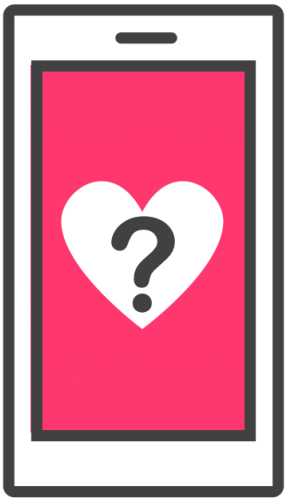
NUDGING HONESTY IN ONLINE DATING:

The effect of salient surveillance, descriptive norm, and explicit moral reminding on self-presentation accuracy in online dating profiles.



Master Thesis

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ABSTRACT

Purpose – The present study aimed at identifying techniques that may reduce deceptive behavior on online dating platforms and examined the influence of three types of honesty nudges (salient surveillance, descriptive norm, and explicit moral reminding) on self-presentation accuracy in online dating profiles. Furthermore, related mediating processes (perceived observability, descriptive normative beliefs, and moral salience), as well as possible moderators (online dating experience, involvement in online dating deception, and honesty-humility) were investigated.

Design/Methodology/Approach – Hypotheses testing was performed utilizing an experiment with a 2 (salient surveillance nudge: no vs. yes) x 2 (descriptive normative message: no vs. yes) x 2 (explicit moral reminder: no vs. yes) between-subjects design, in which potential online dating users (N = 308), after being exposed to the treatment, had to create a fictional online dating profile. Subsequently, accuracy per profile item was rated.

Findings – The results revealed that salient surveillance, descriptive norm, and explicit moral reminding did not have any significant influence on self-presentation accuracy in dating profiles. Moreover, no interaction effects between the three nudge types and no moderating influences of the three proposed moderators could be observed. Nevertheless, a direct positive relationship between moral salience and self-presentation accuracy was found.

Research limitations – Limitations of this study are related to the artificial setting in which the experiment took place. Moreover, the use of self-reported honesty measures and the extreme skewness observed in the data for self-presentation accuracy are further limitations of this research.

Theoretical relevance/implications – This research contributes to the growing body of literature that investigates honesty-enhancing cues and techniques. Furthermore, this study provides empirical evidence and interesting insights regarding the underlying mechanisms (perceived observability, descriptive normative beliefs, and moral salience) of the studied manipulations, which might be useful for future investigations.

Originality/value – Honesty nudges and other honesty enhancing techniques were never studied in the context of online dating, which emphasizes the relevance of this research. Furthermore, this study is one of the few that integrated measures for the underlying processes of dishonesty curbing manipulations into its research design.

Keywords
Online dating, norm nudges, surveillance nudges, honesty nudging, moral salience, dishonest self-presentation

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1. Introduction

Online dating has become very popular in recent years and the number of people who search for a romantic partner online instead of offline is increasing constantly. For instance, only in the US, the number of online dating users grew from 28.9 to 44.2 million between the years 2017 and 2020 and is expected to reach around 53.3 million by 2025 (Statista Research Department, 2021). Especially since the start of the COVID-19 pandemic in March 2020 and the introduction of social distancing measures, online dating services such as Tinder or Match.com observed a large increase in new subscribers and user activity (Dietzel, Myles & Duguay, 2021; Meisenzahl, 2020), as they turned into a means to compensate people's solitude and lack of social life with online interactions.

On online dating platforms, users create a personal profile and then browse through other users' profiles to find people they would like to connect and meet with. Despite the fact that the majority of users on such platforms prefer honest information, both from potential partners and in the way they present themselves (Warren, 2019), it is common practice for users to display wrong information in their profiles to seem more attractive and to increase their chances for dates and romantic relationships. For example, studies revealed that online dating users frequently lie about their weight and height (Hancock, Toma, & Ellison, 2007) or give wrong indications about their age, physical appearance (e.g., using an edited or outdated profile picture), income, occupation, relationship and/or family status (Whitty, 2008). Other attributes, people are often not honest about on their online dating profiles are related to their hobbies or smoking and drinking behavior (de Boer, 2018).

Deception in online dating can have different degrees of severity, going from small profile embellishments to "catfishing", which means that people create entire fictional online identities to trick someone into a romantic relationship or to gain monetary benefits (Simmons & Lee, 2020). Although some research suggests that lies in online dating are often small, and little discrepancies between one's online dating profile and offline presence, such as underestimating weight by a few pounds, are, to some extent, considered to be rather acceptable among online dating users (e.g., Ellison, Hancock, & Toma, 2011; Hancock et al., 2007), it is shown that perceptions of even very low levels of deceptive behavior already significantly diminish the likelihood of a relationship progressing after the first date (Sharabi & Caughlin, 2019). This emphasizes the importance of minimizing lying on online dating platforms, even when only small lies are used.

Research in behavioral science showed that certain interventions, so-called "nudges", are effective in steering people´s behavior without the necessity of making specific behavioral options mandatory (e.g., Sunstein, 2014). In various studies, such nudge interventions are also investigated regarding dishonesty and how they can be used to decrease deceptive behavior. Ayal, Gino, Barkan, and Ariely (2015), for instance, proposed a framework of three principles that are, according to the authors, a positive impact on an individual´s honesty: reminding, visibility, and self-engagement. Each of these three principles encompasses various nudging techniques that, in different contexts, proved to be effective in diminishing dishonest information disclosure (e.g., Shu, Mazar, Gino, Arely, & Bazerman, 2012). Hence, this study is a first attempt to investigate whether such interventions can be utilized to positively influence honest self-presentation on online dating platforms. More specifically, the objective of this research is to identify appropriate techniques that may be effective in nudging honesty in the context of online dating and to examine how three selected interventions, namely salient surveillance, descriptive norm, and explicit moral reminding, influence the accuracy of users' self-presentation on their online dating profiles. In summary, the focus lies therefore on the following main research question:

RQ1. To what extent do salient surveillance, descriptive norm, and explicit moral reminding increase self-presentation accuracy in online dating profiles?

To provide answers to this question, several steps are integrated into this study. First, in the literature review, after explaining shortly the three principles according to Ayal et al. (2015), it is discussed why of the many interventions within those three principles, salient surveillance, descriptive norm, and explicit moral reminding are, according to the author, most likely to be effective in modifying deceptive behavior on online dating mobile apps and websites. Subsequently, an experiment is conducted which aims at measuring the effect of the selected interventions on mediating processes and self-presentation accuracy in online dating profiles. Here, also interaction effects between the nudge types and moderating influences of certain personal factors are explored to allow for interpretation and a better understanding of each of the three honesty nudges' impact. Afterward, the outcomes of the experiment are presented, which is followed by a discussion of the results, recommendations for future research as well as theoretical and practical implications.

2. Theoretical framework

In the first part of the theoretical framework, a short overview of the honesty nudging literature is provided. Here, Ayal et al.`s (2015) dishonesty revising principles together with examples of honesty nudging techniques are presented. In the next step, the application of honesty nudges in the context of online dating as well as the selection of the three different nudge types investigated in this study is elaborated. Here, the manipulations' underlying mechanisms, perceived observability, descriptive normative beliefs, and moral salience and their expected influences are also explained. In the final subsections, the three moderator variables online dating experience, involvement in online dating deception, and honesty-humility, as well as their expected moderating effects are described.

2.1. Nudging honesty: A short overview

Various attempts are taken to investigate the determinants of dishonesty and to find ways to reduce deceptive behavior. In the literature, two streams can be distinguished, that focus on personal factors (e.g., certain personality traits such as narcissism) or situational factors, that try to explain the occurrence of dishonest behavior. Situational influences are hereby particularly interesting for behavior change research as they are generally easier to implement in practice than people´s personal characteristics (Schild, Heck, Ścigała, & Zettler, 2019).

Ayal et al. (2015) created a framework that summarizes various situational factors potentially diminishing dishonest behavior in real-life settings. According to their REVISE framework, interventions aiming at influencing the three forces REminding, VIsibility, and SElf-engagement can have a positive effect on an individuals' honesty. These three forces (or principles) should therefore be further examined.

The first principle, reminding, refers to moral reminders that increase the saliency of people´s moral standards. This mechanism implies that moral cues remind people of morality, which encourages them to engage in moral behavior. As an example, Mazar, Amir, and Ariely (2008) found that when participants of an experiment had to recall the 10 Commandments (an implicit moral reminder) instead of 10 schoolbook titles (neutral reminder), they showed to be less likely to cheat in a subsequent task. Similar results were found when participants had to unscramble sentences consisting of ethics-related words before taking part in a cheating task (Welsh & Ordóñez, 2014).

The next principle, visibility, predicts a decrease in dishonest behavior when people have a stronger feeling of being seen and identified. An example of the effectiveness of this principle is given by Bateson, Nettle, and Roberts (2006) who showed in their study, that a picture of "watching eyes" (an implicit surveillance nudge), when displayed above an honesty jar, significantly increased honor payments when compared to a displayed neutral picture. Similarly, it is shown that people behave more honestly when being in a room that is well-lit when compared to a darker room with dimmed lights (Zhong, Bohns, & Gino, 2010). Furthermore, Ayal et al. (2015) argue that visibility is also related to the formation of social norms as observing another individual´s behavior may trigger a person to either engage in similar or contrary behavior, which implies that social norm can generate both, honest and dishonest behavior. For example, in their experiment, Gino, Ayal, and Ariely (2009) found that the exposure to a confederates' cheating behavior during a cheating task increased cheating among participants when the confederate was part of the in-group but decreased cheating when the confederate was an out-group member.

Finally, the last principle self-engagement suggests that establishing a direct connection between an individual´s behavior and their general perception of their morality encourages honesty. Shu et al. (2012) studied this mechanism by comparing the effect of a signature placed at the beginning or at the end of a car insurance self-report form. The researchers' results revealed that when signing a veracity statement before reporting the car mileage, which should have generated a direct link between one's morality and concrete behavior, people were more likely to indicate a higher mileage for their car than when signing the same statement after reporting.

While the three proposed principles, reminding, visibility, and self-engagement, encompass a broad variety of different honesty-enhancing interventions, there are some manipulations and mechanisms potentially diminishing dishonesty that are not taken into account by the REVISE framework. For instance, it is shown that payoff magnitude, (Hilbig & Thielmann, 2017) the collaborative setting (Ścigała, Schild, Heck, & Zettler, 2019), as well as the cheating profiteer´s identity (e.g., cheating for personal gain vs. gain for charity; Lewis et al., 2012), play a significant role in a person´s decision to behave ethically or not. Why those influences are not included in Ayal et al.´s (2015) framework to REVISE dishonest behavior, remains, however, unexplained.

2.2. Restraining dishonesty on online dating platforms

Honesty-enhancing interventions are applied in various contexts such as fare evasion (Ayal, Celse & Hochman, 2019), purchases on non-monitored newspaper markets (Pruckner & Sausgruber, 2013), bicycle theft (Nettle, Nott, & Bateson, 2012), or tax compliance (Kettle, Hernandez, Sanders, Hauser, & Ruda, 2017). However, up to this point, such honesty nudges were never studied with regard to deceptive behavior on online dating platforms.

In one of their publications, Ellison and Hancock (2013), two authors who published many leading papers in the field of honesty and self-presentation on online dating platforms (e.g., Ellison, Heino, & Gibbs, 2006; Ellison et al., 2011; Gibbs, Ellison, & Heino, 2006; Hancock, et al. 2007; Hancock & Toma, 2009; Markowitz & Hancock, 2018; Toma & Hancock, 2010; Toma, Hancock, & Ellison, 2008), suggested that deceptive behavior of online dating users may be curbed by using manipulating methods which increase feelings of being observed or activate users' morality. The authors pointed here at two specific honesty nudges within the REVISE principles visibility and self-engagement that might be useful to be implemented in the context of online dating: images of "watching eyes" and signing before creating an online dating profile. However, a vast body of literature calls the effectiveness of these two honest-enhancing nudges into question, which is further described in the following paragraphs.

