six anagrams, 1.3% (*n* = 11) reported to have solved seven anagrams, and 1.1% (*n* = 9) reported to have solved eight anagrams. Summarized, 24.4% reported to have solved more than three anagrams correctly and are therefore assumed to have lied.

As predicted in *Hypothesis 1*, there was a significant negative correlation between Honesty-Humility and dishonesty (r_p = -.08, 95% CI = [-0.14; -0.01], p = .026; see Table 10).

Table 10

Means, Standard Deviations, Intercorrelations (Pearson's r and Spearman's *ρ) and Confidence Intervals of Study Variables of Study 10*

Variables	*Mean*	*SD*	(1)	(2)	(3)
(1) Dishonesty (%)	24.34	43.00	–		
(2) Honesty-Humility	3.39	0.59	-.08* [-0.14; -0.01]	–	–
(3) Honesty-Propriety	3.76	0.65	-.12*** [-0.19; -0.05]	.48*** [0.43; 0.53]	

Note. Values in brackets are 95% confidence intervals. Dishonesty (%) = percentage of participants who reported to have correctly solved more than three anagrams and are therefore assumed to have lied.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

We conducted a logistic regression analysis using Honesty-Humility as predictor for absolute dishonesty (0 = no, 1 = yes) as dependent variable (Model 1). In a second step, we inserted gender (0 = female, 1 = male) as control variable (Model 2)

and therefore excluded *n* = 5 participants who declared divers for gender. We additionally inserted Honesty-Propriety as control variable (Model 2). As shown in Table 11 and supporting *Hypothesis 1*, Honesty-Humility proved to be significant predictor for dishonesty. Unexpectedly, Honesty-Humility no longer significantly predicted dishonesty in Model 2 (i.e., when controlling for gender and Honesty-Propriety), thus opposing *Hypothesis 5.* Indeed, only Honesty-Propriety proved to be a significant predictor in Model 2.

Table 11

Logistic Regression Coefficients on Dishonesty (%) of Study 10

Model	Predictor						95% CI	
		B	*SE B*	Wald	*p*	Exp(B)	*LL*	*UL*
(1)	HH	-0.310	0.140	4.92	.027	0.73	0.56	0.97
(2)	HH	-0.156	0.158	0.97	.325	0.86	0.63	1.17
	Gender	-0.153	0.166	0.85	.021	0.86	0.62	1.19
	HP	-0.329	0.142	5.33	.239	0.72	0.55	0.95

Note. 95% CI = confidence interval for Exp(B). *LL* = lower limit; *UL* = upper limit; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

As preregistered, we created a second variable for the number of unsolvable anagrams allegedly reported as solved, which we labeled as *relative dishonesty*. Since the pattern of the results was the same, we only report the analyses using this second dependent variable in the Supplemental Material (see section 3.6.1). In the Supplemental Material (see section 3.6.2.1 and 3.6.2.2), we also report non-preregistered results for the facet-level scales of Honesty-Humility (i.e., Sincerity, Fairness, Greed Avoidance, and Modesty).

Discussion

In line with our hypothesis, we again found a significant negative correlation between Honesty-Humility and relationship-based dishonesty, this time applying an anagram task. People high in Honesty-Humility reported a decreased number of correctly solved anagrams, which decreases their chance to win the extra payment. Since only three out of the eight anagrams were solvable, reporting a lower number of solved anagrams indicates decreased dishonesty towards the romantic partner

who was assumed to also take part in the anagram task due to our cover story. However, for the first time, Honesty-Propriety from the Big Six model of personality (Saucier, 2009) turned out to be an even stronger predictor for relationship-based dishonesty; we found a small-sized, significant correlation and further, in the shared regression model (i.e., including Honesty-Humility, gender, and Honesty-Propriety as predictors), only Honesty-Propriety remained significant.

In the retrospective, the deception measure of this study differs from the study before. In Studies 9, participants lied to their romantic partner about a matter of fact (i.e., a study invitation) to gain a monetary reward. In this Study 10, participants had to lie about their own performance in an anagram task (that was labeled as intelligence task) to gain a monetary reward, but probably also to maintain/to strengthen the own self-worth by claiming to have correctly solved a higher number of anagrams than true. Past research lacks clear evidence of where the Honesty-Humility and the Honesty-Propriety factor are similar and where they differ (cf. Thielmann et al., 2016). Probably, self-worth striving behavior is better captured by Honesty-Propriety; future research should systematically test this assumption.

Although anagram tasks are widely used and established in deception research (Gerlach et al., 2019), Heyman et al. (2020) asserted that dishonesty could be conflated with honest mistakes, meaning that participants are unaware of their overreporting because they mistakenly thought that they found a correct solution. However, considering this problem, and according to the recommendations of Heyman et al. (2020), Study 11 applied a die roll task as a final test of our hypotheses.

Study 11: Dice Roll

In line with recent research on the association between Honesty-Humility and deceptive behavior in economic situations, in Study 11, we applied a dice game

paradigm (cf. Fischbacher & Föllmi-Heusi, 2013), which we transferred to the specific context of romantic relationships.

In this dice game, participants were told that their romantic partners will prepare the same dice roll task and only the one who performed better will receive a bonus payment at the end. Thus, when finally asking them which number they had rolled, significant deviations from the expected value (which is 3.5) can be operationalized as deceptive behavior towards the romantic partner on an aggregated level. We predict that participants with lower levels of Honesty-Humility will report higher values of the dice roll (*Hypothesis 1*), even when controlling for Honesty-Propriety (*Hypothesis 5*). This study was preregistered at *AsPredicted* (https://aspredicted.org/hd8ei.pdf).

Method

Subjects

Setting power at 95% and Type I error rate at $p < .05$, and assuming an effect of $r = .15$, the analysis for correlation (two-tailed) revealed a minimal sample size of $N = 571$. Due to possible exclusions, we collected data of 640 individuals via *Prolific.* No participants were excluded afterwards.

Procedure and Measures

Participants were invited to a study labeled as “compete against your romantic partner in a dice roll task”. Up to the measurement of Honesty-Humility ($\alpha = .82$) and Honesty-Propriety ($\alpha = .75$), the procedure was exactly the same as in Study 10. We then informed participants that their romantic partners will prepare the same dice roll task and only the one who performed better will receive a bonus payment at the end. Further, participants were told that in case of a tie (i.e., both roll the same number), the person who participated first in this study wins (participants were always told that they are the first person who participated). Again, this cover story is important to

avoid negatively affecting their actual relationships. Participants then had to answer an attention check to make sure that they understood that only the one of both partners who rolled a higher number will receive a bonus payment; if they indicated the wrong answer, the study ended premature. Next, participants were asked to roll the dice and then to report the number they have rolled, which serves as dependent variable (i.e., *reported number*).

When using a six-sided dice, the expected mean value is 3.5. Through our modification of the paradigm, higher numbers give an advantage to participants but pose a disadvantage for their romantic partners to win the bonus payment. Therefore, we operationalize deviations above the expected mean value as deceptive behavior towards the romantic partner. Finally, participants filled out demographic measures (same as in Study 1). Participants were fully debriefed, and all received the bonus payment.

Results

Participants reported a mean value of 4.31 (*SD* = 1.32) for their dice roll which significantly differs from the expected value of 3.5, $t(639) =$, $d = 1.32$, $p < .001$. As predicted, and supporting *Hypothesis 1*, a first test showed lower Honesty-Humility scores to be significantly correlated with higher reported values for the dice roll ($r_p = -.12$, 95% CI = [-0.20; -0.05], $p = .002$; see Table 12).

Table 12

Means, Standard Deviations, Intercorrelations (Pearson's r) and Confidence Intervals of Study Variables of Study 11

Variables	*Mean*	*SD*	(1)	(2)	(3)
(1) Reported number	4.32	1.32	–		
(2) Honesty-Humility	3.42	0.59	-.12** [-0.20; -0.05]	–	
(3) Honesty-Propriety	3.87	0.63	-0.04 [-0.12; 0.03]	.49*** [0.42; 0.54]	–

Note. Values in brackets are 95% confidence intervals. Reported number = number of the dice roll participants indicated to had rolled.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

We conducted a linear regression model using Honesty-Humility as predictor for dishonest behavior (Model 1). In a second step, we inserted gender (0 = female, 1 = male) as control variable (Model 2) and therefore excluded *n* = 6 participants who declared divers for gender; we additionally inserted Honesty-Propriety as control variable (Model 2). As shown in Table 13, and supporting *Hypothesis 1*, Honesty-Humility proved to be the only significant predictor for dishonest behavior. This was true even when controlling for Honesty-Propriety, thus supporting *Hypothesis 5*. In Model 2, the value for the constant was 5.28, and the reported value for the dice roll decreased on average about 0.30 with every increase in the Honesty-Humility scale.

Two further preregistered online studies which applied different variants of a dice game paradigm are available on the OSF (see Deception Paradigms; Studies III and IV). In both studies, Honesty-Humility proved to be a significant predictor for relationship-based dishonesty.

Table 13

Regression Coefficients on the Reported Number of Study 11

Model	Predictor			95% CI					
		B	*SE B*	*LL*	*UL*	*p*	r_{part}	R^2	ΔR^2
(1)	HH	-0.277	0.087	-0.45	-0.11	.002	-.13	.02	.02**
(2)	HH	-0.297	0.101	-0.50	-0.10	.003	-.12	.02	.00
	Gender	-0.067	0.107	-0.28	0.14	.529	-.03		
	HP	0.023	0.097	-0.17	0.21	.816	.01		

Note. 95% CI = confidence interval for *B*; *LL* = lower limit; *UL* = upper limit; r_{part} = partial correlation coefficients; HH = Honesty-Humility; Gender = participants gender (0 = female, 1 = male); HP = Honesty-Propriety.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

In the Supplemental Material (see section 3.7.1), we also report non-preregistered results for the facet-level scales of Honesty-Humility (i.e., Sincerity, Fairness, Greed Avoidance, and Modesty).

Discussion

In line with our hypothesis, people lower in Honesty-Humility reported higher values of the dice roll. These higher values stand for a higher own chance of winning extra money, but a lower chance for the romantic partner who was assumed to also take part in the dice roll task due to our cover story. Given the assumption that participants would not lie to their disadvantage (i.e., reporting a lower number than they have had actually rolled; see also Hilbig & Zettler, 2015), the negative correlation between Honesty-Humility and reported number of the dice roll indicates increased deception towards the romantic partner for participants with lower Honesty-Humility scores.

Even this was a specific variant, dice roll tasks are an established method to measure deception. Given the fact that Honesty-Propriety as another honesty-related personality trait did not contribute to explained variance, and furthermore not even was significantly correlated with the deception measurement, the importance of the Honesty-Humility factor in predicting relationship-based dishonesty is underlined. Overall, these results can be considered as strong support for our hypotheses.

General Discussion

Across eleven preregistered online studies, we found substantial evidence in support of our hypothesis predicting that people higher in Honesty-Humility—a personality factor emanated from the HEXACO model of personality (Lee & Ashton, 2004)—showed decreased relationship-based dishonesty. This negative association reliably emerged, even though we used a variety of methodological approaches for the measurement of relationship-based dishonesty: closed-ended self-report scales, scenarios, direct frequency measures, a daily diary methodology, and the measurement of actual deceptive behavior in concrete situations. The negative association remained robust, even when controlling for gender and Honesty-Propriety.

Because Studies 1, 2, and 5 revealed Honesty-Humility to be negatively linked to other-oriented and self-oriented lies, our results prove that people higher in Honesty-Humility overall report less relationship-based dishonesty, independent of the underlying motive.

Because Honesty-Humility was not only linked to decreased own dishonesty, but also to decreased estimated partner's dishonesty, we view this as support for an underlying social projection account (Thielmann & Hilbig, 2014), indicating that people higher in Honesty-Humility hold higher trustworthiness expectations, resulting in decreased expectations of partner's dishonesty. Note that this was only true when

asking for dishonesty evaluations of the actual romantic partner, not when asking in the retrospective for dishonesty levels of the ex-partner.

Our work also addressed the predictive value of another honesty-related personality trait called Honesty-Propriety, which emanates from another recently developed, six-dimensional model called the Big Six model of personality (Saucier, 2009). Hilbig and Zettler (2015) already showed that Honesty-Humility accounts for unique variance in predicting dishonesty beyond the remaining five factors of the HEXACO model and the classic Big Five factors, but never with reverence to the Honesty-Propriety factor. Thus, the present work fills this gap. Compared to the Honesty-Humility factor, Honesty-Propriety is assumed to predict a broader set of variables related to negative valence and socially disapproved risk-taking (Thielmann et al., 2016). Our work also revealed Honesty-Propriety to predict relationship-based dishonesty, but this negative association did not reliably emerge across all studies when controlling for Honesty-Humility. Notably, in Study 10, the Honesty-Propriety factor turned out as stronger predictor compared to the Honesty-Humility factor. In the retrospective, we explained this by saying that the deception measure of Study 10 also measures self-worth striving behavior and that this is probably better captured by the Honesty-Propriety factor; but future research should systematically address the differences and commonalities of both factors.

Our overall finding that Honesty-Humility is negatively correlated with relationship-based dishonesty fits well with past research revealing Honesty-Humility to be the major predictor for the outcome domain of exploitation (Zettler et al., 2020). It is consistent with the work of Heck et al. (2018), who found Honesty-Humility to be the major factor in predicting dishonesty, independent of other personality traits and demographic variables (i.e., age and gender), and with recent studies revealing Honesty-Humility to be negatively linked with self-reported sexual infidelity (Bourdage et

al., 2007: Hilbig et al., 2015, Schild et al., 2020b). In general, this underpins the importance of those six-dimensional personality models like the HEXACO model of personality (Lee & Ashton, 2004), since personality models relied on in the 1980s and 1990s only consisted of five factors, with the main difference being five-factorial models lack a separate honesty-related personality factor.

Limitations

We aimed to collect large sample sizes for sufficiently powered studies, and we aimed to collect non-student samples. Because of the ongoing pandemic, which makes lab studies impossible, we decided to collect data online via different recruiting platforms (*Amazon Mechanical Turk* and *Prolific*). Of course, collecting data online poses concerns about quality, so we included several response quality screening techniques (i.e., attention checks, bot checks) to confirm overall data quality (e.g., Arias et al., 2020).

Another limitation is that some studies are based on self-ratings. In particular, some critical points of self-reports concern (a) the potential of misleading interpretations of the scales, (b) response biases, and (c) difficulties in recall. *First*, to avoid the problem of misleading interpretations, we applied several different scales, all of which used different operationalizations of relationship-based dishonesty. Since all scales revealed the predicted negative association between Honesty-Humility and the different deception measures, no problems with the validity of the results need to be assumed. *Second*, in deception research, the most discussed response bias is socially desirable response behavior, meaning that people underestimate their levels of dishonesty when being directly ask. In the given context, people low in Honesty-Humility are assumed to behave more immorally, they are also more likely to conceal that immoral behavior (e.g., Hilbig et al., 2015). When this proved to be the case in the present data, we underestimated the found effect so that the potential occurrence of

socially desirable response behavior should not question our results. Moreover, Lee and Ashton (2012) noted that people low in Honesty-Humility are not pathologically unable to tell the truth so "self-reports of Honesty-Humility are likely to be very accurate, at least when these are provided in an anonymous research setting." (p.76). *Third,* because of difficulties in recall, results of the self-reports cannot be concluded one-to-one to the prevalence of real deceptive behavior. However, self-report scales are the most common measure for asking people about their experiences in relationship-research (Miller, 2015). Hence, after the careful investigation of our hypotheses with several self-report scales, we conducted further studies that applied more behavioral measures. All showed the same pattern as studies that used self-report scales, thus strengthening the validity and generalizability of our results overall

Implications

Implications for Research

This work has comprehensively shown that Honesty-Humility is an important predictor for relationship-based dishonesty. Considering honesty as a central value for many people in social relationships, and since past research agreed on the negative effects of dishonesty on the quality of a romantic relationship (e.g., Cole, 2001; DePaulo & Kashy, 1998; Peterson, 1996; Williams, 2001), an individual's level of Honesty-Humility may also play an important role in predicting relationship quality. Indeed, we found first evidence that showed Honesty-Humility to be associated with increased relational commitment, satisfaction, and closeness in an actual existing romantic relationship (see section 2.4, 2.9, 3.1.1 and 3.4.1 in the Supplemental Material). As an individual's mental and physical health is strongly affected by the quality of his or her (intimate) relationships (e.g., Miller, 2015), this is an important starting point for future research. Ideally, longitudinal studies should follow, investigating the effect of Honesty-Humility on relationship quality in the long run.

Another approach might be collecting dyadic data to investigate the inter- and intrapersonal mechanisms of deception, especially for self-reported dishonesty (e.g., Cole, 2001). However, this type of research should be done with special consideration when measuring actual dishonesty behavior (for example, due to cheating paradigms from behavioral ethics). In these situations, participants are supposed to lie to each other and eventually uncover the lie with following negative consequences for their actual relationship, and such negative consequences should be avoided or even minimized. In our studies, we also found a way to measure relationship-based dishonest behavior and at the same time made sure to never endanger our participants' real relationships (due to our cover stories).

Even though there is much evidence to suggest that Honesty-Humility is the key predictor for dishonesty with no other factor from the HEXACO and Big Five (Heck et al., 2018) or Dark Tetrad (Pfattheicher et al., 2018) showing any incremental validity beyond Honesty-Humility, future research could investigate the question of incremental validity of other factors of the HEXACO, Big Five, and Dark Triad traits on general relationship-based dishonesty.

Because in Studies 10 and 11, we measured Honesty-Humility with sixteen items (from the HEXACO-PI-R 100-item version) instead of only 10 items (from the HEXACO-PI-R 60-item version), we also tested the narrow facets of Honesty-Humility (i.e., Sincerity, Fairness, Greed-Avoidance, and Modesty) on relationship-based dishonesty. Aligned with recent research (e.g., van Rensburg et al., 2018), it appeared that the effect is mainly driven by the facet Greed-Avoidance, indicating that people who strongly enjoy privilege and wealth are the most likely to lie. Future research should replicate this, ideally using the HEXACO-PI-R 200-item version to increase internal reliability for the single facet-level scales.

At this point—as a general note—we want to mention that we gained the impression that individual differences in Honesty-Humility and that trait's influence on romantic relationships have been neglected in research so far. That said, we recommend that this personality factor be given much more consideration. The lack of previous findings is because most works on intimate relationships only refer to Big Five Models (e.g., Miller, 2015), neglecting the Honesty-Humility factor. As already discussed, the association between Honesty-Humility and deception has mainly been established in the context of game theory, and social psychologists have refrained from analyzing this factor with reference to social relationships.

Practical Implications

In a romantic relationship, the own levels of Honesty-Humility matter, but so do those of the romantic partner, begging the question whether one can appraise someone's level of Honesty-Humility or whether this trait is too subtle; according to Lee and Ashton (2012), it is possible, relying on their own research in which self-reports and observer reposts were highly correlated (see also Lee & Ashton, 2013). But beyond doing a personality inventory with a (potential) romantic partner—which hardly seems close to reality—Lee and Ashton (2012) described valid signs of low Honesty-Humility levels, which can be observed in everyday interactions and which therefore should be considered when choosing a romantic partner.

Obviously, people who say, without joking, that they plan to break the law for example by evading income taxes, are likely to cheat on others, including their romantic partner (i.e., *beating the system*; see also Zettler & Hilbig, 2010). People who are only friendly and polite to people who are useful to them are also more likely to be disloyal to their romantic partner (i.e., *instrumental ingratiation*; see also Thielmann et al., 2021). To frequently risk ample money by *gambling* or *speculation* expresses the desire to quickly get rich for doing nothing, which is also a sign of low

Honesty-Humility scores (see also Kim et al., 2018). Clearly, *sexual infidelity* is in itself a warning sign when entering a (monogamous) relationship (see also Ashton & Lee, 2008; Bourdage et al., 2007). Together with this, people low in Honesty-Humility more likely boast about sexual conquests (mainly done by men) or more likely boast about the material benefits of a relationship (mainly done by women; see also Bourdage et al., 2007). An overall pattern of *conspicuous consumption*, characterized by a variety of different, expensive status symbols, is also usual for people low in Honesty-Humility (see also Lee et al., 2013). Finally, disparaging comments about other groups, thereby signaling that not all people deserve dignity and fair treatment, is characteristic of people low in Honesty-Humility (i.e., *contempt of other groups*; see also Lee et al., 2013).

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Appendix B

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The correlation of honesty-humility and learning goals with academic cheating

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Abstract
Academic cheating is a problem that affects many educational institutions and has become increasingly significant with the new challenges of online education. Recent studies have found that learning goals are correlated with cheating behavior among students. In this study, we investigated whether learning goals are still a predictor of cheating behavior when controlling for students' Honesty-Humility (emanated from the HEXACO model of personality) within a sample of 311 German university students. Regrading students' learning goals, we assessed their learning approach, performance approach, performance avoidance, and work avoidance. The result shows an intermediate negative and highly significant association between Honesty-Humility and academic cheating. Learning goals did not explain any incremental variance in academic cheating that goes beyond the Honesty-Humility factor. As the only exception, the work avoidance goal was found to also predict cheating behavior, but this positive association seems to be not as strong as the negative correlation between Honesty-Humility and academic cheating. We discuss the theoretical and practical implications of these results and make recommendations for future research.

Keywords Academic cheating · Honesty-Humility · Learning goals · Achievement goal theory

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1 Introduction

Academic cheating has been a popular field of research in many psychological disciplines, such as educational and social psychology. Following Newstead et al. (1996), this study defines academic cheating as cheating on coursework including plagiarism, data manipulation and collaborative cheating, cheating on exams including collusion, lying for special consideration (for example lying for extension), and noncollaborative cheating in exams (for example writing off something). Academic cheating can cause severe consequences; for example, cheating negatively affects a student's ethical and moral standards. However, non-cheaters are also affected because they may feel unfairly treated when they are graded worse compared to academic cheaters (Iqbal et al., 2021). Thus, institutions must react to the misconduct. Cheating can also impact the education system as a whole, undermining the validity of academic tests (Daumiller & Janke, 2019; Garavalia et al., 2007; McCabe, 2005; McCabe et al., 2001). Research has shown that cheating during an academic career influences and predicts cheating and counterproductive behavior in a future workplace (Nonis & Swift, 2001). Therefore, it is important to investigate academic cheating and possible predictors, as cheating has broad implications and consequences.

In light of the ongoing COVID-19 pandemic, the importance of investigating academic cheating has increased, and past research has revealed that compared to in-person classes, academic cheating is more likely in online classes (Kennedy et al., 2000). Similarly, King and Case (2014) have reported a trend toward increased cheating in online environments. Watson and Sottile (2008), however, have reported higher actual cheating rates in live classes, even though students self-reported they were more likely to cheat in online classes. Grijalva et al. (2006) have identified no difference between the cheating rates in online versus live classes. Overall, these findings are inconsistent but may simply indicate the need for more research in this field.

Because cheating is often described as motivated behavior as it involves a conscious decision to break rules to gain an advantage (Anderman, 2007; Anderman & Koenka, 2017; Anderman & Murdock, 2007; Daumiller & Janke, 2020; McCabe et al., 2001; Schraw et al., 2007), students' motivation is assumed to play a role in whether they decide to cheat.