Many studies within the field of communication, psychology, and economics showed, in contrast to the findings of Bateson et al. (2006), that the effect of eyes primes on dishonesty are rather limited and seldom significant (e.g., Ayal et al., 2019; Cai, Huang, Wu, & Kou, 2015; Pfattheicher, Schindler, & Nockur, 2019; Spottswood & Hancock, 2016). Similar results were found in relation to various types of prosocial behavior. For example, Northover, Pedersen, Cohen, and Andrews (2017) conducted two meta-analyses of 19 papers investigating the influence of "watching eyes" on people's generosity and found that the mean effect size of this artificial surveillance cue is generally very small and not significantly different from zero. Although being challenged by Dear, Dutton, and Fox (2019) who performed a systematic review of 13 studies and concluded that eyes primes overall have a dampening effect on antisocial behavior, the frequent occurrence of null results in the dishonesty literature provides enough evidence to suggest that such implicit and subtle observation cues are unlikely to significantly increase people´s honesty. This is expected to be particularly true in the context of online dating, where the magnitude of deception is usually rather small (e.g., Toma et al., 2008), and thus, less room for improvement is provided.

The second honesty-enhancing intervention that is proposed by Ellison and Hancock (2013), asking users to provide a signature before they create an online dating profile, is also anticipated to be inadequate in actually reducing users' dishonesty. As previously mentioned, Shu et al. (2012), a frequently cited paper, provided evidence that signing an honor code or statement before doing a cheating task increases honesty. However, the same authors, recently, disconfirmed their findings. Together with other researchers they conducted five conceptual replications (N = 4,559) and one powerful direct replication (N = 1,235) using both, electronic signatures and handwritten signatures and failed to find any significant effects of signing first on honest reporting (Kristal. et al., 2020). This made them conclude that signing a veracity statement before reporting is unlikely to enhance honesty. Other research studying signing interventions explicitly in online contexts showed similar null results (e.g., Chou, 2015; Kettle et al., 2017; Koning, 2019), which raises serious doubts about the usefulness of signatures to curb deception on online dating platforms.

Based on the discussion above, it is concluded that the two honesty-nudges proposed by Ellison and Hancock (2013), images of "watching eyes" and signing before profile creation, are not sufficiently supported by scientific evidence to be expected to actually enhance honesty among online daters. Nevertheless, after an extensive analysis of the existing honesty literature, and considering the intervention´s applicability to the chosen research context[1], three types of manipulations are selected that appear to be promising in increasing honest behavior in online dating and are studied within this research. The three selected interventions are salient surveillance, descriptive norm and explicit moral reminding which are expected to positively influence self-presentation accuracy in dating profiles through the mediating constructs perceived observability, descriptive normative beliefs, and moral salience (see Figure 1.). Each of the three nudge types as well as their related underlying processes and mechanisms are explained in the following subsections.

2.3. Perceived observability

As proposed by the visibility principle within the REVISE framework, it is argued that honesty is encouraged when people have the feeling of being observed by others. This is based on findings within classic research in social psychology showing that anonymity makes people

[1] Certain types of interventions and situational factors such as light intensity in the room (Zhong et al., 2010) or manipulation of payoff magnitude (Hilbig & Thielmann, 2017) are not really applicable to an online dating context.

act unethically (e.g., Zimbardo, 2000) while observability stimulates prosociality (e.g., Bradley, Lawrence, & Ferguson, 2018). This suggests that visibility cues reducing a person's sense of anonymity are also expected to decrease unethical behavior.

Changes in people´s moral behavior when having the feeling of being watched are connected to various internal processes. First of all, the feeling of being seen and identified by an authority is often associated with the anticipation of punishment (e.g., Levine, 2000). For instance, Olken, (2007) showed that increasing the probability of audits of Indonesian village road projects, and thus the chance of detection of missing expenditures and subsequent punishment, significantly decreased corruption. If applied to the context of online dating, profile scans and other monitoring measures of platform providers might suggest that there is an increased chance of deceptive behavior being detected, possibly resulting in a deceptive user´s online dating account being suspended. To avoid such punishment, users are likely to be more motivated to adjust their deceptive behavior on the platform. Nevertheless, punishment alone is not always the driver of honest behavior in a monitored environment, as it is shown that even in situations in which people are monitored but expect no punishment, positive effects of visibility on dishonesty are found (Gneezy, Kajackaite, & Sobel, 2018). Hence, another explanation of why perceived observability results in more honest behavior is provided by the social impact theory and social identity theory. According to the social impact theory (Latané, 1981), the real or imagined presence of others (e.g., when knowing that someone might see what you are doing) is a social force influencing people´s behavior. The (imagined) presence of others elicits feelings of being evaluated, which motivates individuals to engage in self-evaluation and impression-management (Leary & Kowalski, 1990, Schlenker, 1980), resulting in behavioral adjustments to present oneself in a socially more desirable way. As it is assumed that people generally wish to be perceived as being honest (e.g., Mazar et al., 2008), it is expected that people avoid lying and try to be honest to maintain a positive social identity, thus, a positive image to themselves, but also others (Schlenker, 1978). In summary, it can, thus, be concluded, that by increasing a person´s perceived observability, dishonest behavior can effectively be diminished.

As previously stated, various studies investigating subtle and artificial surveillance cues such as images of "watching eyes" show inconclusive and rarely convincing results regarding their effectiveness on honest behavior (e.g., Pfattheicher et al., 2019; Spottswood & Hancock, 2016). The reason for this might be that these manipulations simply often fail to significantly increase a person´s feeling of being watched. Another reason might be that implicit cues such

as images of watching eyes suggest that there are no "real" others that could observe one´s behavior, and thus, expectations of punishment or evaluation were not enforced (Jansen, Giebels, van Rompay, & Junger, 2018). Hence, it is not surprising, that in contrast to subtle manipulations of observability, direct monitoring and salient cues of actual surveillance, turn out to have relatively stable positive influences on honest behavior (e.g., Kajackaite & Gneezy, 2017; Olken, 2007; Schild et al., 2019; Welsh & Ordóñez, 2014). To give an example, Jansen et al. (2018) showed that the presence of a camera, which indicates that there is the possibility of others being able to watch/evaluate one´s behavior, significantly decreases cheating behavior. Similarly, Gneezy et al. (2018) compared the outcomes of a cheating task that was either done in private or on a computer (in the latter, participants could easily conclude that their performance might be recorded) and found that in the observable condition, people cheated significantly less. Therefore, it is expected that explicit surveillance positively influences perceived observability, and thus, self-presentation accuracy among online dating users. Consequently, the following two hypotheses should be tested within this study:

H1a: Salience surveillance is positively related to perceived observability

H1b: Perceived observability is positively related to self-presentation accuracy

2.4. Descriptive normative beliefs

Within the visibility principle of their REVISE framework, Ayal et al. (2015) describe that the visibility of other people behaving either honestly or dishonestly, encourages similar behavior, especially when those others are part of a person's in-group. The usage of social norms, thus, providing information about what most people do (descriptive norm) or what most people approve or disapprove of (injunctive norm), is considered to be a powerful tool in influencing a person's behavior (Goldstein & Cialdini, 2007; Sunstein, 2014). Social norm messages are frequently studied and have proven their effectiveness regarding various types of pro-social and anti-social behavior, such as energy and water conservation (Allcott, 2011; Allcott & Rogers, 2014; Bhanot, 2018; Brent, Cook, & Olsen, 2015; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007), hotel towel reuse (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008), recycling (Cialdini, 2003), charitable giving (Frey & Meyer, 2004), theft of petrified wood (Cialdini et al., 2006), highway speeding (Houten & Nau, 1981) delayed tax payments (Hallsworth, List, Metcalfe, & Valey, 2017), and taxpayer compliance (Alm, Schulze, Bose, &

Yan, 2019). To give an example, the Behavioural Insights Team of the UK Government found that referring to peer's low tax evasion rate in tax letters increased tax debt payment by 15 percent when compared to a control group that received letters without such social norm information (Behavioural Insights Team, 2012), providing proof for the effectiveness of social norm nudges in positively influencing people's behavior.

Nevertheless, Bicchieri and Dimant (2019) emphasized that for norm-nudging to be effective, it is crucial to correctly understand underlying mechanisms of the influence of various types of information as well as the certain context in which the behavior in question occurs. The authors argue that norm-nudges are most useful when behaviors are interdependent, thus, when the motivation of performing a certain behavior is conditional on a person's expectations of what other people commonly do. In such a case, we talk about a descriptive norm, which implies that an individual conforms to a behavioral pattern as they believe that most people within their reference network also conform to it (Bicchieri, 2016). This makes it rather easy to change behavior, namely by changing one's descriptive normative beliefs (or empirical expectations)[2], thus, a person's beliefs about how other people within their reference group behave. Reasonably, to craft suitable social norm messages, Bicchieri and Dimant (2019) stress the importance of clearly identifying the reference network of a selected target group whose behavior ought to be changed. In 2016, Drouin, Miller, Wehle, and Hernandez published a study in which they found that almost no one expects others to be completely honest on online dating platforms. Moreover, they discovered that a person`s perception of other users' lying behavior is the most salient predictor of the person´s dishonest behavior on online dating platforms, even more than certain personality traits such as Machiavellianism, psychopathy, or internet addiction. This implies that dishonest behavior in online dating is interdependent and most likely to be influenced by changing users' expectations of the behavior of other online dating users, which, thus, represent their reference network. Because of this, it is concluded that honesty on online dating platforms can be effectively enhanced by descriptive norm messages which succeed in making people believe that other online dating users are honest on online dating websites. Hence, the following two hypotheses are formulated:

[2] Beliefs of descriptive norms and injunctive norms are sometimes called empirical expectations and normative expectations (e.g., Bicchieri, 2016; Bicchieri & Dimant, 2019; Bicchieri, Lindemans, & Jiang, 2014), and other times described as descriptive normative beliefs and injunctive normative beliefs (e.g., Brutovská, Orosova, Kalina & Šebeňa, 2014; Göckeritz et al., 2010; Wang & Lin, 2017).

H2a: Descriptive normative messages are positively related to descriptive normative beliefs

H2b: Descriptive normative beliefs are positively related to self-presentation accuracy

2.5. Moral salience

According to the REVISE framework, moral reminders can curb dishonest behavior as they "increase the saliency of morality and decrease the ability to justify dishonesty" (Ayal, et al. 2015, p. 739). This assumption is based on the theory of self-concept maintenance (Mazar et al., 2008), which states that people want to maximize self-profit, while at the same time, they pursue to maintain a positive self-concept of themselves. Since people generally value honesty and want to perceive themselves as honest and moral human beings (e.g., Fischbacher & Föllmi-Heusi, 2013), they try to find a balance between dishonest behavior for personal gain, and the maintenance of a positive self-image in terms of honesty. Therefore, people take advantage of grey areas (e.g., by telling themselves that they lie only a little bit)[3] to justify deviant behavior (Shalvi et al., 2015), making it possible to maintain a self-concept of being honest despite being dishonest. However, by reminding people of morality and increasing the salience of what is morally wrong and morally right, ambiguity is not only eliminated, but people pay also more attention to their moral standards, which makes it more likely for them to reflect on their dishonest actions in their self-concept (Ayal et al., 2015; Mazar et al., 2008; Peleg, Ayal, Ariely, & Hochman, 2019). This, in turn, will cause them "to adhere to a stricter delineation of honest and dishonest behavior" (Mazar et al., 2008, p. 635), which makes it more likely for people to engage in honest behavior, than when they are inattentive to their moral standards (Mazar et al., 2008). In other words, by being reminded of his or her standards of morality, the probability for an individual to violate ethical rules is reduces as the moral reminders increase the ethical dissonance associated with dishonest behavior, and thus, makes it more likely to be honest (Peleg et al., 2019). This is particularly true when those reminders are presented right before situations in which a person is tempted to engage in deceptive behavior (Ayal et al., 2015).

The results regarding the effectiveness of moral reminders are, however, rather ambiguous. In the frequently cited paper of Mazar et al. (2008), it is shown that participants, who had to recall the Ten Commandments (which is a subconscious moral prime, a form of a moral

[3] This might also explain why in literature is suggested that lying on online dating websites is frequent, but rather small in magnitude (Toma et al., 2008).

reminder that is here described as an implicit moral reminder), cheated significantly less in a subsequent performance task in which they were given the opportunity to cheat for financial gain. Similarly, Welsh and Ordóñez (2014) found that unscrambling ethical sentences before a cheating task motivates people to more honest behavior. Recent research, however, often failed to find significant effects of such implicit moral reminders on dishonest behavior. To give an example, in the registered replication report of Verschuere et al. (2018), the authors compared the results of 25 replications of the experiment of Mazar et al. (2008) and found that recalling the Ten Commandments did not significantly reduce dishonesty. Likewise, Schild et al. (2019), who investigated the REVISE principles introduced by Ayal et al. (2015), studied the reminding principle by replicating Welsh and Ordónez´s (2014) experiment and could not find any significant effects for their proposed implicit moral reminder. Similar results were also found by Kleinlogel et al. (2018), who compared the effects of ethical and unethical primes by exposing the participants of their experiment either to neutral, moral, or immoral book titles. Their results showed that implicit moral reminders (the moral book titles, i.e., "Moral Education") fail to decrease dishonesty in a subsequent cheating task, while immoral reminding (the immoral book titles, e.g., "Win at All Costs") lead to increased cheating.

While for subconscious moral primes (implicit moral reminders), the literature provides merely limited support, for explicit moral messages or requests (e.g., directly asking people to behave morally and/or to be honest; here described as explicit moral reminders), results are mixed, yet, appear more promising. Although Zhao, Dong, and Yu (2019), who compared implicit with explicit moral reminders (listing moral values vs. request to "be honest"), found that either of the two failed to decrease cheating, there are various studies that provide substantial proof for the positive influence of explicit moral requests on honesty. For example, Pruckner and Sausgruber (2013) analyzed payments at an unsupervised newspaper stand and found that displaying an explicit moral message ("Thank you for your honesty") significantly increased the average payment amount. Moreover, Bucciol and Piovesan (2011) showed that explicitly telling children between the age of five to fifteen not to cheat effectively dampened deviant behavior, and the findings of Grym and Liljander (2017) showed that asking students to observe their school´s honor code and behave morally, significantly decreased cheating in a mathematical quiz. Therefore, it is expected that moral reminders in the form of direct moral requests are expected to increase honesty in dating profiles by making morality more salient. Hence, the following hypotheses will be tested:

H3a: Explicit moral reminding is positively related to moral salience

H3b: Moral salience is positively related to self-presentation accuracy

Finally, it is expected that surveillance nudges and descriptive norm messages have similar effects as moral reminders and are likely to activate moral salience. This is based on the assumption that surveillance cues and information about other people´s moral behavior are, similar to moral reminders, also able to steer a person´s attention toward morality and highlight morally wrong and right behavior (e.g., Welsh & Ordónez, 2014). Therefore, in this study, the following two hypotheses are also investigated:

H4a: Salient surveillance is positively related to moral salience

H4b: Descriptive norm messages are positively related to moral salience

2.6. Interaction effects

Since it is argued that the three proposed types of honesty nudges stimulate honesty via three different routes (by increasing perceived observability, moral salience, and by changing people´s descriptive normative beliefs), it is expected that their influence is additive. Therefore, it is presumed that having people exposed to more nudge types at the same time result in higher levels of honesty than when being exposed to only one of the three interventions. However, as explicit moral reminders increase moral salience, a mediating construct that is anticipated to be influenced also by the other two proposed honesty manipulations, combinations in which the moral reminder is simultaneously shown together with either the descriptive norm message or salient surveillance are expected to be weaker than combinations in which the salient surveillance message and the descriptive norm message are shown together, since, in the latter, self-presentation accuracy is influenced not via two but three mediating processes. This idea is, for instance, supported by the results of Welsh and Ordóñez (2014), which showed that moral priming and monitoring separately reduced dishonesty, when combined, however, they only found little incremental effect.

2.7. Moderating influences

The impact of the three nudging interventions as well as the effect of the mediating constructs on self-presentation accuracy are expected to differ depending on certain personal conditions. Therefore, online dating experience, involvement, and honesty-humility are included in this study to allow for additional hypothesis testing and explorative analyses of moderating influences. The three expected moderators as well as the proposed moderator hypotheses are described and explained in the following subsections.

2.7.1. Online dating experience

Many authors suggest that experience with online platforms is a determinant for a person´s deceptive behavior online. Caspi & Gorsky (2006) studied online deception among Israeli users and found that frequent users deceive more online than infrequent users. Moreover, similar results are provided by Hancock, Thom-Santelli, and Ritchie (2004) who observed significant correlations between the frequency of email use and email lying, which made them conclude that more experienced users of a communication technology are more likely to deceive with that technology than less experienced users. Caspi & Gorsky (2006) provide an explanation for this causality by suggesting that as online tools become more transparent to their users, anxiety of technological faults possibly disclosing deception is reduced, while at the same time, feelings of efficacy are enforced, which, eventually, tempts those users to delude more when being online.

Literature showed that individuals who are generally more honest (e.g., individuals being high in social value orientation or honesty-humility; see also Chapter 2.7.3.) are also less likely to be influenced by dishonesty curbing cues as their level of honesty is already too high to be significantly further increased. Individuals that have the tendency to lie, however, are more sensitive to situational circumstances they encounter and will adjust their deceptive behavior when being given reason for it (e.g., when being watched or to avoid punishment; van Dijk, Cremer, & Handgraaf, 2004; Hilbig & Zettler, 2009; Kleinlogel et al., 2018). Drawing from this, it is proposed that users having only limited experience with online dating platforms will already refrain from deceptive behavior due to those online tools being opaque to them, and thus, will be less affected by the honesty nudges. Users who are highly experienced and less reluctant to lie on online dating apps and websites, on the other hand, are, in turn, expected to

attune the deceptiveness in their online dating profile to situational factors to which they are exposed. Therefore, the following moderator hypothesis is formulated:

H5: The effect of the honesty interventions on self-presentation accuracy is stronger for individuals with high levels of online dating experience than individuals with low levels of online dating experience.

Different levels of online (dating) experience, do not only influence a person`s deceptive behavior but also their perception of their own and other users' lying online. Drouin et al. (2016) findings showed that people who are highly experienced with various online venues (social media, chat rooms, online dating, and sexual websites) perceive themselves as being less honest on those platforms and other users as more honest than people with low levels of online experience. In other words, while users generally perceive themselves as being more honest than other users, this self-other asymmetry is significantly smaller for experienced users than inexperienced online users, indicating a direct influence of online dating experience on a person's descriptive normative beliefs. Moreover, Gibbs et al. (2006) found that more experienced online dating users are also more successful on online dating platforms, implying that highly-experienced users are able to reflect on their experiences and, based on this, develop strategies and adjust their behavior and self-presentation to achieve their goals. These described differences between individuals having low and high levels of online dating experience provide sufficient reason to assume that online dating experience will, next to its moderating influence on the direct relationship between the three honesty nudges and self-presentation accuracy, also have moderating effects on relationships related to the mediating processes. Since, however, it is not yet clear how lower or higher degrees of online dating experience might moderate the relationships between the honesty interventions and the mediator variables and the relationships between mediators and the dependent variable self-presentation accuracy, following explorative research question is formulated that ought to be answered:

RQ2. How does online dating experience moderate the relationships between the honesty interventions, the mediator variables, and self-presentation accuracy in online dating profiles?

2.7.2. Personal involvement in online dating deception

The second variable that is expected to moderate the main relationships between the honesty manipulations and self-presentation accuracy is personal involvement. The concept of personal involvement relates to a variety of constructs, such as attitudinal involvement (Ostrom & Brock, 1968), personal or self-relevance (Petty & Cacioppo, 1986), and attitude importance (Krosnick, 1988) and can be described as the degree to which a person is "personally involved with an issue, event, object, or person to the extent that they care about that entity and perceive it as important" (Thomsen, Borgida, & Lavine, 1995, p. 191). In social psychology research, there is a general consensus that individuals who are personally involved with a certain issue, hold stronger, more stable attitudes toward that issue (e.g., Johnson & Eagly 1989; Krosnick, 1988; Thomsen et al., 1995) Also, according to the Elaboration Likelihood Model (ELM; Petty and Cacioppo, 1986), depending on their level of personal involvement, people pay either more or less attention to a message and process it either more or less intensively, thus via a central or peripheral route. Depending on along which route information was processed, either weak or strong arguments are more effective in changing a person´s attitude. In other words, consequences of higher levels of personal involvement regarding a certain issue are, that high personal involvement results generally in higher attitude resistance against persuasive messages, but at the same time, also increases a person´s motivation to elaborate on persuasive messages, which makes strong arguments particularly effective in changing attitudes of highly involved individuals.

Göckeritz et al. (2010), who studied the effect of descriptive normative beliefs on conservation behavior, found, that high personal involvement regarding energy conservation makes it not only more likely to engage in attitude-congruent behavior, but at the same time, also weakens the relationship between descriptive normative beliefs and conservation behavior. The authors interpret the latter in line with the ELM and state that high levels of personal involvement result in more elaborate information processing, which, in turn, results in social influence, a weak argument, to be less effective. Hence, these results, if applied to the context of this research and considering that honesty nudging interventions are expected to be subtle and mainly influence unconsciously without lots of elaborative thinking[4] (e.g., Ayal et

[4] Since people hold attitudes for various reasons, Petty & Cacioppo (1986), the creators of the ELM, posit that people actually invariably differ in the types of information they feel are central to the advantages of any position on an issue. Bearing this in mind, it is questionable whether the proposed interventions will indeed be recognized as weak arguments, as some individuals could still perceive them as being strong arguments. In avoidance of making this research too extensive, individual perceptions of the manipulations' argument strength were, however, not investigated. Nevertheless, it might be interesting to explore this in future research.

al. 2015; Schild et al. 2019), allow the presumption that users being highly involved with the issue of online dating deception will stay honest in their dating profiles, and are less likely to be persuaded by the three proposed honesty nudges. This results in the following moderator hypothesis:

H6: The effect of the honesty interventions on self-presentation accuracy is weaker for highly involved individuals than low-involved individuals.

2.7.3. Honesty-humility

It is commonly found that dark personality traits such as the "Dark Tetrad" (the "Dark Triad" dimension psychopathy, Machiavellianism, and narcissism with the additional trait sadism) predict dishonesty and cheating behavior (e.g., Halevy, Shalvi, & Verschuere, 2014; Jones & Paulhus, 2017; Kashy & DePaulo, 1996). For example, Jonason, Lyons, Baughman, and Vernon (2014) demonstrated that Machiavellianism is related to white lies, narcissism is associated with telling lies for self-gain, and psychopathy is connected to lying without any reason. Moreover, dark personality traits have proven themselves to predict, among others, lying in mating and academic contexts (Baughman, Jonason, Lyons & Vernon, 2014), cheating in coin-flipping tasks with high and low punishment risk (Jones & Paulhus, 2017), and dishonesty on sexual websites (Drouin et al., 2016).