1.1 Learning goal theory

One motivational approach to explain academic cheating is the learning goal theory, also labeled the achievement goal theory. Learning goals describe what motivates students to put effort into their work, and these different aims are assumed to lead to differential performance outcomes (e.g., Elliot et al., 2005). In past research, a dichotomous distinction between a *mastery (or learning) goal orientation* and a *performance (or extrinsic) goal orientation* was prominent (Dweck, 1986; Dweck & Leggett, 1988; Elliot, 2005). The mastery goal orientation is described as an adaptive pattern by students who want to learn the contents and gain a deep understanding of them (Dweck, 1986; Elliot, 2005). By contrast, the performance goal orientation is described as a maladaptive, helpless pattern, with a focus on demonstrating competence compared with others as a means to aggrandize one's ability status (Daumiller

& Janke, 2020; Dweck, 1986; Elliot, 2005). As research developed, further (more detailed) distinctions have been discussed.

As an example, Elliot (2005) applied a trichotomous approach. Besides the mastery goal, defined as the student's motivation of being geared toward expansion of personal knowledge, a deeper understanding of the studied subjects, and personal improvement, Elliot further separated the performance goal into a *performance approach goal* and a *performance avoidance goal*. Students with a strong performance approach goal orientation strive to achieve a specific result, such as recognition for their performance or grades or a positive comparison to others. The aim is to appear competent and to achieve a positive outcome or accomplishment. Students with a strong performance avoidance goal orientation are mainly anxious about not being seen as competent and try to avoid negative comparisons. The aim here is to not be seen as incompetent and therefore to avoid a negative outcome. In 2001, Elliot and McGregor proposed a 2 (mastery vs. performance) x 2 (approach vs. avoidance) goal framework, which further separates the mastery goal into a mastery approach goal and a mastery avoidance goal; the main difference is the valence of competence, where competence in mastery approach goals is valenced positive, and competence in mastery avoidance goals is valenced negative.

Key to the present work is previous research that has shown how a student's goal orientation predicts academic cheating. For example, students with a performance goal orientation are more likely to cheat in the academic context, compared with students with a mastery approach goal orientation, independent of the approach or the avoidance orientation (Jordan, 2001; Van Yperen et al., 2011; see also Rettinger et al., 2004). The basic argument is that cheating for students who are mastery-oriented would not assist them in their goal to truly understand the learned content. By contrast, for students, who are performance-oriented, independent of approach or avoidance oriented, cheating would help to achieve their goal (i.e., approach success to others, respectively avoid failure; e.g., Anderman, 2007).

More recent studies have shown that many other variables need to be considered when investigating the effect of learning goals on cheating behavior. For example, Daumiller and Janke (2020) have highlighted the importance of social norms for this effect, revealing that if the environment shows acceptance for the cheating behavior, cheating increases. These authors have also shown that the focus of evaluating performance interacts with the learning goal orientation (Daumiller & Janke, 2019); when students' results rather than their learning processes were the focus of performance evaluation, cheating behavior increased. Anderman and Won (2017) have asserted that the perceived goal structure of the classroom (i.e., mastery being emphasized in the classroom by the teachers, rather than just grades and performance) also affects the students' beliefs about cheating.

Based on the learning goal theory, academic cheating seems to be a highly motivated behavior, but there are also other characteristics (independent of students' learning goals) that affect dishonest behavior. Besides characteristics such as age, gender, or cultural differences, which have already been investigated (McCabe et al., 2001; Miller et al., 2007), there are solid theoretical arguments for the personality factor Honesty-Humility (emanated from the HEXACO model of personality; Lee & Ashton 2004) to also predict academic cheating.

1.2 Honesty-Humility

In the past, the most popular approach to measure a person's personality consisted of the five-factorial personality model (i.e., the Big Five), which differentiates between the personality traits Neuroticism, Extraversion, Openness to experiences, Consciousness, and Agreeableness. Among these personality factors, Agreeableness and Consciousness are the best predictors for academic performance and also for academic cheating (Cuadrado et al., 2021; De Vries et al., 2011). Importantly, recent research revealed a six-factorial personality model, labeled as the HEXACO model of personality (Lee & Ashton, 2004), that comprises a sixth personality factor denoted as Honesty-Humility. Honesty-Humility is described as "the tendency to be fair and genuine in dealing with others, in the sense of cooperating with others even when one might exploit them without suffering retaliation" (Ashton & Lee, 2007, p. 156). This factor includes the four facets Sincerity (i.e., the tendency to be genuine in interpersonal relations), Fairness (i.e., the tendency to avoid fraud and corruption), Greed avoidance (i.e., the tendency to be uninterested in possessing lavish wealth, luxury goods, and signs of high status), and Modesty (i.e., the tendency to be modest and unassuming).

In the past, Honesty-Humility appeared to be the key factor in predicting dishonesty, with people lower in Honesty-Humility showing increased dishonest behavior (Heck et al., 2018; Hilbig & Zettler, 2015; Schild et al., 2020). Honesty-Humility has also been found to accurately predict academic cheating. De Vries et al. (2011) also showed Honesty-Humility to be the key predictor of counterproductive academic behavior, including cheating and plagiarism. The work of Hilbig and Zettler (2015) revealed Honesty-Humility as a predictor of cheating whose impact goes beyond any other factors in the HEXACO model or the Five Factor model. Pfattheicher et al. (2019) also demonstrated the predictive validity of Honesty-Humility for cheating behavior and further showed that Honesty-Humility overshadowed other relevant variables for predicting dishonesty (i.e., narcissism, Machiavellianism, psychopathy, and sadism). O'Connor et al. (2021) examined cheating behavior across different adult age groups, and their results showed that higher Honesty-Humility predicted less cheating behavior. In line with these studies, a re-analysis of several studies on cheating found Honesty-Humility to be a reliable and robust predictor for cheating behavior in general (Heck et al., 2018). Among the four facets of the Honesty-Humility factor, Fairness was the most accurate predictor for academic cheating, whereas Greed avoidance best predicted the specific cheating behavior of collegiate cheating (De Vries et al., 2011; Van Rensburg et al., 2018).

1.3 The present study

Following past research, learning goals are a valid predictor for academic cheating (Janke et al., 2019; Jordan, 2001; Rettinger et al., 2004; Van Yperen et al., 2011). Interestingly, Dinger et al. (2015) have demonstrated a correlation between Honesty-Humility and learning goals. Under the assumption that people higher in Honesty-Humility do not feel entitled to more respect than others, as hypothesized, their results showed significant negative correlations between Honesty-Humility and both

the performance approach goal and the performance avoidance goal, and a significant positive correlation between Honesty-Humility and the mastery goal. But in sum, only a few researchers have pursued the direct influence of Honesty-Humility on learning goals.

Given the recent findings revealing Honesty-Humility to be a key factor in predicting general dishonest behavior (Heck et al., 2018; Hilbig & Zettler, 2015; Schild et al., 2020), but particularly with reference to research that revealed (a) Honesty-Humility to significantly predict (academic) cheating (Ashton & Lee, 2008; De Vries et al., 2011; Heck et al., 2018; Hilbig & Zettler, 2015; O'Connor et al., 2021; Pfattheicher et al., 2019) and (b) Honesty-Humility to share a substantial amount of variance with learning goals (Dinger et al., 2015), we wanted to test if learning goals could explain any significant incremental variance of academic cheating that goes beyond the explained variance of the predictor Honesty-Humility.

In this study, we used two different self-report scales to measure academic cheating (i.e., Anderman & Won, 2017; Rettinger et al., 2004). Both self-report scales trace back to Newstead et al. (1996), who operationalized academic cheating as cheating on coursework including plagiarism, data manipulation and collaborative cheating, cheating on exams including collusion, lying for special consideration (for example lying for extension), and noncollaborative cheating in exams (for example writing off something).

For measuring student's learning goals, the present work employs Elliot's (2005) approach of a trichotomous goal structure. This approach includes the mastery (or learning) goal, the performance approach goal, and the performance avoidance goal. We refrain from a further separation of the mastery goal into a mastery approach goal and a mastery avoidance goal as suggested by Elliot and McGregor (2001), because we believe the global mastery goal should negatively predict academic cheating—whether approach or avoidance-oriented—as this global mastery goal should encourage students to truly improve their learning in any case and therefore lead to decreased academic cheating (e.g., Anderman, 2007; Janke et al., 2019; Van Yperen et al., 2011). Regarding the separation of the performance goal into a performance approach goal and a performance avoidance goal, some researchers would likely argue similarly, claiming that a global measurement of the construct is sufficient for the prediction of academic cheating (e.g., Van Yperen et al., 2011). However, in the context of academic cheating, there is first evidence revealing that both performance goals (i.e., the performance approach goal and the performance avoidance goal) differ in the way that the performance avoidance goal is more closely related to academic cheating compared to the performance approach goal. Indeed, the results of Janke et al. (2019) showed that academic cheating (or rather the use of questionable research practices which are defined as strategies that aim to increase the chance to publish at the cost of scientific accuracy) is positively linked to the performance approach goal but negatively linked to the performance avoidance goal (Janke et al., 2019). To test this, on the one side, positive association, and on the other side negative association between both performance goals and academic cheating, we followed the trichotomous goal structure of Elliot (2005).

Additionally, we included the so-called *work avoidance goal orientation* in our research, which is defined as the motivation to achieve good results with little effort

and workload (Daumiller et al., 2019; Elliot, 2005). We included this learning goal in addition to the trichotomous structure because previous research has shown avoidance goal orientation to be highly relevant in predicting students' academic behavior in various ways. King and McInerney (2014) showed that the work avoidance goal can be associated with several negative outcomes in the academic context, such as lower grades and less engagement. Furthermore, they demonstrated a clear distinction of the work avoidance goal from the mastery as well as the performance goals. Pavlin-Bernardić et al. (2017) examined cheating behavior among students and found a significant positive association between the work avoidance goal and active cheating to increase the own academic outcome.

1.3.1 Hypotheses

In more detail, we expect Honesty-Humility to be a significant predictor of academic cheating (*Hypothesis 1*). Even if this is not preregistered, a clear direction of the relationship can be predicted: Students lower in Honesty-Humility should report increased academic cheating. We also predict learning goals to be a significant predictor for academic cheating (*Hypothesis 2*). Again, even not preregistered, based on previous research we hypothesize that students lower in their mastery goal orientation should report increased academic cheating. Even if recent findings are mixed (cf., Janke et al., 2019), we further predict that students higher in their performance approach orientation, and higher in their performance avoidance orientation, should report increased academic cheating. We also predict a positive correlation between work avoidance orientation and academic cheating. Moreover, following the argument of Janke et al., (2019), one could predict that all learning goals could explain significant incremental variance of academic cheating that goes beyond the explained variance of Honesty-Humility. By contrast, following the theoretical reasoning of Hilbig and Zettler (2015; see also, Pfattheicher et al., 2019), we do not expect (and preregistered) that learning goals do explain any significant incremental variance of academic cheating that goes beyond the explained variance of the predictor Honesty-Humility (*Hypothesis 3*).

2 Method

Before data collection, the study was preregistered at *AsPredicted* (https://aspredicted.org/yb2k9.pdf). The *Open Science Framework* (OSF; osf.io/tcen4) entails data, syntax, and Supplemental Material including detailed information about further preregistered analyses. For the study, relevant ethical guidelines were followed.

2.1 Subjects

Before data collection, we conducted an a priori power analysis to determine the minimum sample size required to detect the expected effect. We used the program G*Power (Version 3.1.9.4; Faul et al., 2009). With an assumed power of 0.80, setting Type I error rate at $p < .05$, and assuming an effect size between learning goals and

academic cheating (*Hypothesis 2*) of $r = .16$ (cf. Janke et al., 2019), the power analysis for correlation (two-tailed) revealed a minimal sample size of $N = 237$. Nevertheless, we aim to collect data from $N = 250$ participants. To check whether this sample size is also adequate for detecting a potential correlation between Honesty-Humility and academic cheating (*Hypothesis 1*), we additionally conducted a posthoc power analysis. With the given sample size of $N = 250$, and assuming an effect size between Honesty-Humility and cheating of $r = .30$ (Heck et al., 2018), the posthoc power analysis for correlation (Type I error rate at $p < .05$, two-tailed) revealed a power > 0.99.