A concept that is strongly related to dark personality traits is honesty-humility (Ashton & Lee, 2009; Ashton, Lee, & de Vries., 2014; Book et al., 2016; Lee & Ashton, 2005; Moshagen et al., 2018; Pfattheicher et al. 2019). Honesty-humility is one of the personality factors within the HEXACO personality model (Lee & Ashton, 2004) and 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). Honesty-humility encompasses variations within four facets: Sincerity, fairness, greed avoidance, and modesty. Sincerity refers to the willingness or unwillingness of an individual to manipulate others for personal gain, fairness relates to the degree to which a person is inclined to cheat or to take advantage of other people or society, greed avoidance refers to the interest of a person in possessing lavish wealth or signs of high social status and modesty is about the propensity to sees oneself superior and entitles to privileges (Ashton et al., 2014). The "Dark Tetrad" collectively correspond very closely to a low level of honesty-humility, and high honesty-

humility frequently showed to be negatively related to cheating (Hilbig & Zettler, 2015; Kleinlogel et al. 2018; Moshagen et al., 2018; Pfattheicher et al., 2019). As such, honesty-humility has proven to reliably predict deviant behavior, and in fact, this variable has shown to be an even more reliable predictor of dishonesty than the "Dark Tetrad" dimensions (Moshagen et al., 2018; Pfattheicher et al., 2019).

Past research implies that individuals high in honesty-humility seem to be unconditionally honest (Hilbig & Zettler, 2015). Kleinlogel et al. (2018), for instance, showed that individuals that score high in honesty-humility stayed consistently honest and stayed unaffected by moral, immoral, or neutral primes. Low scorers end to be more selfish and are more likely to engage in socially problematic behavior (e.g., Lee & Ashton, 2004), but at the same time, show more flexibility in adapting their behavior to situational cues (e.g., Hilbig & Zettler, 2009; Zettler, Hilbig, & Heydasch, 2013). Taking this into account, it is expected that individuals high in honesty-humility will refrain from being dishonest in their dating profiles, irrespective of whether they are exposed to an honesty nudge or not, while individuals low in honesty-humility are more likely to show higher levels of honesty when being treated by one of the three proposed honesty enhancing interventions. Hence, the following moderator hypothesis will be tested within this study:

H7: The effect of the honesty interventions on self-presentation accuracy is weaker for individuals high in honesty-humility than individuals low in honesty-humility.

2.8. Research model and hypotheses

The conceptual research model (Figure 1.) provides a visual overview of the expected influences between the three honesty manipulations, the mediating variables, and the dependent variable according to the proposed hypotheses (H1a – H4b). Table 1. gives an overview of all the hypotheses including the moderator hypotheses (H5 – H7).

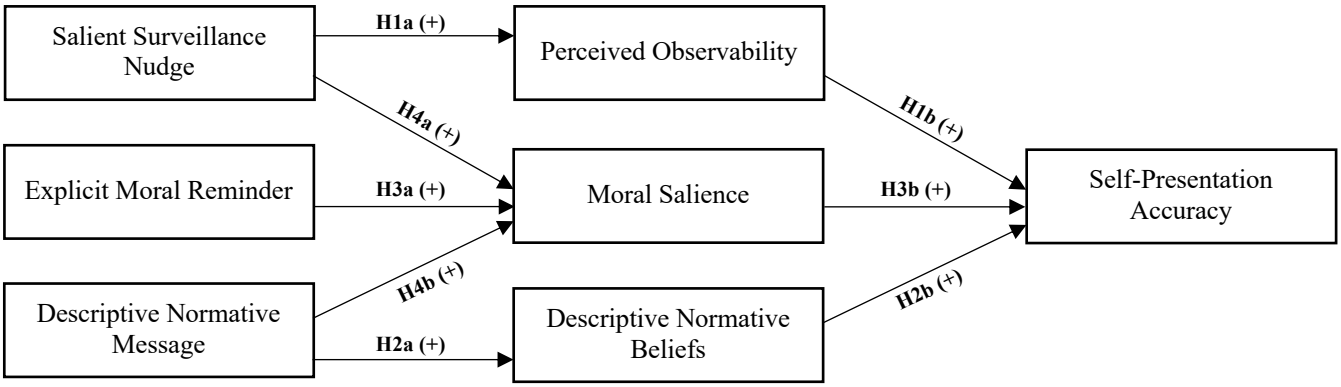

Figure 1. *Conceptual model*

Table 1. *Hypotheses*

	Hypotheses
H1a	Salient surveillance is positively related to perceived observability
H1b	Perceived observability is positively related to self-presentation accuracy
H2a	Descriptive normative messages are positively related to descriptive normative beliefs
H2b	Descriptive normative beliefs are positively related to self-presentation accuracy
H3a	Explicit moral reminding is positively related to moral salience
H3b	Moral salience is positively related to self-presentation accuracy
H4a	Salient surveillance is positively related to moral salience
H4b	Descriptive norm messages are positively related to moral salience
H5	The effect of the honesty interventions on self-presentation accuracy is stronger for individuals with high levels of online dating experience than individuals with low levels of online dating experience.
H6	The effect of the honesty interventions on self-presentation accuracy is weaker for highly involved individuals than low-involved individuals.
H7	The effect of the honesty interventions on self-presentation accuracy is weaker for individuals high in honesty-humility than individuals low in honesty-humility.

3. Research methodology

This chapter provides explanations regarding the research methodology utilized in this study. First, the research design is described, followed by the research procedure and the pre-testing. Next, the treatments in each condition, the fictional online dating profile, as well as the measures for the research constructs, are explained. Finally, a description of the research participants and their recruitment is given.

3.1. Research design

This study investigates the relationships and underlying processes between the three proposed honesty nudges (salient surveillance nudge, descriptive normative message, and explicit moral reminder) and self-presentation accuracy in online dating profiles. The formulated hypotheses and research questions are tested by means of an experiment with a 2 (salient surveillance nudge: no vs. yes) x 2 (descriptive normative message: no vs. yes) x 2 (explicit moral reminder: no vs. yes) between-subjects design (see Table 2). In the experiment, it was examined to which extent the nudging interventions positively influence their assigned mediating mechanisms (perceived observability, descriptive normative beliefs, and moral salience), through which self-presentation accuracy in dating profiles is expected to be positively impacted. In addition, the moderating roles of online dating experience, involvement in online dating deception, and honesty-humility in relation to the honesty manipulations' main effect on self-presentation accuracy as well as to the bivariate relationships between interventions, mediators, and the outcome variable (as visualized in Figure 1.) were explored.

3.2. Procedure

The experiment was conducted within an online survey, where participants were assigned to one of the experimental conditions. In each condition, participants were first treated with a certain stimulus (a message representing one or more of the three nudge interventions, see Chapter 3.4.) before filling in a fictional online dating profile (see Chapter 3.5.). Afterward, participants had to answer the items measuring the constructs for the mediators, moderators, and the outcome variable (see Chapter 3.6.).

After completing their online dating profile, participants had to answer the items measuring moral salience. Subsequently, the confidentiality agreement and informed consent

form were displayed, which was followed by the honesty measures. Here, participants were shown the information they provided for each profile element and were asked to rate the accuracy of their responses (further explanations regarding the measurement of honesty are provided in Chapters 3.6.1. and 3.6.2.). The items for moral salience were asked before the honesty measures to avoid possible priming effects. For the same reason, the confidentiality agreement was not displayed directly at the beginning of the experiment[5], as is usually the case, but at a later point, before the honesty measures. After rating the accuracy of their responses for each profile item, the respondents had to fill in the items measuring the remaining constructs for the mediators (perceived observability and descriptive normative beliefs) and moderator variables (online dating experience, involvement in online dating deception, honesty-humility). At the end of the experiment, similar to previous studies about manipulating cheating behavior (e.g., Dimant, van Kleef, & Shalvi, 2020; Jansen et al., 2018), participants had to tell which messages were displayed to them before they filled in their profile to check whether or not the content of the treatment intervention was correctly understood. The survey ended with some final questions about demographics.

3.3. Pre-testing

Before research execution, the interventions, the online dating profile, and the measures were pretested by means of a focus group discussion with a total of five participants. The focus group participants differed in their gender, nationality, relationship status, and level of online dating experience to be representative of a variety of potential online dating users. Their ages ranged from 22 to 26, with which they were representative for the age group being most active on online dating apps (Statista Research Department, 2021).

As a preparation for the focus group meeting, participants had to fill in the items for the online dating profile to develop a sense for the profile items and to be able to give indications regarding the length of the dating profile creation process. During the focus group meeting, participants discussed the design and the items of the online dating profile, the treatment messages per condition, as well as the items measuring the moderator and mediator variables. The items aiming at measuring self-presentation accuracy were tested using the plus-minus

[5]At the beginning of the survey, a brief research description was displayed in which it was merely disclosed to the participants that this study investigates how people create profiles on online dating platforms and that for this, they are asked to create an online dating profile before answering some additional questions (see Appendix A.).

method. The outcomes of the focus group discussion resulted in adjustments regarding the formulation of the nudge messages, the profile items, and the design of the online dating profile. Moreover, some measures were reordered, removed, added, or reformulated.

3.4. Treatments

The treatments in the eight different conditions took the form of different messages, representing one or more of the three interventions: salient surveillance, descriptive normative message, and explicit moral reminding (see Table 2). The messages were displayed to the participants on a separate webpage before they started filling in their profiles.

When exposed to the salient surveillance nudge, participants observed information about surveillance measurements on online dating platforms which aimed at increasing their feeling of being observed. This information was pre-tested and improved during the focus group discussion. The descriptive normative message informed participants about the degree to which other online dating users are honest when creating their online dating profile and is based on messages previously used in literature studying social-norm-nudges (Bicchieri & Dimant, 2019; Bicchieri et al., 2014; Bicchieri & Xiao, 2009). The explicit moral reminder represented a direct request to "be honest" when creating the online dating profile and was adjusted from the explicit reminder used by Zhao et al. (2019). Finally, an additional sentence ("It is VERY IMPORTANT to read and keep in mind the following message") was added to conditions 2-8 to increase the participants' attention toward the messages. A visual example of how the nudging interventions were presented to the participants is provided in Figure 2.

Table 2. *Honesty interventions in the eight conditions*

Condition	Salient Surveillance Nudge	Descriptive Normative Message	Explicit Moral Reminder	Message
1	No	No	No	"Click on 'continue' to create your online dating profile."
2	Yes	No	No	"Each online dating profile is checked by online dating platform providers to ensure authenticity."
3	No	Yes	No	"It is found that the majority of online dating users are completely honest when creating their online dating profile."
4	No	No	Yes	"Please be honest while creating your online dating profile."
5	Yes	Yes	No	"Each online dating profile is checked by online dating platform providers to ensure authenticity. It is found that the majority of online dating users are completely honest when creating their online dating profiles."
6	Yes	No	Yes	"Each online dating profile is checked by online dating platform providers to ensure authenticity. Please be honest while creating your online dating profile."
7	No	Yes	Yes	"It is found that the majority of online dating users are completely honest when creating their online dating profile. Please be honest while creating your online dating profile."
8	Yes	Yes	Yes	"Each online dating profile is checked by online dating platform providers to ensure authenticity. It is found that the majority of online dating users are completely honest when creating their online dating profiles. Please be honest while creating your online dating profile."

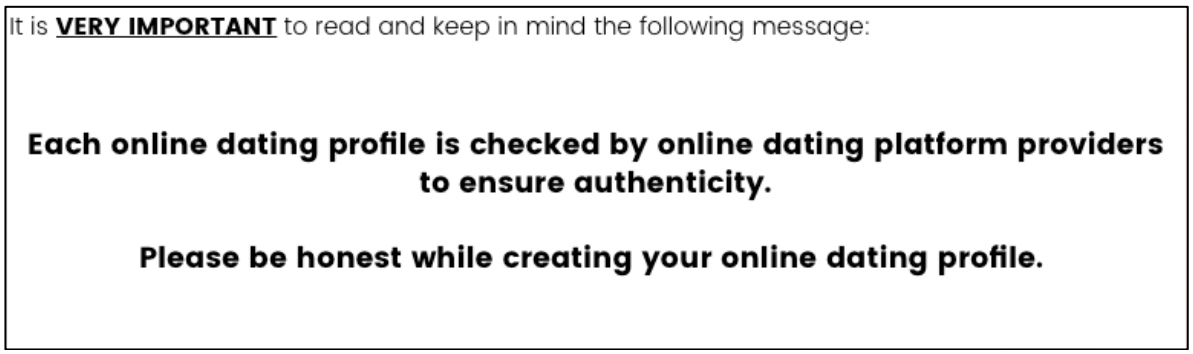

Figure 2. *Treatment in condition 6 (desktop view; Qualtrics, 2021).*

3.5. The online dating profile

Before creating their fictional online dating profile, participants were asked to imagine that they want to use a popular online dating platform to meet new people and go on dates, and to do this, they have to create a dating profile. Furthermore, they were told that after the experiment, it is possible to save and/or print their created profile so they can use it when creating a real online dating account. Afterward, participants were guided to a page showing the treatment message per condition and had to click on a button to start creating their profile.

The type of information participants had to provide when creating their online dating profile was based on items included in profiles used in literature studying misrepresentation in online dating (Hall, et al., 2010; Toma et al., 2008) as well as profiles on real-life dating platforms (Match [https://uk.match.com], EliteSingles [https://www.elitesingles.com], Parship [https://uk.parship.com]). The 23 items asked in the profiles can be divided into seven categories: general information (gender, sexual orientation, age, place of residence), physical appearance (height, weight, body type, eye color, hair color, other physical features), personality, social status (level of education, occupation, income), relationship history (relationship status, relationship goals, children), habits and interests (hobbies, interests, smoking, drinking), and beliefs (religion, politics). The profile items were formulated as open questions to provide participants with a greater scope when creating their online dating profile. Although being the standard on dating platforms, participants were not asked to provide a name or update a profile picture when creating their dating profile to preserve their anonymity and reduce respondent`s time expenditure, and thus, dropout rate (Lindemann, 2019).

To increase the generalizability of the study, certain measures were taken to make the online dating creation process in the experimental setting more realistic and closer to a real-life setting in which online dating profiles are created. First, to motivate participants to fill in their profile as they would on actual dating platforms, they were given the opportunity to download the profile they created in the experiment to reuse it in actual online dating settings. In addition, to better reflect real-life conditions, certain design aspects of the online dating creation process were adapted from existing dating apps and websites (see Figure 2.) The webpages on which participants had to answer questions for their dating profile showed a background image, similar to images of happy couples which are frequently shown on dating platforms (e.g., EliteSingles [https://www.elitesingles.com]; Parship [https://uk.parship.com]). Next, the primary and secondary color used in the artificial dating profile's design was a similar shade of pink that is used in the app design of the popular dating platform Tinder (Brand

Palettes, 2021). Moreover, a progress bar was displayed on top of the web pages, which is a design feature frequently implemented by dating sites, presumably to increase users' likelihood of completing the profile creation process (Conrad et al., 2010). Finally, each section of the profile items was accompanied by a short introduction, intended to continually remind participants of the question's dating context. The items in the dating profile can be found in Appendix A.

After profile completion, participants had to fill in the items measuring the variable constructs, which are described in the following section.

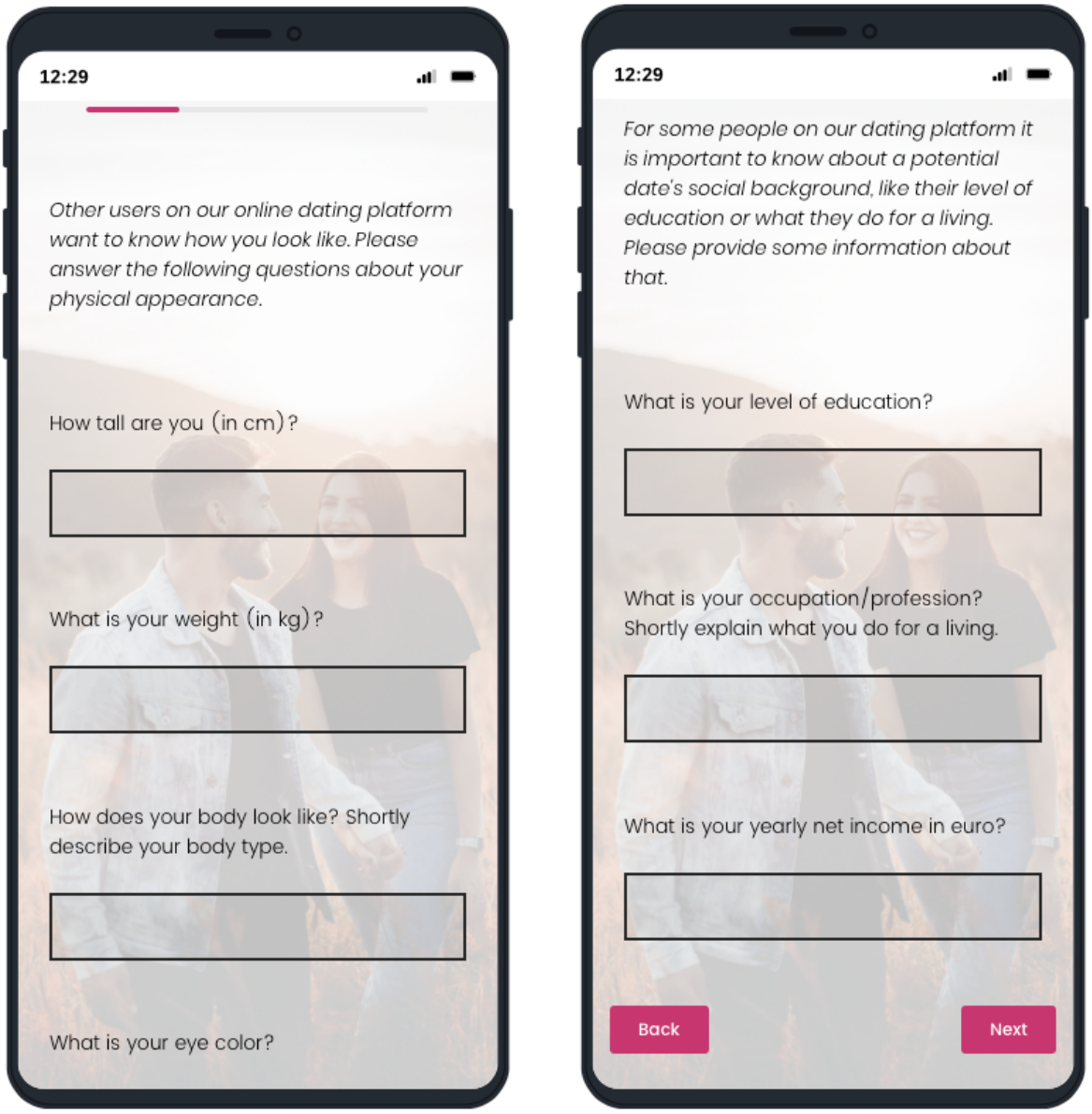

Figure 3. *Example pages in the online dating profile (mobile view; Qualtrics 2021)*

3.6. Measures

The first part of this subsection is devoted to the question of how honesty can be measured in the context of online dating to provide an explanation of the decision to use self-reported honesty measures in the experiment. Subsequently, the measures for the remaining variables are explained. An overview of the measures per variable is given in Appendix B.

3.6.1. Measuring honesty

Research studying the effect of honesty nudges developed and utilized a variety of dishonesty-revealing tasks to quantify (dis)honesty[6]. Frequently, studies in which honesty was measured, conducted experiments in which participants had to perform dice-rolling tasks (e.g., Dimant et al., 2020; Kleinlogel et al., 2018; Lewis et al., 2012; Pfattheicher et al., 2019; Zhao et al., 2019) or coin-toss tasks (e.g., Bar-El & Tobol, 2017; Bucciol & Piovesan, 2011; Kleinlogel et al., 2018; Pfattheicher et al., 2019), solved mathematical matrixes (e.g., Gino et al., 2009; Kleinlogel et al., 2018; Mazar et al., 2008; Verschuere et al., 2018; Yaniv & Siniver, 2016), compared the number of dots within two fields (Cai et al., 2015; Gino & Ariely, 2012; Hoffman et al., 2015; Peleg et al., 2019), played mind games in which they had to tell if a displayed number matched a number they imagined beforehand (e.g., Dimant et al., 2020; Jiang, 2013; Schild et al., 2019) or played social games such as dictator games (e.g., Cai et al., 2015) or trust games (e.g., Charness & Dufwenberg, 2006). In those tasks and games, participants received rewards that could be increased by cheating, thus, by behaving dishonestly. Other studies measured honesty by quantifying actual context-related behavior, such as the number of bicycle thefts (Nettle et al., 2012), average car mileage reporting (Shu et al., 2012), tax liability declarations (Kettle et al., 2017), or newspaper payment amount and frequency (Pruckner & Sausgruber, 2013).

In an online dating context, such experimental designs are, however, not really suitable to evaluate dishonesty. Accordingly, it is not surprising that in studies investigating deception in online dating (or other comparable areas), it was typically necessary to rely on self-reported honesty measures. Hall, Park, Song, and Cody (2010), for instance, investigated strategic misrepresentation on online dating platforms and measured this variable by asking users of an online dating site to self-report their likelihood of mispresenting personal attributes such as assets, relationship goals, interests, personality traits, and past relationships to increase their

[6] An overview of methods to study dishonesty is provided by Jacobsen, Fosgaard, and Pascual-Ezama (2018).

chance for a date. Moreover, Lundgren and Cornwell (2001), one of the first studies focusing on misrepresentation in internet dating, compared the amount of misrepresentation in romantic relationships in cyberspace and "real space" (face-to-face relationships) and measured deception by questioning people if, in order to increase a person´s interest in them, they ever mispresented themselves regarding their interests, age, physical characteristics, and background (education, occupation, living arrangement, etc.). Similarly, in their research on online lying, Drouin et al. (2016) measured honesty across four types of online venues (social networking sites, online dating sites, chat rooms, and sexual websites) by utilizing items in which participants had to indicate how often they think that they are completely honest about who they are on those platforms. Finally, Birnholtz, Guillory, Hancock, and Bazarova (2010) as well as Markowitz and Hancock (2018), who studied deceptiveness in romantic and non-romantic mobile conversations, determined dishonesty by exposing respondents to their own messages and asking them to rate the degree to which those messages are deceptive or not.

Although it is mentioned that relying solely on self-reporting honesty measurements might prove risky as people normally try to hide their deceptive behavior (Jacobsen et al., 2018), there is substantial research that suggests otherwise. For instance, in their article "Being Honest about Dishonesty: Correlating Self-Reports and Actual Lying", Halevy et al. (2014) state that there is actually a strong correlation between a person´s self-reported frequent lying and their real-life deceptive behavior. Moreover, Toma et al. (2008), who also studied deceptive self-presentation in user profiles on online dating platforms, measured dishonesty by analyzing both, participants` self-reported accuracy and observed accuracy. The former was measured by asking online dating users to rate the accuracy of each of their item responses in their dating profile, while the latter was measured by verifying some observable profile elements, such as height, weight, and age. Their results showed that the self-reported and observed accuracy of the users' profile information significantly correlated with each other. Furthermore, the authors emphasized that self-reported measures are actually needed to determine whether someone is aware of inaccuracies and thus necessary to measure intentional deception, while observed inaccuracies might be caused by unintentional deviations, for instance, due to self-deception (meaning, a person truly believes that the indicated information is true). This, and the methods utilized in related literature, give enough indications to conclude that self-reported measurements are the appropriate tool to measure dishonesty in the context of self-presentation on online dating profiles. The measurement of self-presentation accuracy is further explained in the following subsection.