Data collection began in November 2021. We set a data collection period of six weeks, wherein we actively recruited participants. In the preregistration, we stated that if we did not achieve the minimum sample size after the set period, we would continue with the data collection for an unknown period until we had collected the data of at least 250 participants. However, after six weeks, sufficient participants were recruited. Recruiting took place via *Surveycircle*, which is an online platform with a nonmonetary function that recruits participants to take part in research projects (https://www.surveycircle.com/de/). We compensated participants who took part in the survey via this website with so-called Surveycircle points. Psychology students from the University of Kassel were compensated with points for participation required for their course credits. The final sample consisted of $N = 311$ German university students (76.8% female, 22.2% male, 1% diverse) with a mean age of 24.4 years ($SD = 6.25$).

2.2 Procedure

Participants first read the informed consent, including the prerequisites to participate in the study (i.e., over 18 years, registered student at a German university at the date of participation) and a declaration of voluntariness. Participants were informed that their responses would remain anonymous. After the participants agreed to the informed consent, they completed two different scales for the measurement of academic cheating, followed by the Honesty-Humility scale. Next, participants completed the four subscales to measure students' mastery (or learning) goal orientation, performance approach goal orientation, avoidance approach goal orientation, and work avoidance goal orientation. Finally, participants answered demographic questions.

2.3 Measures

2.3.1 Academic cheating

First, we used 17 self-adapted items ($\alpha = 0.73$) of a scale created by Rettinger et al. (2004). This instrument measures cheating behaviors on exams, papers, and homework/labs. It is mainly about using unauthorized information in different test situations, respectively giving this information to others. For example, "I copied from someone during an in-class exam", "I gave test information to someone in a later section", and "I used exact words or ideas from a book or other printed publication without acknowledging the source".

Second, we used 22 self-adapted items (α = 0.71) of a scale created by Anderman and Won (2017). Next to common cheating behaviors like plagiarism and the use (and distribution) of unauthorized information in test situations, this scale additionally assesses further aspects like, for example, making false personal excuses ("Lying about medical or other circumstances to get an extended deadline or exemption from a piece of work") and collaborative cheating ("In a situation where students mark each other's work, coming to an agreement with another student or students to mark each other's work more generously than it merits").

Both scales required participants to indicate if they had ever engaged in the described behavior (yes or no). The time period was not further defined, so that the students could align their answer to the entire university career—and possibly also to a previous school career. For both scales, all "yes" answers were computed to a cheating score ranging from zero to 17 for the scale created by Rettinger et al., and from zero to 22 for the scale created by Anderman and Won. In contrast to the preregistration protocol but following one anonymous suggestion of one reviewer, we summarized both cheating scores to one final dependent variable; this variable ranges from zero to 39 and was labeled as *cheating*. Internal reliability across both scales was α = 0.84.

2.3.2 Learning goals

To measure students' learning goal orientation, we used 16 self-adapted items of Instructors' Achievement Goals for Teaching scale created by Daumiller et al. (2019). As our target group consisted of German students, we adapted the items by changing certain words to fit for students instead of teaching trainees. Mastery goal orientation was measured with four items (α = 0.93; "I want to constantly improve my competences"); Daumiller denoted it as a *learning approach*. Performance approach was measured with the four items (α = 0.94) of Daumillers' subscale denoted as *task approach* ("I want to fulfill the different requirements very well"). Performance avoidance was measured with the four items (α = 0.88) of Daumillers' subscale denoted as *task avoidance* (e.g., "I want to avoid being bad"), and *work avoidance* was also measured with four items (α = 0.95; e.g., "It is important to me to have little to do"). Participants were instructed to indicate their agreement on each statement on an 8-point scale ranging from 1 (*do not agree*) to 8 (*agree completely*).

2.3.3 Honesty-Humility

We measured Honesty-Humility with the 16 relevant items (α = 0.82) of the HEXACO-PI-R (100-item version) created by Lee and Ashton (2018). Participants were instructed to indicate their agreement on each statement on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (strongly *agree*).

Table 1 *Means, Standard Deviations, Intercorrelations and Confidence Intervals for Study Variables*

Variables	Mean	*SD*	range	(1)	(2)	(3)	(4)	(5)	(6)
(1) Cheating	6.84	4.95	1–39	–					
(2) Learning approach	6.83	1.17	1–8	-.08[a] [-0.19; 0.04]	–				
(3) Task approach	6.92	1.11	1–8	-.11[a] [-0.22; 0.01]	0.52***[a] [0.43; 0.60]	–			
(4) Task avoidance	7.04	1.19	1–8	-0.12*[a] [-0.23; -0.01]	0.29***[a] [0.18; 0.39]	0.57***[a] [0.49; 0.64	–		
(5) Work avoidance	4.34	1.80	1–8	0.18** [0.07; 0.29]	-0.28***[a] [-0.38; -0.17]	-0.23***[a] [-0.33; -0.12	-.06[a] [-0.18; 0.05]	–	
(6) Honesty-Humility	3.52	0.58	1–5	-0.31*** [-0.40; -0.20]	0.18**[a] [0.06; 0.29]	0.15**[a] [0.03; 0.26	0.15*[a] [0.03; 0.26]	-0.22*** [-0.33; -0.11]	–

Note. $N = 311$. Values in brackets are 95% confidence intervals. Cheating = Summarized score of both cheating scales.

[a] Because of the extreme left-skewed distribution of learning approach (skewness = -1.02, $SE = 0.14$), task approach (skewness = -1.23, $SE = 0.14$), and task avoidance (skewness = -1.41, $SE = 0.14$), we calculated Spearman's rank-order correlations for correlation coefficients involving these variables.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

3 Results

As shown in Table 1, and as predicted in *Hypothesis 1*, Honesty-Humility was significantly negatively correlated with academic cheating ($r_p = -0.31$, 95% CI = [-0.40; -0.20], $p < .001$). Regarding the different learning goals, task avoidance was significantly negatively correlated with cheating ($r_s = -.12$, 95% CI = [-0.23; -0.01], $p = .035$), and work avoidance was significantly positively correlated with cheating ($r_p = 0.18$, 95% CI = [0.07; 0.29], $p = .001$). No other significant correlations between the different learning goals and cheating appeared (all $ps \geq 0.057$). Thus, *Hypothesis 2* was only supported regarding students' work avoidance goal. Even there was a significant correlation between task avoidance and cheating, this was against our predicted direction, indicating students stronger in their task avoidance orientation to report decreased cheating. As preregistered, we also conducted a correlation analysis with both cheating scales treated separately (see the Supplemental Material).

To perform the regression analyses, we implemented the bootstrapping method, which is a nonparametrical procedure and robust against violations in the distributional assumptions. We performed this procedure by generating 2,000 bootstrap samples and by using the BCa method (Field, 2013).

We conducted linear regression models using Honesty-Humility as predictor for the summarized score of both cheating scales (Model 1). In a second step, we inserted the variables learning approach, task approach, task avoidance, and work avoidance as predictors (Model 2) to determine if these additional predictors explain incremental variance.

Table 2 *Regression Coefficients on Academic Cheating*

Model	Predictor			BCa 95% CI				
		B	*SE B*	Low	High	β	R^2	ΔR^2
(1)	Honesty-Humility	-2.60***	0.48	-3.56	-1.73	-0.31	0.09	0.09***
(2)	Honesty-Humility	-2.32***	0.47	-3.26	-1.43	-0.27	0.11	0.02
	Learning approach	0.17	0.30	-0.45	0.79	0.04		
	Task approach	-0.23	0.33	-0.85	0.37	-0.05		
	Task avoidance	-0.12	0.27	-0.64	0.39	-0.03		
	Work avoidance	0.33*	0.16	0.03	0.65	0.12		

Note. $N = 311$. Results are computed by using the bootstrapping method with 2,000 bootstrap samples and BCa confidence intervals. Cheating = Summarized score of both cheating scales.

*$p < .05$, two-tailed. **$p < .01$, two-tailed. ***$p < .001$, two-tailed.

As shown in Table 2 and in line with *Hypothesis 1*, Honesty-Humility significantly predicted academic cheating in Model 1, B = -2.60, $SE\ B = 0.48$, BCa 95% CI = [-1.79; -0.65], β = -0.31, $p < .001$. Supporting our *Hypothesis 1*, this negative association remained robust in Modul 2, B = -2.32, $SE\ B = 0.47$, BCa 95% CI = [-3.26; -1.43], β = -0.27, $p < .001$. This analysis revealed weak support for *Hypothesis 2*; in Model 2, only one of the inserted learning goals was found to be a significant predictor. Only work avoidance showed a small significant effect on academic cheating, $B = 0.33$, $SE\ B = 0.16$, BCa 95% CI = [0.03; 0.66], β = 0.12, $p = .037$. In line with *Hypothesis 3*, including the learning goals learning approach, task approach, and task avoidance in our Model 2 did not explain any incremental variance beyond the Honesty-Humility factor (see Table 2).

As preregistered, we also conducted parallel regression analyses (Model 1 and Model 2) but treated both cheating scales separately. For both, the scale of Rettinger et al. (2004; i.e., Scale 1) and the scale of Anderman and Won (2017; i.e., Scale 2), Honesty-Humility was a strong and significant predictor in Model 1 (Scale 1: B = -1.22, $SE\ B = 0.28$, BCa 95% CI = [-1.79; -0.65], β = -0.26, $p < .001$; Scale 2: B = -1.39, $SE\ B = 0.25$, BCa 95% CI = [-1.88; -0.94], β = -0.31, $p < .001$). For both cheating scales, this strong negative association remained robust even when controlling for learning goals in Model 2 (Scale 1: B = -1.09, $SE\ B = 0.28$, BCa 95% CI = [-1.66; -0.52], $p < .001$; B = -1.23, $SE\ B = 0.24$, BCa 95% CI = [-1.71; -0.79], β = -0.28, $p < .001$). For both cheating scales, none of the additional inserted learning goals proved to be a significant predictor with only one exception. When analyzing the cheating scale of Anderman and Won (2017), the work avoidance goal showed a small significant effect on academic cheating, $B = 0.17$, $SE\ B = 0.08$, BCa 95% CI = [0.01; 0.33], β = 0.12, $p = .043$. A more detailed report of the preregistered regression analyses with both scales individually can be found in the Supplemental Material.

4 Discussion

The present study examined the predictive value of Honesty-Humility and learning goals on self-reported cheating behavior of university students. In line with our assumption, we found Honesty-Humility to significantly predict cheating behav-

ior; students lower in Honesty-Humility reported increased academic cheating. The association between Honesty-Humility and academic cheating can be interpreted as an intermediate-sized effect, and it was highly significant. The predictive value of Honesty-Humility remained significant, even when controlling this association for the learning goals learning approach, task approach, task avoidance and work avoidance. Thus, Honesty-Humility appeared to be an important and reliable predictor of academic cheating behavior. This finding is in line with recent research. O'Connor et al. (2021) have also found that as Honesty-Humility scores increase, cheating behavior decreases. Similar conclusions about the importance of Honesty-Humility and its facets in academic dishonesty were drawn by De Vries et al. (2011) and by Van Rensburg et al, (2018).

Regarding the different learning goals, only the learning goal of work avoidance revealed a predicted value that goes beyond the Honesty-Humility factor. We included this specific goal because previous research has shown an association between work avoidance and academic cheating (Pavlin-Bernardić et al., 2017). University students often explain their cheating behavior, even though they know it is wrong, with time pressure and a high workload (Anderman et al., 1998; McCabe et al., 2001; Newstead et al., 1996). Therefore, it seems reasonable to assume that cheating behavior might occur to cut the workload and avoid additional work. However, the found relationship should not be overinterpreted because the found effect can only be interpreted as small; additionally, the confidence interval for this positive association was close to zero. This is further supported by our regression analyses in which we analyzed (as preregistered) the predictive value of Honesty-Humility and learning goals on both cheating scales separately. Here, the positive association between work avoidance and cheating under control of Honesty-Humility was only found regarding one of the two scales. Moreover, and contrary to our prediction, the correlation analysis revealed a significant *positive* association between task avoidance and academic cheating; however, this is in line with recent findings of Janke et al., (2019). Importantly, in none of the conducted regression analyses, task avoidance proved to be a significant predictor when controlling the association for Honesty-Humility. These results strengthen our assumption that the learning goal orientation does not contribute to explaining why some students cheat and others do not, but that Honesty-Humility is the important predictor for these differences.

An alternative approach that may explain the lack of incremental validity of learning goals could be a possible interaction between Honesty-Humility and the learning goal orientation. In one study, Daumiller and Janke (2020) have demonstrated that neither the investigated learning goal nor perceived social norms alone predict cheating, but that the interaction between both variables has a significant effect. The same was demonstrated for the performance goals and performance evaluation (Daumiller & Janke, 2019). In alignment with these findings, Jordan (2001) has found an interaction between motivational variables and different school subjects that predicted cheating. This indicates that an interaction between Honesty-Humility and the learning goal orientation might be considered as an explanation of the mixed and sometimes divergent findings. However, since testing for interactions requires higher sample sizes (Blake & Gangestad, 2020), we refrained from testing a potential interaction between learning goals and Honesty-Humility in our study, but definitely view

this as an interesting approach for future research. Anderman and Murdock (2007) have demonstrated that several motivational variables influence the decision to cheat or not to cheat. The authors stated that next to the learning goal orientation, the students' beliefs and expectations about their own abilities are important, along with the perceived risk of getting caught. Thus, many more variables need to be included to find a model that can fully explain academic cheating.

4.1 Limitations

The present study is the first attempt to examine Honesty-Humility and learning goals on its incremental value for academic cheating. This study poses several limitations that need to be considered when interpreting our results. First, we assumed a power of 80% when determining our minimum sample size based on the association between learning goals and academic cheating. This was only a rough guide, as ours was the first study to examine the listed variables in this constellation, and we had no opportunity to rely on previous research for correct estimates for the power analysis that fit with our study design.

Another limitation of this study is that we used self-reporting measures for all constructs. Different methods to assess cheating behavior might yield more accurate results, as Steger et al. (2020) have proposed. Cheating is an unacceptable behavior, which is often followed by a penalty if disclosed. We can assume that honesty about students' own cheating behavior is a challenge for most people. Even if the research is carried out for scientific reasons and despite the declaration of anonymity, many students were probably afraid of the consequences of being honest or perhaps also ashamed about their current or past cheating behavior.

Additionally, in the light of the still ongoing Corona pandemic in which online classes are the prevailing method of instruction, certain areas of online cheating were perhaps not directly considered due to selected cheating scales that are designed to measure academic cheating in in-person classes. However, even if some of those "new" online cheating behaviors during online exams (like, for example, searching the internet during a final exam or working on an online exam with several people in the same room without permission) are not explicitly asked, they are covered by the used items.

Finally, we want to mention that although our sample consisted exclusively of (German) students, it is not representative of the field of studies. For example, in our sample, more than half of the participants classified themselves as law, economic, and/or social scientists; this proportion is about five times higher than the proportion among all German students in general. Further, with 76.8% of participants who indicated themselves as female, this proportion is also higher than among German students in general, who have a relatively balanced gender ratio (Statistisches Bundesamt, 2022). In this vein, it could also be beneficial to test different populations against each other (with appropriate academic cheating scales), such as different age groups or students from different study programs. Despite these limitations, the present study poses a good first for future research.

4.2 Implications and future research

The present study contributes to the current state of research by revealing that the association between learning goals and academic cheating, which has been well established in previous research in this field, did not withstand testing against the effect of Honesty-Humility. Honesty-Humility might influence social norms, the attitude toward cheating, or the students' estimation of their own abilities. It may be useful for future studies in this field to additionally check for interactions and/or to control more established effects for students' Honesty-Humility.

To increase the generalizability of our findings, future research should rely on different methods when examining academic cheating. Different assessment methods might reveal different results and help expand our knowledge of academic cheating. Furthermore, students' learning goal orientation can be manipulated via a goal induction (Daumiller & Janke, 2019, 2020) or can be measured via vignette methods (Rettinger & Kramer, 2009; Rettinger et al., 2004). Further,longitudinal studies would be needed to explain the causality behind the examined relationships.

Our study has shown a small effect of the work avoidance goal on academic cheating, but none of the learning goals from the trichotomous goal structure yielded effects. Even if we first basically advised replication of the positive association between work avoidance and academic cheating before giving it too much meaning, this first finding may indicate the importance of further investigation of the learning goals that are less represented in previous research. Even though this study shows that the personal learning goals do not contribute to the explanation of academic cheating beyond the effect of Honesty-Humility, learning goals are important for other topics in the educational context. This study has not addressed the classroom or institutional goal structure. These different levels of goal orientation might influence cheating in other ways than the personal learning goals.

The practical implications of this study concern possible interventions against academic cheating and the identification of cheaters. Previous research has demonstrated there are various ways for educators and institutions to prevent cheating (Anderman et al., 1998; Anderman & Koenka, 2017; McCabe et al., 2001; Stephens, 2008). By identifying which variables have the strongest effects on academic cheating, prevention strategies can be implemented more accurately and can help preserve academic integrity. These adaptions in intervention become even more important in academic cheating in online classes and the new challenges that result from increasing online education. Online education has become increasingly popular and has also become part of daily life for most students due to the COVID-19 pandemic. Because of these developments, research on e-cheating has become urgent. The results of this study and our suggestions for future research could be useful for this research.

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Statements and declarations

Conflicts of interest The authors have no relevant financial or non-financial interests to disclose.

Ethics approval This study was performed in line with the principles of the Declaration of Helsinki.

Consent to participate Informed consent was obtained from all individual participants included in the study.

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Appendix C

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Is peoples' belief in a just world associated with (dis)honesty in romantic relationships?

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ABSTRACT

We hypothesized that people's personal belief in a just world (PBJW) is associated with decreased relationship-based dishonesty. We tested our hypothesis in 11 studies using community samples and different methodological approaches. One internal meta-analysis across all 11 studies (total $N = 4970$) yielded a negative but non-significant overall effect (Fisher's $z = -0.07$), thus providing no support for our hypothesis. A more detailed look revealed that studies measuring estimated levels of partner's dishonesty yielded significantly stronger negative associations to people's PBJW compared to studies that measured dishonesty emanated by oneself. We discuss what the results mean for research on belief in a just world and derive new approaches for future research in this field.

1. Introduction

The belief in a just world describes the human credo that good things happen to good people, and bad things happen to bad people (Lerner, 1965, 1980). Considering that honesty is presumably one of the most important values, not only in people's lives in general (e.g., Geißler et al., 2013) but also in a person's mate's life satisfaction (Weber & Ruch, 2012), those who believe strongly in a just world should show less dishonesty in their romantic relationships. Deception is, however, extremely common in social interactions (e.g., DePaulo et al., 1996; Turner et al., 1975), and romantic partners lie to each other almost daily (e.g., Cole, 2001; Guthrie & Kunkel, 2013). A common definition of deception stems from DePaulo and Kashy (1998), who define lying as the attempt to intentionally mislead someone. In the present study, we focus on the attempt to intentionally mislead the romantic partner.

Even if past research has already addressed the question of individual differences in predicting dishonesty within romantic relationships (e.g., Reinhardt & Reinhard, 2023), only a few studies specifically target the correlation between people's belief in a just world and dishonesty (e.g., Donat et al., 2014; Schindler et al., 2019; Wenzel et al., 2017); however, no study references romantic relationships. To the best of our knowledge, no work thus far has focused on the more specific field of lying in romantic relationships and its association with people's belief in a just world.

1.1. Belief in a just world

Following *just world hypothesis*, first specified by Lerner and Simmons (1966), people believe in a just world in which they get what they deserve and deserve what they get. The justice motive originates during childhood when children learn to control fulfilment of their gratification according to how to accrue rewards and avoid punishment in the long run. Due to this norm-compliant behavior, children develop a *personal contract* with the world as well as the expectation that continued norm-compliance should lead to further rewards. In doing so, people experience their environment as orderly and stable (Lerner, 1965, 1980). How strongly children commit to their personal contracts also depends on parenting quality; for example, one study found that adolescents who evaluate their parents as more nurturing developed a stronger BJW (Dalbert & Radant, 2004). Another study also found maternal and paternal warmth to be positively associated with people's BJW (Umemura & Šerek, 2016). These studies suggest that there may be an association between BJW and people's attachment style, which is defined as a stable mental pattern an individual has formed on early attachment history (Bowlby, 1982; see also Çolak et al., 2021).

Given this fundamental need to have control over one's own life, the belief in a just world serves important adaptive functions, which in turn lead people to protect their belief in a just world when it is threatened. In

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this vein, classical experimental research on just world theory has shown that in reaction to a perceived injustice, for example, a confrontation with an innocent victim, the subsequent behavior is meant to re-establish the perceived justice and ranges from helping to compensating, or if both prove impossible, to derogating, blaming, or rejecting the victim (Furnham, 2003; Lerner & Simmons, 1966; for a review see Hafer & Bègue, 2005).

Since the 1970s, researchers have focused more on the examination of individual differences in the belief in a just world (e.g., Dalbert & Donat, 2015). The most widespread and well-examined self-report instrument to measure dispositional belief in a just world (BJW) stems from Dalbert (1999), differentiating between the *personal belief in a just world* (PBJW), which concerns the belief that oneself will be treated fairly, and the *general belief in a just world* (GBJW), which describes the human tendency to think that the world is a just place in general. The two constructs are typically correlated but still represent two different facets of one's BJW. Because of their different modes of action, past research has clearly recommended a differentiated investigation of BJW (e.g., Bartholomaeus & Strelan, 2019; Dalbert, 1999; Lipkus et al., 1996; Sutton & Winnard, 2007). Although the PBJW seems to be a better predictor for the personal benefits of the personal contract, like increased subjective well-being (e.g., Bègue, 2002; Dalbert, 1999), the GBJW is assumed to be linked to an increased desire to repair or minimize potential costs of the personal contract, for example, anticipated guilt and regret (Sutton & Winnard, 2007).

1.2. Belief in a just world and (dis)honesty in romantic relationships

According to just world hypothesis, people get what they deserve and deserve what they get (e.g., Lerner & Simmons, 1966). Within a romantic relationship, partners value low levels of dishonesty (e.g., Cole, 2001; DePaulo & Kashy, 1998; Guthrie & Kunkel, 2013; McLeod & Genereux, 2008). Hence, as a *good* romantic partner, one should be convinced of being deserving high levels of honesty; following just world logic, this should strengthen the commitment to be honest with one's partner in return.

1.2.1. Different perspectives of lying

Following the above line of reasoning, two different perspectives of lying must be considered: estimated levels of partner's relationship-based dishonesty (i.e., *partner's dishonesty*) and dishonesty emanated from oneself (i.e., *own dishonesty*). Although the specific link to romantic relationships is missing, past research provides evidence that for both perspectives, higher levels of BJW are linked to decreased dishonesty.

Regarding estimations of partner's dishonesty, for example, Zuckerman and Gerbasi (1977) presented first evidence of a positive association between BJW and trust, showing that participants high in BJW were less suspicious in different domains of daily life (i.e., experimental setting, promise of a gift, government's position on public issues). Lipkus and Bissonnette (1996) showed that people with a strong BJW were more trusting of their spouses, and in the same line, research by Bègue (2002) revealed a positive correlation between BJW and interpersonal trust. Note that these works used a unidimensional operationalization of the BJW construct. Regarding dishonesty emanated by oneself, there exists some evidence of a negative association with PBJW. Across two studies, Schindler et al. (2019) showed that PBJW significantly predicted own dishonest behavior in that people with a strong PBJW showed less dishonesty in a dice task (Study 1) and an anagram task (Study 2). In a broader sense, they based this finding on the increased importance of ethical behavior (i.e., being honest) for people high in their PBJW. In the same vein, Donat et al. (2014) found that students high in PBJW showed less self-reported cheating behavior in an academic context. Note that one study by Wenzel et al. (2017) showed a positive association between GBJW and own dishonest behavior in a coin-toss paradigm, aligning with past research that linked GBJW to a broad range of antisocial tendencies (e.g., Bègue & Muller, 2006; Hafer & Sutton, 2016; Sutton & Winnard, 2007).