3.6.2. Self-presentation accuracy

Similar to the procedure used in the study design of Toma et al. (2008)[7], participants' honesty in their dating profiles was measured by showing them the information they provided for each profile element and asking them to rate that information's accuracy on an accuracy scale[8]. However, since Toma et al. (2008) observed a ceiling effect in their results (average accuracy score was 4.65 of 5) it was decided to make some changes in the design of the scale to avoid extreme data skewness. First of all, instead of a 5-point-scale for their accuracy measures, this study utilized a 7-point-accuracy-scale (1 = "not at all accurate", 7 = "completely accurate") as research suggests that answer variance is maximized with a scale length of 7 (Eutsler & Lang, 2008). Moreover, all points in the scale were given a label as it is shown that this has a positive effect on the reliability of the results (e.g., Alwin & Krosnick, 1991). To give an example, for the participant's indicated weight in the profile, self-presentation accuracy was measured with the following item: "In your profile, you said that your weight is *participant's answer*. To what extent is the indicated weight accurate for what your current weight really is?". The reliability analysis for the 23 items measuring self-presentation accuracy for each profile item showed good internal consistency ($\alpha = .90$).

3.6.3. Measurement of the other constructs

The majority of items used in this study to measure the remaining constructs in the proposed model were selected and modified from previous studies. Similar to the items measuring self-presentation accuracy, the items were measured using a 7-point Likert scale (1 = strongly disagree and 7 = strongly agree) and every point in the scale was given a label to maximize the reliability and validity of the results.

Perceived observability. The mediator variable perceived observability was measured with a total of three items. Two items are taken and adjusted from Schild et al. (2019), which derived these items directly from the definitions in Ayal et al.'s REVISE framework (2015). One item was developed from Muth, Schwarz, Kunde, and Pfister (2017). Example item: "I felt monitored while creating the online dating profile". The reliability of the three items measuring this construct was rather low, although still acceptable ($\alpha = .54$).

[7] The same study design and data set were used in the authors` other studies about deceptive behavior in online dating (e.g., Hancock & Toma, 2009; Toma & Hancock, 2010; Ellison et al., 2011).
[8] Accuracy was defined in this study as "the degree to which the information reflects the truth about you", which is based on the definition used by Toma et al. (2008).

Perceived ability to observe. The factor analysis (see Appendix C) revealed that the original five items measuring perceived observability did not measure one but two constructs. Therefore, after item examination, it was decided to create an additional mediator variable for the degree to which respondents think online dating providers are capable to observe deception on their online dating platforms. This new variable was measured with two of the five original items for perceived observability, which were inspired by Muth et al. (2017) and Brick, Sherman, and Kim (2017). Example item: "Deception in online dating profiles can be detected by platform providers". Reliability for the two items measuring perceived ability to observe was good (α = .72).

Descriptive normative beliefs. Participants' beliefs about other online dating user's honesty were measured by means of five items. Those items were modified from Bicchieri and Dimant (2019), Nolan et al. (2008), Brutovska et al. (2015), Wang and Lin (2017) and Bicchieri et al. (2014). Example item: "I think that other online dating users often lie in their online dating profile". The reliability analysis of the five items measuring descriptive normative beliefs showed good internal consistency (α = .81).

Moral salience. The mediator variable moral salience was measured utilizing five items, four of which were derived from Schild et al. (2019) and Welsh and Ordóñez (2014). One of the items measuring this concept was newly formulated. Example item: "While creating the online dating profile, I felt morally responsible to be honest". Reliability of the measures for the construct moral salience was high (α = .84)

Online dating experience. Similar to previous studies, online dating experience was measured on five items focusing on the frequency of online dating usage and participation (e.g., the number of people met and talked to on online dating platforms). While one item was specially formulated for the purpose of measuring this construct, four items were extracted and adjusted from already existing studies (Cali, Coleman & Campbell 2013; Caspi & Gorsky, 2006; Drouin et al.,2016; Gibbs, Ellison, & Heino, 2006). Example item: "I frequently met people through online dating platforms". The reliability analysis revealed that the items had a high internal consistency (α = .91).

Involvement in online dating deception. Five items were used to measure the moderator variable involvement in online dating deception. The measures are based on the items utilized in Göckeritz et al. (2010). Example item: "Online dating deception is a big issue in my life". The reliability of the scale for involvement in online dating deception was good (α = .79)

Honesty-humility. This moderator variable was measured by using three[9] of the four items measuring the personality dimension honesty-humility within the 24-item Brief HEXACO Inventory (BHI) as proposed by de Vries (2013). The author states that this inventory is a shorter, yet still highly valid version of the full-length HEXACO Personality Inventory. In the BHI, honesty-humility is measured using only one item per facet (sincerity, fairness, greed-avoidance, modesty) instead of eight items per facet[10]. The honesty-humility items of the shortened HEXACO Personality Inventory were used in this study to minimize the time investments of respondents without substantial loss of scale validity. Example item: "I would like to know how to make lots of money in a dishonest manner". The reliability analysis showed that the three items measuring honesty-humility had rather low but acceptable internal consistency ($\alpha = .59$).

3.7. Participants and recruitment

The selected target audience were adults older than 18 with the ability to speak and understand English. The main source for data collection were local Facebook groups in Germany and the Netherlands with dating or socializing purposes such as "Vrijgezellen Nederland", "Singletreff Münsterland und Umgebung", "Enschede Expats", "Expats in Cologne" or „Mannheim International Community". It was decided to spread the survey in these groups to reach people being similar to those potentially using online dating platforms. However, due to initial difficulties to reach the needed number of valid responses, the survey was also distributed in dating and socializing groups on Facebook being located in other countries than those previously mentioned. In particular, Facebook groups having an international focus or being located in English-speaking countries were targeted to reach respondents with sufficiently high English proficiency[11]. Examples for such Facebook groups are "Meet up in London", "Singles in Las Vegas", "Bologna Erasmus Students" or "English speakers in Salzburg". Also, additional responses were collected using the SONA test subjects pool of the University of Twente. Responses were recorded and collected from 04-05-2021 to 15-06-2021.

[9] One of the four honesty-humility items was excluded from the analysis as factor analysis and Cronbach's alpha showed poor inter-item correlation for this particular item. For an overview of all items, see Appendix B.
[10] In total, the BHI utilizes four items to measure honesty-humility, while in the HEXACO-200, 32 items are used to measure this personality dimension.
[11] Because of this, the majority of the participants actually had nationalities different from Dutch or German (see Table 3).

In total, 1,155 responses were recorded, however, only 299 respondents completed the whole survey[12]. In the analysis, all responses with at least 80% progress and with valid answers for the accuracy measures were included in the study, resulting in a final sample of $N = 308$ participants, which was utilized for analysis. An overview of the demographic attributes in the sample is displayed in Table 3.

To investigate the distribution of participants' demographic characteristics per condition, Chi-square and one-way ANOVA tests were conducted. ANOVA showed that respondents' mean age was not significantly different in each condition, $F(7,268)=.619$, $p = .740$. In addition, chi-square tests revealed that there are no significant relationships of the conditions with gender, $\chi2(14) = 15.83$, $p = .706$, sexual orientation, $2(7) = 33.62$, $p = .535$, educational level, $\chi2(21) = 19.91$, $p = .527$, and nationality, $\chi2(14) = 14.17$, $p = .437$. Regarding relationship status, respondents were not equally distributed between the conditions, $\chi2(7) = 15.10$, $p = .035$. To be precise, the distribution of relationship status seemed to be particularly different in condition 6 (salient surveillance + moral reminder). Here, only half of the respondents were single, while on average, the proportion of singles was two-thirds (see Table 3).

[12] The high drop-out rate is likely a results of the long time needed to complete the survey. The estimated time expenditure (according to the survey distribution tool Qualtrics) for filling in all items was above 20 minutes, which is substantially more than the ideal web survey length of 10 minutes (Revilla & Ochoa, 2017).

Table 3. *Demographic characteristics per condition*

Characteristic	**Condition 1** Control	**Condition 2** Salient Surveillance	**Condition 3** Descriptive Norm	**Condition 4** Moral Reminder	**Condition 5** Salient Surveillance + Descriptive Norm	**Condition 6** Salient Surveillance + Moral Reminder	**Condition 7** Descriptive Norm + Moral Reminder	**Condition 8** Salient Surveillance + Descriptive Norm + Moral Reminder	**Total**
	(N = 37)	(N=34)	(N = 38)	(N=40)	(N=37)	(N=36)	(N=41)	(N=45)	(N=308)
Age	M = 29.29 SD = 6.82	M = 27.41 SD = 6.64	M = 28.55 SD = 9.82	M = 30.27 SD = 13.46	M = 28.70 SD = 7.69	M = 29.48 SD = 10.80	M = 32.03 SD = 13.803	M = 28.72 SD = 9.27	M = 29.29 SD = 6.82
Gender									
Male	27.3 %	33.3 %	27.8 %	12.8 %	37.1 %	29.4 %	30.8 %	11.4 %	25.5 %
Female	72.7 %	63.3 %	72.2 %	84.6 %	62.9 %	67.6 %	66.7 %	84.1 %	72.4 %
Other	-	3.3 %	-	2.6 %	-	2.9 %	2.6 %	4.5 %	2.1 %
Sexual Orientation									
Straight	81.8 %	80.0 %	69.4 %	71.8 %	85.7 %	76.5 %	74.4 %	75.0 %	76.6 %
Gay	3.0 %	3.3 %	2.8 %	2.6 %	2.9 %	8.8%	7.7%	4.5%	4.5%
Lesbian	-	3.3%	-	-	5.7%	-	2.6%	2.3%	1.7%
Bisexual	12.1%	6.7%	27.8%	17.9%	5.7%	14.7%	7.7%	13.6%	13.4%
Asexual	-	3.3%	-	-	-	-	2.6%	-	0.7%
Other	3.0%	3.3%	-	7.7%	-	-	5.1%	4.5%	3.1%
Single*									
Yes	81.8%	73.3%	66.7%	81.6%	68.6%	50.0%	59.0%	56.8%	66.8%
No	18.2%	26.7%	33.3%	18.4%	31.4%	50.0%	41.0%	43.2%	33.2%
Educational Level									
Lower than high school	-	-	-	-	-	-	-	-	-
High school degree	18.8%	20.0%	27.8%	10.5%	20.0%	14.7%	10.3%	22.7%	18.1%
Bachelor´s degree	43.8%	46.7%	38.9%	42.1%	34.3%	23.5%	41.0%	29.5%	37.2%
Master´s degree	34.4%	26.7%	25.0%	47.4%	42.9%	55.9%	41.0%	43.2%	39.9%
PHD	0.3%	0.7%	1.0%	-	2.9%	5.9%	7.7%	4.5%	4.9%
Nationality									
Dutch	18.2%	6.7%	5.6%	10.3%	2.9%	17.6%	17.9%	9.1%	11.0%
German	21.2%	26.7%	13.9%	17.9%	25.7%	8.8%	17.9%	22.7%	19.3%
Other	60.6%	66.7%	80.6%	71.8%	71.4%	73.5%	64.1%	68.2%	69.7%

4. Results

In this chapter, the results of the experiment are described. In the first part, after describing the results of the manipulation check, the outcomes of the statistical tests with regard to the effects (main and interaction) of the interventions on the dependent and mediator variables are presented. Next, the results concerning the relationships between the mediator variables and the dependent variable are described. Furthermore, the influences of the moderator variables are described, which is followed by the results of additional explorative analysis. Finally, in the last part of this chapter, an overview of the model relationships and the tested hypotheses is provided.