1.2.2. Different types of lies

The studies on own dishonest behavior mentioned above all measured deception for a personal benefit, for example, cheating in a dice task for a monetary incentive (Schindler et al., 2019) or cheating in the academic context to receive better grades (Donat et al., 2014). Classically, this type of lie is labeled a so-called *self-oriented lie*. Self-oriented lies are defined as lies told to protect or enhance the liar's psychological well-being or a general interest, or lies told to elicit a desired emotional response. Deception research usually differentiates between a second type, the so-called *other-oriented lies*. Other-oriented lies are defined as lies told to protect or enhance other persons' psychological well-being or general interest; in this way, even though it is a lie, it can pose additional or fewer positive consequences for the lie receiver (DePaulo et al., 1996; Metts, 1989). However, despite the potential positive outcomes—especially of other-oriented lies—dishonesty in romantic relationships is usually condemned, at least when consciously evaluating the acceptance of lying (McLeod & Genereux, 2008).

In line with the reasoning that every kind of lie violates the openness and authenticity people value in their relationships (e.g., DePaulo & Kashy, 1998; DePaulo et al., 1996; see also Reinhardt & Reinhard, 2023), we argue that people higher in their PBJW should show a decreased frequency of both self-oriented lies and other-oriented lies.

1.3. The present research

As our main hypothesis, we predict a negative association between people's PBJW and the specific field of relationship-based dishonesty. Besides the positive relational outcomes due to low levels of dishonesty (e.g., Cole, 2001; DePaulo & Kashy, 1998; Williams, 2001), this underlying just-world logic makes relationship-relevant events seem predictable and thus satisfies the superordinate human need to experience the world as ordered and structured (Lerner, 1965, 1980). Because past research showed that people's PBJW, rather than GBJW, better predicts the personal benefits of the personal contract within a just world, we especially suppose an association between PBJW and decreased dishonesty in romantic relationships. We therefore believe that in addition to broadening the research on BJW through the novelty of the research question raised here, our work will contribute to a better understanding of the much-discussed differentiation of PBJW and GBJW.

Our main argument is that a *good* romantic partner should be convinced of being deserving of low levels of partner's dishonesty; this should strengthen the commitment to show low levels of own dishonesty in return. That said, we predict people's PBJW to be negatively linked to both deception perspectives (i.e., partner's and own relationship-based dishonesty). Moreover, because every type of lie can be considered a serious breach of the important norm of honesty, this negative association should prove valid for a broader, widespread understanding of relationship-based deception (i.e., other-oriented lies and self-oriented lies).

Our hypothesis is also consistent with the theoretical arguments of Cole (2001), who postulated potential explanations underlying deceptive behavior within romantic relationships. Cole based one explanation on the norm of reciprocity, meaning the adjustment of resources vis-à-vis the allocation of others' contributions. Thus, if dishonest behavior emanates from the partner, the other partner should respond in the same vein. We argue that this entire mechanism is more pronounced for people with a strong belief in a just world.

We tested our idea across 11 studies with different methodological approaches. Originally, we planned to separately report the outcomes for each single study. Based on anonymous reviews, however, here we report one internal meta-analysis (IMA) across all 11 studies, which is a valuable tool to estimate the mean and variance of an underlying population effect across a collection of different empirical studies that all

address the same research question. Notably, we included all studies of our unpublished series of studies, independent of whether they revealed significant or non-significant results (Gerlach et al., 2019).

Supplemental Material is available on the Open Science Framework (OSF; https://osf.io/bwzty/), which provides detailed descriptions of the sample characteristics of all 11 studies (see Section 1), supplemental analyses (see Section 2), and all research materials (see Section 3). Furthermore, the OSF includes raw data, analysis codes, and links to the preregistration protocols (if available) of all studies.

2. Methods

2.1. Study inclusion

We included all relevant studies from our file drawer that fulfilled the following criteria: (a) studies had to include a separate measurement of people's PBJW and GBJW; (b) studies had to include a measurement of relationship-based dishonesty; and (c) the samples consisted of participants who all confirmed to be living in a romantic relationship at the time of questioning.

This resulted in the inclusion of five studies based on several closed-ended self-report scales (Studies 1 to 5), three studies that applied a scenario-based approach (Studies 6 to 8), two studies in which participants were asked to estimate their frequency of lies via one open-ended question (Studies 9 and 10), and one online experiment in which we manipulated just world threat and then measured actual dishonest behavior (Study 11).

2.2. Study procedures and measures

The underlying procedure of all 11 studies was comparable. First, participants confirmed participation requirements (i.e., resident of the USA, over 18 years old, and currently in a romantic relationship). If they did not agree, the studies ended prematurely. Because Study 1 originally stemmed from research on Terror Management Theory (cf., Greenberg et al., 1986), participants were randomly assigned to a mortality salience (MS) vs. control condition.[1] In each study, we assessed participants' PBJW and GBJW by using the scales of Dalbert (1999). Seven items (Study 1: $\alpha = 0.88$; Study 2: $\alpha = 0.90$; Study 3: $\alpha = 0.90$; Study 4: $\alpha = 0.92$; Study 5: $\alpha = 0.84$; Study 6: $\alpha = 0.86$; Study 7: $\alpha = 0.89$; Study 8: $\alpha = 0.89$; Study 9: $\alpha = 0.88$; Study 10: $\alpha = 0.88$; Study 11: $\alpha = 0.87$) measured participants' PBJW (e.g., "I believe that, by and large, I deserve what happens to me."), and six items (Study 1: $\alpha = 0.87$; Study 2: $\alpha = 0.89$; Study 3: $\alpha = 0.86$; Study 4: $\alpha = 0.90$; Study 5: $\alpha = 0.76$; Study 6: $\alpha = 0.87$; Study 7: $\alpha = 0.87$; Study 8: $\alpha = 0.80$; Study 9: $\alpha = 0.87$; Study 10: $\alpha = 0.88$; Study 11: $\alpha = 0.87$) measured participants' GBJW (e.g., "I think basically the world is a just place."). Participants responded to all items on their PBJW and GBJW on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*).

In each case, the measurement of relationship-based dishonesty took place next using different methodological approaches like closed-ended self-report scales, scenarios, open frequency measures, and the measurement of actual deceptive behavior regarding the romantic partner. Only Study 11 deviated from the standard procedures: Because past research revealed that just-world threats promote behavior that helps re-establish perceived justice, we included a just-world threat manipulation (JWT) before the deception measurement. To measure deception in Study 11, participants were asked if they are willing to forward a deceptive e-mail to their romantic partner in return for a financial reward; in doing so, we measured actual relationship-based dishonesty (see Study 9 in Reinhardt & Reinhard, 2023).[2]

Table 1 provides a detailed overview of the underlying measurements of relationship-based dishonesty for each study, including values for Cronbach's Alpha and sample items. Table 1 also shows how the dependent measures were operationalized (i.e., partner's dishonesty vs. own dishonesty; other-oriented lies vs. self-oriented lie). Links for all preregistration protocols (if available) can be found in the OSF.

Because past research revealed Honesty-Humility (emanated from the HEXACO model of personality) to be a key factor in predicting dishonesty, in Studies 4 and 5, we additionally measured Honesty-Humility as control variable with the ten relevant items (Study 4: $\alpha = 0.77$; Study 5: $\alpha = 0.67$) of HEXACO- PI-R created by Ashton and Lee (2009; e.g., "I would never accept a bribe, even if it were very large."). Participants responded to all items on their Honesty-Humility scores on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Finally, participants of all studies filled out demographic measures (i.e., age, gender, profession, ethnicity, relationship duration, and sexual preference), answered the attention and the bot checks, and were thanked for their participation.

2.3. Effect size extraction

As effect sizes, we calculated zero-order correlation coefficients between PBJW and the dependent measures of each study. For the final analysis, all correlation coefficients were converted to the Fisher's z scores (e.g., Borenstein et al., 2011). All coefficients were organized within an Excel spreadsheet, which is available on the OSF. The final number of included effect sizes was 19 (11 studies; $N = 4970$). To conduct a second IMA (following the same procedure) to check for a potential overall effect of people's GBJW on relationship-based dishonesty, we also calculated zero-order correlations between people's GBJW and the dependent measures of each study, which we then converted to Fisher's z scores.

2.4. Moderators

As potential moderator variables for their between-study influence on the found effect sizes, we analyzed different perspectives of lies (i.e., partner's dishonesty vs. own dishonesty) and different types of lies (i.e., self-oriented lies vs. other-oriented lies). The allocation to the categories can be found in Table 1.

3. Results

The total number of participants was $N = 4970$ (number of studies = 11, number of outcomes = 18). The IMA was conducted using the R package *robumeta* (Fisher et al., 2017), using a correlated effect model with weights adjusted for the dependency between effect sizes and small sample corrections.

Results yielded a negative effect, Fisher's $z = -0.07$, $SE = 0.04$, $p = .080$, 95% CI = [−0.16; 0.01], which is equal to a correlation coefficient of $r = -0.07$. Following Cohen (1988), the found effect size must be rated as small; however, because the confidence interval included zero, the overall effect for people's PBJW on relationship-based dishonesty is not significant. Following the same procedure, a second IMA was conducted with the zero-order correlation coefficients between

[1] We checked for potential MS-effects but found neither a significant main effect of MS on own dishonesty {$F(1, 585) = 1.46$, $p = .228$}, nor on partner's dishonesty {$F(1, 585) = 1.46$; $p = .228$} in Study 1. We also checked for potential interactions but found neither a significant interaction between MS and PBJW on own dishonesty {$B = 0.02$, $SE\ B = 0.12$, $p = .878$, 95% CI = [−0.21; 0.25]}, nor between MS and PBJW on partner's dishonesty {$B = -0.06$, $SE\ B = 0.13$, $p = .659$, 95% CI = [−0.32; 0.20]}.

[2] We checked for potential JWT-effects in Study 11 but found neither a significant main effect of JWT on actual relationship-based dishonesty {$B = 0.03$, $SE\ B = 0.65$, Exp(B) = 1.03, $p = .966$, 95% CI = [0.29; 3.65]}, nor a significant interaction between JWT and PBJW on actual relationship-based dishonesty {$B = -0.001$, $SE\ B = 0.15$, Exp(B) = 1.00, $p = .994$, 95% CI = [0.75; 1.33]}.

Table 1
Overview of all 11 Studies Including Relevant Information on the Underlying Methods and Their Results.