4.1. Manipulation check

The manipulation check (at the end of the survey, participants had to indicate which messages were displayed to them before they created their dating profile, see Chapter 3.2.) showed, that only part of the respondents correctly remembered the honesty intervention they were treated with (see Table 4). For instance, in the salient surveillance condition, merely about 42 % of the respondents recognized the corresponding treatment message, while more than 32 % thought to have (also) seen the moral reminder condition and another 32 % indicated not having seen any of the three nudge interventions. Similarly, in the condition in which the treatment consisted of all three honesty interventions, the moral reminder message was remembered the easiest (more than 70 %), while the salient surveillance and descriptive norm treatment was remembered by merely ca. 30 % of the respondents. In fact, the moral reminder message was the one being remembered the most (> 60 % in all corresponding treatment groups), yet, turned out to be also wrongly recognized the most. To give an example, in the control condition, more than 60 % of the respondents thought to have seen the moral reminder message before filling in their online dating profile, while only about 38% indicated to not have seen any of the nudge interventions. This is particularly noticeable when comparing this number with the number of wrongly recognized salient surveillance and descriptive norm messages, which in their non-respective conditions is lower than 13 % for salient surveillance and lower than 7 % for descriptive norm.

Table 4. *Manipulation check (recognized displayed message by condition)*

		Message(s) recognized by respondents			
		Salient Surveillance	*Descriptive Norm*	*Moral Reminder*	*Control*
Condition	**N**	"Each online dating profile is checked by online dating platform providers to ensure	"It is found that the majority of online dating users are completely honest when creating their online dating profile"	"Please be honest while creating your online dating profile".	"None of these messages was displayed"
Condition 1 Control	31				
Percentage		6,45 %	0 %	61,29 %	**38,70 %**
Condition 2 Salient Surveillance	31				
Percentage		**41,94 %**	6,45 %	32,26 %	32,26 %
Condition 3 Descriptive Norm	37				
Percentage		8,10 %	**48,65 %**	29,73 %	21,62%
Condition 4 Moral Reminder	39				
Percentage		12,82 %	2,56 %	**64,10 %**	33,33 %
Condition 5 Salient Surveillance + Descriptive Norm	35				
Percentage		**42,86 %**	**45,71 %**	48,57 %	17,14 %
Condition 6 Salient Surveillance + Moral Reminder	34				
Percentage		**35,29 %**	0 %	**61,76 %**	29,41 %
Condition 7 Descriptive Norm + Moral Reminder	39				
Percentage		12,82 %	**53,85 %**	**61,54 %**	15,38
Condition 8 Salient Surveillance + Descriptive Norm + Moral Reminder	44				
Percentage		**29,55 %**	**29,55 %**	**70,45 %**	13,64 %

Note: N (total) = 290, percentage = % of n per condition
Data of messages that were actually displayed per condition are bold

4.2. Nudge effects on self-presentation accuracy

Before testing the proposed hypotheses, the influences of the three nudge interventions on the outcome variable self-presentation accuracy are investigated. This is done by means of a three-factor between-subjects ANOVA (see Table 5).

Table 5. *Test of between-subjects effects (nudge interventions on self-presentation accuracy)*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Moral Reminder	.175	1	.175	.356	.551
Salient Surveillance	.267	1	.267	.544	.461
Descriptive Norm Message	.010	1	.010	.021	.884
Interactions					
Moral Reminder * Salient Surveillance	.500	1	.500	1.017	.314
MoralReminder * Descriptive Norm Message	.014	1	.014	0.028	.866
Salient Surveillance * Descriptive Norm Message	.239	1	.239	.487	.486
Moral Reminder * Salient Surveillance * Descriptive Norm Message	.010	1	.010	.021	.886
Error	147.452	300	.492		
Total	12924.639	308			

Note: Dependent variable: Self-presentation Accuracy

The results of the three-factor ANOVA showed, with *p*-values being higher than .05, that the surveillance nudge, the descriptive normative message, and the explicit moral reminder had no significant effect on self-presentation accuracy. Also, there are no significant interaction effects found between the three nudge types (*p's* > .05)[13].

4.3. Nudge effects on the mediators

Next, to investigate the effects of the three nudging interventions on the mediator variables perceived observability, descriptive normative beliefs, and moral salience (as well as on the retrospectively created variable perceived ability to observe), multivariate ANOVA was performed (see Table 6).

[13] Shapiro-Wilk-Test, descriptive statistics, and Normality P-P plots revealed that the data of the dependent variable self-presentation accuracy was non-normally distributed (in fact, the data for self-presentation accuracy turned out to be extremely negatively skewed and strongly picked, *M* = 6.44, *SD* = .70, skewness = -2.09, kurtosis = 5.50) resulting in the normality assumption of ANOVA not being met. However, since ANOVA is relatively unaffected by non-normality in the data, especially when sample sizes are more or less equal (Field, 2009; see Table 3), the results of the three-factor ANOVA are still assumed to be valid. Also, an additional three-factor ANOVA was conducted with a log-transformed, more normalized version of the dependent variable self-presentation accuracy, which, however, showed similar significance levels per condition.

Table 6. *Test of between-subjects effects (nudge interventions on mediator variables)*

Source	Dependent variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Moral Reminder	Moral Salience	.234	1	.234	.173	.678
	Perceived Observability	.074	1	.074	.048	.826
	Ability to Observe	3.392	1	3.392	1.755	.186
	Descriptive Normative Beliefs	.271	1	.271	.258	.612
Salient Surveillance	Moral Salience	.118	1	.118	.087	.768
	Perceived Observability	.006	1	.006	.004	.950
	Ability to Observe	.019	1	.019	.010	.920
	Descriptive Normative Beliefs	1.881	1	1.881	1.796	.181
Descriptive Norm Message	Moral Salience	.156	1	.156	.115	.734
	Perceived Observability	4.356	1	4.356	2.823	.094
	Ability to Observe	.038	1	.038	.020	.889
	Descriptive Normative Beliefs	.235	1	.235	.225	.636
Interactions						
Moral Reminder * Salient Surveillance	Moral Salience	.105	1	.105	.077	.781
	Perceived Observability	1.224	1	1.224	.793	.374
	Ability to Observe	.282	1	.282	.146	.703
	Descriptive Normative Beliefs	.311	1	.311	.297	.586
Moral Reminder * Descriptive Norm Message	Moral Salience	.168	1	.168	.124	.725
	Perceived Observability	3.950	1	3.950	2.559	.111
	Ability to Observe	.001	1	.001	.001	.981
	Descriptive Normative Beliefs	.246	1	.246	.235	.628
Salient Surveillance * Descriptive Norm Message	Moral Salience	.017	1	.017	.013	.910
	Perceived Observability	5.496	1	5.496	3.561	.060
	Ability to Observe	.018	1	.018	.009	.924
	Descriptive Normative Beliefs	.854	1	.854	.816	.367
Moral Reminder * Salient Surveillance * Descriptive Norm Message	Moral Salience	.043	1	.043	.032	.858
	Perceived Observability	4.945	1	4.945	3.204	.075
	Ability to Observe	.055	1	.055	.029	.866
	Descriptive Normative Beliefs	.001	1	.001	.001	.974
Error	Moral Salience	391.965	289	1.356		
	Perceived Observability	446.012	289	1.543		
	Ability to Observe	558.461	289	1.932		
	Descriptive Normative Beliefs	302.541	289	1.047		
Total	Moral Salience	9136.183	297			
	Perceived Observability	5783.111	297			
	Ability to Observe	4621.500	297			
	Descriptive Normative Beliefs	3620.920	297			

Also here, the three-factor ANOVA revealed only insignificant outcomes (*p's* > .05) for both the interventions themselves and the interaction effects between the three nudge types on each of the three mediator variables (and the additional mediator ability to observe). Hence, since no significant effects of the three proposed nudge types on the mediating constructs are found, H1a, H2a, H3a, H4a, and H4b are rejected.

4.4. Mediator effects on self-presentation accuracy

A multiple regression analysis was conducted to assess the effect of the mediator variables on the dependent variable self-presentation accuracy (see Table 7)[14].

Table 7. *Effect of mediator variables on self-presentation accuracy*

Regression coefficients

	B	SE	ß	t-value	Sig.
(Constant)	5.803	.233		24.877	.000**
Moral Salience	.152	.031	.280	4.956	.000**
Perceived Observability	-.013	.029	-.026	-.452	.652
Ability to Observe	-.021	.026	-.047	-.802	.423
Descriptive Normative Beliefs	-.012	.035	-.019	-.338	.735

Note: N = 296, **p < .01

Dependent Variable: Self-Presentation Accuracy

The analysis showed that merely about 6.9 % of the variation in the dependent variable self-presentation accuracy can be explained by the linear model including the independent variables moral salience, perceived observability, descriptive normative beliefs, and ability to observe, $R^2 = .069$, $F(4,292) = 6.526$, $p < .001$. Moreover, the regression analysis revealed that there is a significant positive relationship between moral salience and user´s self-presentation accuracy in their dating profiles, $b = .152$, $F(292) = 4.956$, $p < .001$. In fact, while moral salience has a moderate positive effect on self-presentation accuracy, $r = .28$, $p < .001$, the other mediator variables turned out not to be significantly related to the dependent variable ($p > .05$). Based on this, it is concluded that H3b is accepted, while H1b and H2b are rejected.

4.5. Moderator effects

The moderating effects of the three moderator variables online dating experience, involvement in online dating deception, and honesty-humility on the hypothesized relationships are tested by means of moderation regression analysis. To perform such an analysis, it was necessary to mean center the involved variables and to create interaction predictor variables by multiplying

[14] Investigation of the normality plot of residuals and the distribution of the values of the outcome variables versus standardized residuals exhibited heteroscedasticity and non-normality, and hence, the homoscedasticity and normality assumption of multiple regression analysis were not met. In such a case, it is suggested to try transforming non-normally distributed data (Fields, 2009), which, however, resulted in a regression model still violating the previously mentioned assumptions. Therefore, as stated by Fields (2009), the regression model shown in Table 4 can still be (and thus, is) used for interpretation, although one ought to be cautious when generalizing those findings beyond the experimental sample.

the centered moderator variables with the appropriate centered predictor variable (van den Berg, n.d.). Subsequently, for each of the relationships between the nudge interventions and self-presentation accuracy moderator regression analysis with the corresponding centered predictors, centered moderators, and interaction predictor variables were conducted.

First, moderator regression analysis was performed to explore the moderating influence of the three moderators on the main nudging effects on self-presentation accuracy (see Table D1). With *p-values* all at an insignificant level (*p´s* > .05), the analysis revealed that none of the three moderators have any moderating influence on the direct relationships between the three nudge interventions and self-presentation accuracy. Therefore, it can be concluded that H5, H6, and H7 are rejected.

In the next step, to answer RQ2 and to gain additional insights, moderation regression analysis was conducted to investigate the effects of the moderators on the relationships between the nudge interventions and the mediators (see Table D2), as well as the relationships between the mediator variables and the outcome variable self-presentation accuracy (see Table D3). However, also here, mainly insignificant results are found. The results showed that there are no significant moderating effects on any relationship between the mediator variables perceived observability, ability to observe, descriptive normative beliefs, and moral salience, and the dependent variable self-presentation accuracy level (*p´s* > .05). With regard to the effects of the three nudge interventions on the three mediators, only involvement in online dating deception showed to have a significant moderating effect on the relationship between the social norm intervention and the mediator variable moral salience, b = -.214, $F(290)$= -2.044, p = .042, implying that the effect of the descriptive norm message on moral salience is stronger for individuals with low involvement in online dating deception. With a semi-partial correlation of r = -.117, it can be stated that this moderation effect is, however, rather weak. This outcome is confirmed by additional simple linear regression analysis of two separate groups for low (score 1.00 – 3.50) and high involvement (score 3.51 – 7.00), which showed that even for subjects being low in involvement, the social norm message was still an insignificant predictor for moral salience, $F(1,92) = 2.509$, p = .117. Apart from that, no significant effects of any other moderator variable on the predicted relationships between the interventions and the mediators are found (*p´s* > .05).

4.6. Exploratory analysis

In addition to hypothesis testing, explorative analysis was conducted to look into bivariate relationships that go beyond the proposed hypotheses. Hence, in this section, the results regarding direct relationships between self-presentation accuracy and mediators with the moderators and demographic variables are described.