Study	Sample	Method	Prereg	Sample item	Dependent Variable	Effect size (*r*) of PBJW	Incremental effect over PBJW		
							GBJW	Gender	H-H
1	MTurk $N = 587$	Self-report scales created by Cole (2001)	Yes	There are certain issues that I try to conceal from my partner.	Own dishonesty 8 items; α = 0.87	−0.11** [−0.19; −0.03]	Yes (−0.09)	Yes (0.15)	–
				"I think that my partner tries to mislead me."	Partner's dishonesty 8 items; α = 0.82	−0.18*** [−0.25; −0.10]	No	Yes (0.10)	–
2	MTurk $N = 350$	Self-report scales created by Ennis et al. (2008)	Yes	"How often do you lie to your romantic partner to obtain information for your own benefit?"	Other-oriented lies 6 items; α = 0.95	−0.05 [−0.16; 0.05]	Yes (0.13)	Yes (0.11)	–
				"How often do you lie to others to protect your romantic partner from embarrassment?"	Self-oriented lies 6 items; α = 0.93	−0.02 [−0.13; 0.08]	Yes (0.23)	No	–
3	MTurk $N = 324$	Self-report scales created by Ennis et al. (2008)	No	See Study 1	Other-oriented lies 6 items; α = 0.92	−0.09 [−0.19; 0.02]	No	No	–
					Self-oriented lies 6 items; α = 0.94	−0.06 [−0.17; 0.05]	No	No	–
4	MTurk $N = 334$	Self-report scales created by Cole (2001)	Yes	See Study 1	Own dishonesty 8 items; α = 0.91	−0.14* [−0.24; −0.03]	No	No	Yes (−0.42)
					Partner's dishonesty 8 items; α = 0.89	−0.28*** [−0.37; −0.17]	No	No	Yes (−0.18)
		Self-report scales created by Ennis et al. (2008)		See Study 1	Other-oriented lies 6 items; α = 0.94	−0.14* [−0.24; −0.03]	No	No	Yes (−0.32)
					Self-oriented lies 6 items; α = 0.95	−0.07 [−0.18; 0.03]	No	Yes (0.13)	Yes (−0.46)
5	Event for freshmen $N = 71$	Self-report scale created by Kaplar (2006)	No	"I believe that it is better to tell my romantic partner a little white lie rather than risk hurting him or her by telling the truth."	Other-oriented lies 6 items; α = 0.81	−0.25* [−0.45; −0.01]	No	No	Yes (−0.34)
		Adapted version of the self-report scale created by Kaplar (2006)		"I believe that it is better to tell my romantic partner a little white lie rather than risk hurting my feelings."	Self-oriented lies 6 items; α = 0.80	−0.22 [−0.43; 0.02]	No	No	Yes (−0.39)
6	MTurk $N = 380$	Scenarios created by McLeod and Genereux (2008)	Yes	"How acceptable was it for […] in the scenario to lie?"	Own dishonesty 8 items; α = 0.87	0.20*** [0.10; 0.29]	Yes (0.30)	Yes (0.13)	–
				"How likely is it that you would have lied if you were […]?					
7	MTurk $N = 486$	Scenarios created by McLeod and Genereux (2008)	Yes	See Study 6	Own dishonesty 8 items; α = 0.84	−0.01 [−0.10; 0.08]	Yes (0.17)	Yes (0.10)	–
8	Facebook $N = 322$	Scenarios created by Peterson (1996)	No	"How often have you made this type of statement to your partner?"	Own dishonesty 6 items; α = 0.73	−0.29*** [−0.39; −0.19]	No	No	–
				"In your opinion, how often has your partner made this type of statement to you?"	Partner's dishonesty 6 items; α = 0.77	−0.23*** [−0.33; −0.12]	No	No	–
9	MTurk $N = 518$	Open question	Yes	"In the last week, how many times have you lied?"	Own dishonesty	−0.03 [a] [−0.12; 0.06]	No	No	–
10	MTurk $N = 522$	Open question	Yes	See Study 9	Own dishonesty	0.05 [a] [−0.04; 0.14]	No	Yes (0.09)	–

(*continued on next page*)

Table 1 (*continued*)

Study	Sample	Method	Prereg	Sample item	Dependent Variable	Effect size (*r*) of PBJW	Incremental effect over PBJW		
							GBJW	Gender	H-H
11	MTurk $N = 1076$	Actual deception	Yes	Participants were asked if they want to forward a deceptive e-mail to their romantic partners (0 = no, 1 = yes).	Own dishonesty	−0.11*** [−0.17; −0.05]	Yes (−0.18)	No	–

Notes. Prereg = preregistration; PBJW = personal belief in a just world; GBJW = general belief in a just world; Gender = participants' gender (0 = female, 1 = male); H-H = Honesty-Humility. Values in brackets are 95% confidence intervals. Values in parentheses are the partial correlation coefficients indicating the incremental value GBJW/Gender/H-H adds to the explained variance of the dependent variable in a shared regression model including all control variables measured in the specific study.

[a]Because of the right-skewed distribution, we calculated Spearman's rank-order correlations for correlation coefficients involving these variables instead of Pearson's correlation coefficients.

*p <.05, two-tailed. **p <.01, two-tailed. ***p <.001, two-tailed.

GBJW and the dependent measures. Results yielded a positive but non-significant effect, Fisher's $z = 0.03$, $SE = 0.05$, $p = .559$, 95% CI = [−0.08; 0.14], which is equal to a correlation coefficient of $r = 0.03$.

Fig. 1 shows the forest plot for the effects between PBJW and all measures for relationship-based dishonesty across all 11 studies as well as the summary effect. As the forest plot makes clear, confidence intervals around each study are relatively narrow so that these studies, with their widely dispersed effects (visually) cannot share the same true effect. The value for $\tau^2 = 0.01$ indicates that 95% of the true effects fall into a range between $z = -0.17$ and $z = 0.03$ (e.g., Borenstein et al., 2011). The value for $I^2 = 82.70\%$, which is considered high (Higgins et al., 2003), indicates that most of the observed variation in effect sizes is real.

3.1. Moderator analysis

To check whether this relatively wide variation in effect sizes can be explained by the potential moderators we have identified, we conducted two subgroup analyses to test if different perspectives of lying (i.e., partner's dishonesty vs. own dishonesty) and different types of lies (i.e., self-oriented lies vs. other-oriented lies) affect the found effect size.

Comparing the found associations between PBJW and partner's dishonesty ($N = 1243$; number of studies = 3; number of outcomes = 3; Fisher's $z = -0.22$) with the found associations between PBJW and own dishonesty ($N = 4225$; number of studies = 8; number of outcomes = 8; Fisher's $z = -0.06$) revealed a significant difference, *Fisher's* $z = 0.19$, $SE = 0.09$, $p = .046$, 95% CI = [0.01; 0.38].

Comparing the found associations between PBJW and self-oriented lies ($N = 1413$; number of studies = 4; number of outcomes = 4; Fisher's $z = -0.06$) with the found associations between PBJW and other-oriented lies ($N = 1413$; number of studies = 4; number of outcomes = 4; *Fisher's* $z = -0.10$) did not yield a significant difference, Fisher's $z = -0.04$, $SE = 0.01$, $p = .062$, 95% CI = [−0.09; 0.004].

3.2. Supplementary analyses

Based on the theoretical deviation of our main hypothesis, one can additionally deduce that PBJW should positively moderate the association between own and partner's dishonesty. Therefore, even though it was not preregistered, we tested for this potential moderation in all studies in which we measured both own and partner's dishonesty (i.e., Studies 1, 4, and 8). In each case, we applied Model 1 of the Process macro of Hayes (2013), using partner's dishonesty as predictor variable, PBJW as the moderator, and own dishonesty as the dependent variable.

In Studies 1 and 4, partner's dishonesty did not significantly predict own dishonesty (Study 1: $B = 0.22$, $SE\ B = 0.11$, $p = .054$, 95% CI = [−0.003; 0.45]; Study 4: $B = -0.02$, $SE\ B = 0.15$, $p = .888$, 95% CI = [−0.32; 0.28]), but people's PBJW significantly predicted own dishonesty in both studies (Study 1: $B = -0.22$, $SE\ B = 0.09$, $p = .013$, 95% CI = [−0.40; −0.05]; Study 4: $B = -0.32$, $SE\ B = 0.12$, $p = .009$, 95% CI = [−0.55; −0.08]). Both studies also revealed a significant interaction between partner's dishonesty and PBJW on own dishonesty (Study 1: $B = 0.08$, $SE\ B = 0.03$, $p = .004$, 95% CI = [0.02; 0.13]; Study 4: $B = 0.11$, $SE\ B = 0.03$, $p = .002$, 95% CI = [0.04; 0.18]). In Study 8, partner's dishonesty significantly predicted own dishonesty ($B = 1.07$, $SE\ B = 0.20$, $p < .001$, 95% CI = [0.68; 1.45]), but there was no significant effect of PBJW on own dishonesty ($B = 0.10$, $SE\ B = 0.10$, $p = .308$, 95% CI = [−0.09; 0.29]). However, Study 8 revealed a significant interaction between partner's dishonesty and PBJW on own dishonesty ($B = -0.11$, $SE\ B = 0.05$, $p = .020$, 95% CI = [−0.19; −0.02]).

4. General discussion

In this work, we examined the role of dispositional BJW on dishonesty in romantic relationships. We predicted that people's PBJW is negatively linked to relationship-based dishonesty, testing for a broad understanding of dishonesty like different perspectives of lying (i.e., own and partner's dishonesty) and different types of lies (i.e., other-oriented and self-oriented lies). This prediction was built on the underlying assumption that as a *good* romantic partner—and given that romantic partners value low levels of dishonesty (e.g., Cole, 2001; DePaulo & Kashy, 1998; Guthrie & Kunkel, 2013; McLeod & Genereux, 2008)—one is convinced to be deserving low levels of dishonesty. Following just world logic, which in essence says that people get what they deserve and deserve what they get (e.g., Lerner & Simmons, 1966), this should strengthen the commitment of an individual to be honest. Because PBJW by definition is concerned with how the self is treated (Dalbert, 1999), we only assumed an association between PBJW and relationship-based dishonesty rather than between GBJW and relationship-based dishonesty.

In sum, we conducted 11 (mostly) preregistered studies with different methodological approaches (i.e., closed-ended self-report scales, scenarios, open frequency measures, actual relationship-based dishonesty) and then performed one IMA to calculate the overall effect of PBJW on relationship-based dishonesty across studies. Results yielded a negative but non-significant effect, thus revealing no support for our main hypothesis. At this point, we want to emphasize the importance of this IMA. Notably, the studies in our IMA are free of *p*-hacking, and it includes all valid studies by the authors. No further studies were conducted, so our IMA can be regarded as highly informative and thus underlines the final interpretation of our reported results. Because we are convinced that our hypothesis is strongly founded in theory, we did not expect this non-significant effect.

There seems to be one theoretically grounded aspect that may

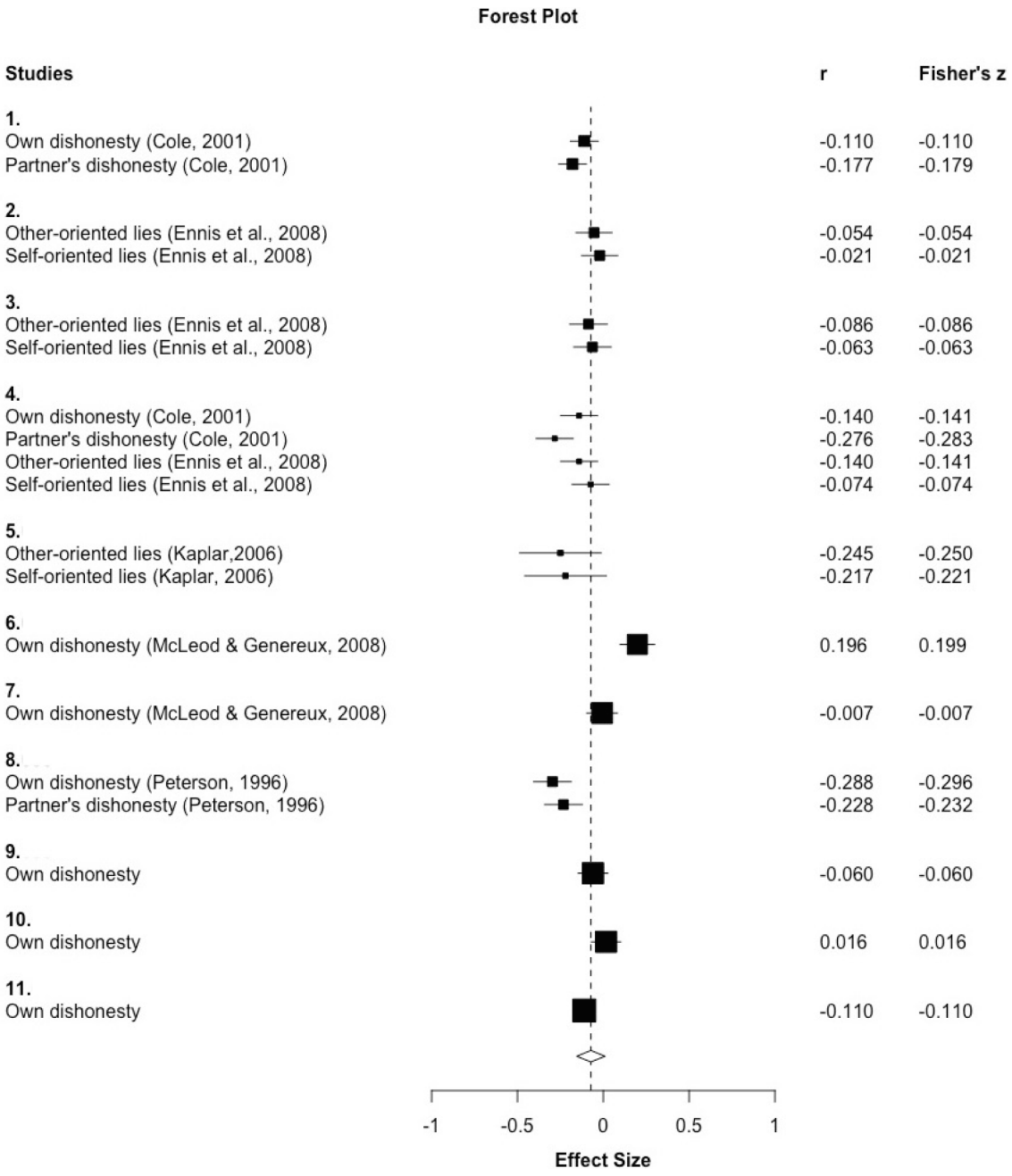

Fig. 1. Forest Plot for the Effects Between PBJW and all Measures for Relationship-Based Dishonesty and Summary Effect. Note. Please note that the line in the figure is the line of the average effect.

explain the overall small (and non-significant) effect size. The just-world logic works even if own actions and following consequences are dissimilar. As mentioned, our prediction was built on the underlying assumption that as a *good* and honest romantic partner, one should be convinced of deserving high levels of honesty, too. However, it could also be that as a good and honest partner, one is convinced of deserving a bouquet every day, and just world logic would still work. Given this theoretical consideration, that is, that rewards and/or punishments people think they deserve as a consequence of their own behavior can prove arbitrary, being honest is only one of many behaviors romantic partners can show to preserve their just world belief. Assuming that further coping strategies were applied during the study preparation (for an overview, see Hafer & Bègue, 2005), the direct effects on self-reported (dis)honesty measures probably were mitigated. This is a purely speculative explanation, but if it is true, it is a great challenge for (correlative) just world research because single studies can only focus on certain aspects; it is impossible to measure all conceivable coping strategies (cognitive and behavioral) that people perform to maintain/to strengthen their need to believe in a just world, especially when these strategies are not directly related to the behavior of interest measured in a single study.

In pursuit of a more detailed investigation of our main hypothesis, we also checked for the influence of potential moderator variables. Specifically, we conducted two subgroup analyses and tested if different perspectives of lying (i.e., partner's dishonesty vs. own dishonesty) and different types of lies (i.e., self-oriented lies vs. other-oriented lies) affect the found effect size. Although there was no significant difference in the effect sizes for different types of lies, we found that the negative association between people's PBJW and partner's dishonesty (i.e., estimated levels of partner's relationship-based dishonesty) was significantly

stronger compared with the association between PBJW and own dishonesty (i.e., relationship-based dishonesty emanated by oneself). Theoretically, we have assumed a closed cycle, wherein both perspectives of lying should have the same significance: As a good and therefore honest partner, one in turn deserves low levels of dishonesty, and if one's romantic partner is honest, this strengthens that individual's commitment to be honest in return, and so on. Even our subgroup analyses must be interpreted with caution because of a potential power problem: they provide first evidence that PBJW more strongly influences the perception of partner's deceptive behavior rather than influencing own (self-reported) behavior. This finding supports previous research highlighting people's BJW as a cognitive resource that supports coping with injustice in romantic relationships (Lipkus & Bissonnette, 1996) and speaks against our assumption that people's PBJW is a valid predictor for actual deceptive behavior in romantic relationships.

Based on the process of reciprocity, meaning the adjustment of resources vis-à-vis the allocation of others' contributions, our supplemental moderation analyses revealed that participants who estimate lower levels of their partner's dishonesty report decreased own dishonesty, especially when they have a strong PBJW (only in Studies 1 and 4). This is in line with past research that showed that people higher in PBJW are more likely to reciprocate (e.g., Edlund et al., 2007), and in our current research, we transferred this moderation effect of PBJW to the context of dishonesty in romantic relationships.

Regarding the association between GBJW and relationship-based dishonesty, the single studies have revealed different—even partially contradicting—results. As is apparent in Table 1, some studies revealed that people's GBJW adds an incremental value to the explained variance of the specific deception measure; in some cases, however, GBJW positively predicted relationship-based dishonesty, and in others, there was a negative association. Thus, there exists little evidence to help establish the prevalent character GBJW plays in predicting relationship-based dishonesty. The most valuable insight about the role of GBJW in predicting relationship-based dishonesty comes from our second IMA, which was conducted with the zero-order correlation coefficients between GBJW and all dishonesty measures; this IMA also yielded no significant effect.

Table 1 provides further insights into the potential influence of participants' gender and Honesty-Humility scores on relationship-based dishonesty. In research on deception in romantic relationships, there exists an ongoing debate about the role of gender. A recent meta-analysis pointed out that gender plays a role in predicting dishonesty in that men behave more dishonestly than women (Gerlach et al., 2019), but other studies revealed exactly the opposite (DePaulo et al., 1996), and finally, certain studies revealed no significant gender difference at all in the frequency of lying (Serota et al., 2010). The results of our work regarding gender differences in relationship-based dishonesty are ambiguous, too. As is apparent in Table 1, a few studies revealed significant gender differences (under control of people's PBJW and GBJW) in that men reported higher levels of relationship-based dishonesty compared with women, but most studies did not. Concerning research that further revealed no meaningful gender differences regarding people's BJW (O'Connor et al., 1996), we view the role of gender in the current research question as negligible. However, the role of Honesty-Humility (a personality trait emanated from the HEXACO model of personality; Lee & Ashton, 2004) seems to have more significance in this context. Recently, Reinhardt and Reinhard (2023) showed Honesty-Humility to be a key predictor for relationship-based dishonesty, with people higher in Honesty-Humility showing decreased relationship-based dishonesty. Table 1 also shows that Honesty-Humility reliably predicted relationship-based deception even when controlling for participants' PBJW, GBJW, and gender. Consequently, the uniqueness of PBJW in predicting relationship-based dishonesty is in question, as other personality traits, like the Honesty-Humility trait, seem to more reliably contribute to the explained variance of relationship-based dishonesty.

4.1. Limitations and directions for future research

As discussed by Bartholomaeus and Strelan (2019), we refrained from relying on student samples to investigate our idea and instead tested our hypotheses on community samples, with different ages as well as existing romantic relationships of varying lengths (see Section 1 in the Supplemental Material). Although we wanted to have as diverse convenience samples as possible, in all studies, most of the participants were White. This means that representativeness regarding different ethnic groups is not given. Future research could therefore investigate our research question with different ethnic groups.

Most studies reported in this main manuscript were conducted via Amazon Mechanical Turk (MTurk). Because it can be assumed that MTurk is used by professional survey takers who earn money with it daily, MTurk users are perhaps motivated to complete many studies in a short time and thus show a lack of attention. Importantly, we included several response quality screening techniques (i.e., attention checks, bot checks) to confirm overall data quality (e.g., Arias et al., 2020).

We clearly recommend testing for potential moderator and/or mediator variables. An increasing number of past studies have done so because such testing imparts valuable insights about the underlying processes and how and why the PBJW functions in a specific way (for a review, see Bartholomaeus & Strelan, 2019). Given our first results in the field of BJW and deception in close relationships, these preliminary findings could be an interesting starting point. For example, assuming that people high in their PBJW are more likely to put extensive trust in others (see also Zuckerman & Gerbasi, 1977), one might expect that trust could moderate the association between people's PBJW and relationship-based dishonesty in the way that people high in their PBJW show decreased relationship-based dishonesty, especially when they hold high levels of trust. One could also speculate that people with a higher sense of control (see also Strelan & Callisto, 2020) and higher levels of optimism (see also Wilson & Darke, 2012) should show a stronger association between PBJW and deceptive behavior in close relationships. Possibly, the systematic consideration of those moderator/mediator variables is necessary to observe the predicted and theoretically founded association between PBJW and relationship-based dishonesty.

At this point, again, reference should be made to attachment theory (Bowlby, 1982). We have already mentioned that parental care was found to be associated with a stronger BJW (Dalbert & Radant, 2004; Umemura & Šerek, 2016), suggesting that attachment styles could also be influential moderators/mediators in the relationship between PBJW and relationship-based dishonesty (see also Li et al., 2022). Interestingly, past research supports this notion because initial evidence suggests significant associations between attachment (in)security and lying towards the romantic partner. More concrete, Ennis et al. (2008) found avoidantly attached individuals (i.e., individuals who experience discomfort with intimacy), but not anxiously attached individuals (i.e., individuals who experience fear of abandonment), to lie more frequent within their romantic relationships (see also Cole, 2001). However, Gillath et al. (2010) found both insecure attachment styles (i.e., avoidant and anxious attachment) to be positively related to relationship-based dishonesty. An underlying explanation could be that avoidantly attached individuals use deception to maintain/increase distance and privacy to the romantic partner, and anxiously attached people use deception to maintain/increase their feeling of acceptance. In sum, it could be argued that people who developed a rather insecure attachment style are supposed to feel less bounded to their personal contract and consequently are more likely to lie within their romantic relationship (compared to individuals who developed a secure attachment style).

Finally, it should be said that in all 11 studies, we used the scales created by Dalbert (1999) for the measurement of people's PBJW. Although Dalbert (1999) considers the aspect of a personal contract (i.e., a closed belief system that says that the more individuals want to be

treated fairly by others, the more the individuals should feel obligated to behave fair themselves), apparently, it is only reflected in some of the items (e.g., "I believe that, by and large, I deserve what happens to me."; "I believe that I usually get what I deserve."), but most items prompt some kind of momentary snapshot of exactly how fairly people feel treated ("Overall, events in my life are just."; "I am usually treated fairly."). Because our central hypothesis was built mainly on the idea that people who felt strongly connected to their personal contract should show decreased relationship-based dishonesty, one could assume that the predicted association is more pronounced on items that directly address the personal contract. However, we found no support for this idea (see Section 2.1 in the Supplemental Material). Future research should consider other scales for the measurement of the personal belief in a just world, but importantly, the scale should be designed to separate the personal from the more general facet and should not measure just one overall construct.

5. Conclusion

Given the assumption that romantic partners value low levels of dishonesty and following just world logic—which entails that people get what they deserve and deserve what they get—we predicted that people's PBJW should be negatively linked to relationship-based dishonesty, thereby testing for a broad understanding of dishonesty. Contrary to what we first expected given the valid theoretical arguments, our IMA across 11 (mostly) preregistered studies with different methodological approaches revealed a negative but non-significant overall effect of people's PBJW on relationship-based dishonesty; moreover, no overall effect was seen for people's GBJW on relationship-based dishonesty. A more detailed look revealed that studies measuring partner's dishonesty (i.e., estimated levels of partner's relationship-based dishonesty) yielded significantly stronger negative associations to people's PBJW compared to studies that measured own dishonesty (i.e., dishonesty emanated by oneself). This finding leaves us to interpret PBJW as a cognitive resource that supports coping with injustice in romantic relationships (Lipkus & Bissonnette, 1996) rather than seeing PBJW as a valid predictor for actual deceptive behavior in romantic relationships.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

OSF link is available in the main manuscript

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jrp.2023.104396.

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