Table 8. *Effect of moderator variables on mediators and self-presentation accuracy*

	Dependent Variable									
Independent Variable	Self-Presentation Accuracy		Perceived Observability		Ability to Observe		Descriptive Normative Beliefs		Moral Salience	
	B	SE	B	SE	B	SE	B	SE	B	SE
(Constant)	5.965	.203	4.651	.450	3.285	.492	3.953	.360	3.631	.391
Honesty-Humility	.067*	.028	-.092	.061	-.020	.067	-.059	.049	.178**	.054
Experience	.003	.021	-.100*	.046	-.025	.050	.089*	.037	.004	.040
Involvement	.029	.029	.106	.064	.152*	.070	-.148**	.051	.201**	.055
R^2 (adjusted)	.012		.016		.007		.030		.067	
F-ratio	2.224		2.571		1.687		4.010*		8.055*	
N	294		290		290		291		294	

Note: *p < .05, **p < .01

Multiple regression analyses (see Table 8) showed that there is a significant positive linear relationship between honesty-humility and self-presentation accuracy. Also, honesty-humility turned out to be positively related to moral salience. Furthermore, the results indicate that online dating experience is significantly negatively related to perceived observability and positively related to descriptive normative beliefs. This implies that experienced online dating users, when compared to inexperienced users, feel less observed when creating their dating profiles and expect other online dating users to be more honest. Finally, it is found that there is a significant positive linear relationship of involvement in online dating deception with ability to observe and with moral salience, but with descriptive normative beliefs, involvement is negatively related, which suggests that individuals being highly involved with online dating deception perceive online dating providers as being able to detect deceptive behavior and are more aware of morality while creating their online dating profiles, and at the same time, expect other online dating users to be less honest.

At last, the impact of demographic characteristics on the mediators and the outcome variable is explored. This is done by means of one-way between-groups ANOVA. Prior to analysis, the demographic variables were recoded into dichotomous variables with two groups

to simplify interpretation and to eliminate groups with insufficiently big sample sizes. The variable nationality remained unchanged with three groups.

ANOVA showed that there is a significant difference between male and female subjects regarding the variables descriptive normative beliefs, $F(1,278) = 10.918$, $p = .001$, with women having lower expectations regarding other online dating users' honesty than men (male: $M = 3.69$, $SD = 1.07$, female: $M = 3.24$, $SD = .97$). Furthermore, it is found that respondents differ regarding self-presentation accuracy, $F(1,274) = 4.469$, $p = .035$, perceived observability, $F(1,271) = 5.403$, $p = .021$, and descriptive normative beliefs, $F(1,270) = 8.077$, $p = .005$, depending on their age. Respondents aged 35 and younger indicated higher levels of self-presentation accuracy ($M = 6.50$, $SD = .50$ vs. $M = 6.30$, $SD = .10$), higher levels of perceived observability ($M = 4.29$., $SD = 1.26$, vs. $M = 3.86$, $SD = .1.22$), and higher levels of descriptive normative beliefs ($M = 3.50$, $SD = 1.04$, vs. $M = 3.01$, $SD = .84$) than respondents aged 36 and older. Furthermore, one way ANOVA showed differences for singles and non-singles regarding their self-presentation accuracy, $F(1,287) = 4.185$, $p = .042$. Descriptive statistics revealed that singles rated they self-presentation-accuracy in the profile generally higher than respondents being in a relationship (singles: $M = 6.52$, $SD = .51$, non-singles: $M = 6.36$, $SD = .76$). Finally, it is found that respondents differed in their beliefs of online dating providers` ability to detect deceptive behavior, depending on their level of education, $F(1,295) = 7.069$, $p = .008$, which were stronger for participants with lower levels of education (high school diploma or lower: $M = 4.15$, $SD = 1.38$, Bachelor or higher: $M = 3.60$, $SD = 1.36$). For the variables sexuality and nationality, no significant differences could be found.

4.7. Hypotheses overview and model results

Here, a summary of the outcomes of the hypothesis testing is presented (Table 9). Furthermore, for visualization, Figure 4. shows a relational model providing an overview of the results based on the conceptual research model.

Table 9. *Results of hypotheses testing*

	Hypotheses	Results
H1a	Salient surveillance is positively related to perceived observability	Rejected
H1b	Perceived observability is positively related to self-presentation accuracy	Rejected
H2a	Descriptive normative messages are positively related to descriptive normative beliefs	Rejected
H2b	Descriptive normative beliefs are positively related to self-presentation accuracy	Rejected
H3a	Explicit moral reminding is positively related to moral salience	Rejected
H3b	Moral salience is positively related to self-presentation accuracy	**Accepted**
H4a	Salient surveillance is positively related to moral salience	Rejected
H4b	Descriptive norm messages are positively related to moral salience	Rejected
H5	The effect of the honesty interventions on self-presentation accuracy is stronger for individuals with high levels of online dating experience than individuals with low levels of online dating experience.	Rejected
H6	The effect of the honesty interventions on self-presentation accuracy is weaker for highly involved individuals than low-involved individuals.	Rejected
H7	The effect of the honesty interventions on self-presentation accuracy is weaker for individuals high in honesty-humility than individuals low in honesty-humility.	Rejected

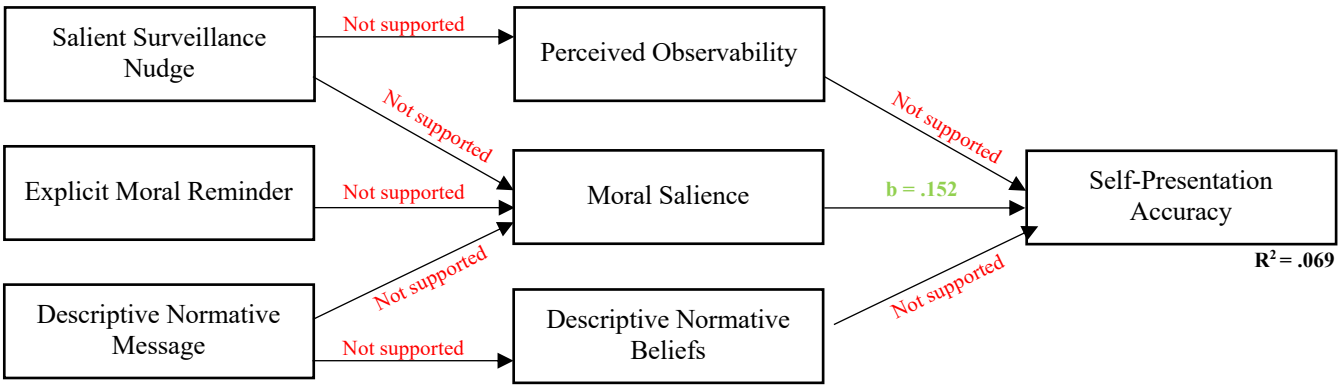

Figure 4. *Research model (with results)*

5. Discussion

In this chapter, the outcome of the experiment is discussed together with research limitations, recommendations for future research as well as academic and practical implications.

5.1. Discussion of the results

The goal of this study was to investigate how three selected honesty nudges influence self-presentation accuracy in users' online dating profiles. The results of the experiment revealed that none of the three nudges had any significant effect on self-presentation accuracy in online dating profiles and on any of the three underlying mechanisms through which they were expected to positively affect the previously mentioned outcome variable. Moreover, no interaction effects between the three nudge interventions and no moderating effects on their relationships with self-presentation accuracy could be observed. Finally, of the three mediating constructs, moral salience turned out to have a significant positive relationship with self-presentation accuracy, while for the other two mediators, no significant effects were found.

First of all, the observed positive relationship of moral salience and self-presentation accuracy is an interesting outcome, indicating that increasing the salience of morality among online dating users helps to promote honesty in their dating profiles. This finding confirms, to some extent, the results of previous research showing that making one mindful of morality (for instance, by means of a moral reminder) has a positive effect on deceptive behavior (e.g., Grym & Liljander, 2017; Mazar et al., 2008). However, it should be stated that in most of this literature, the curbing effect of moral reminding on dishonesty was attributed to that mechanism without actually measuring moral salience or investigating the effect of this mediating construct on dishonesty. In fact, only two studies were found, which measured the impact of moral reminding on peoples' attentiveness toward morality. While Welsh and Ordónez (2014) provide evidence for both the positive effect of moral reminding on cheating behavior as well as for its mediated process via moral standard activation, Schild et al. (2019) could not find any effect of moral reminding[15] on moral salience and dishonesty. The latter is in line with the insignificant outcomes found for the explicit moral reminder investigated in the present study. Therefore, it is doubtful whether moral reminding really triggers the hypothesized underlying mechanism of moral salience or whether other mediating processes

[15] Schild et al. (2014) tried to replicate the results of Welsh and Ordónez (2014) and used the same moral reminder manipulation (a sentence unscrambling task) in their study as their colleagues.

are at play here. Nevertheless, the results of this study provide empirical evidence to assume that high levels of moral salience are, at least in the context of users' provided information in online dating profiles, indeed related to higher levels of honesty, an effect that showed to be robust across different degrees of online dating experience and honesty-humility, and whether an individual is highly involved with the problem of online dating deception or not. Yet, apart from this significant finding, all other proposed hypotheses could not be confirmed. Hence, in the following, it is discussed what might have caused those insignificant outcomes.

At first, one ought to consider that nudges often have rather low effect sizes and it is not uncommon for them to be statistically insignificant. This might be due to various reasons that can vary depending on the type of behavior and context in which the nudges are applied (e.g., strong antecedent preferences, short-term effects, inaccurate understanding of the choice architecture; Sunstein, 2017). Hummel and Maedche (2019) conducted a quantitative review on the effectiveness of nudging and found that only 62 % of nudging interventions show statistical significance (*p*-values of more than .05). Moreover, the median relative effect size of the nudges in those studies accounts only for about 21 % and is, thus, rather small. According to the authors, these numbers are expected to be even lower when taking into account that due to publication bias, many studies with insignificant outcomes and small effect sizes are often not published.

With regard to honesty nudging, such insignificant outcomes are also not unusual. As already stated in the theoretical framework, certain types of honesty enhancing nudge interventions, such as subtle surveillance cues, moral primes, or signatures, more often than not, show inconclusive and non-significant outcomes (e.g., Kristal et al., 2020; Northover et al., 2017; Verschuere et al., 2018). In this study, however, types of honesty nudges were selected that appeared to be particularly promising to increase honesty in online dating, but which, eventually, showed to be insignificant predictors for both self-presentation accuracy and their assigned mediators. Although there are previously, to the author's knowledge, no experiments conducted in which these nudge interventions were tested in contexts similar to the one chosen in this study, there are several examples of studies within various domains which were also unable to identify any positive effect of the chosen honesty nudges. For instance, Zhao et al. (2019) found that their explicit moral reminder to "be honest" did not only fail to decrease dishonesty in a dice-rolling experiment but even promoted cheating among participants. Furthermore, descriptive norm messages showed insignificant outcomes regarding their effectiveness in increasing honesty in honor systems for newspaper sales

(Brudermann, Bartel, Fenzl, & Seebauer, 2015), cheating in mind games (Dimant et al., 2020), tax compliance (Bumenthal, Christian, & Slemrod, 2001) or public broadcasting fee payment (Fellner, Sausgruber, & Traxler, 2013). Nevertheless, due to the previous successful replications of the used honesty nudge types, the contextual causes of the insignificant results in this study ought to be further examined.

One explanation for the ineffectiveness of the three nudging interventions might be that part of their influence on both mediators and self-presentation accuracy has been lost due to the lack of attention participants paid toward the message. It might also be that the message is simply forgotten while creating the dating profile due to the high degree of attentiveness needed to reflect on and answer the profile items. In fact, it is earlier mentioned in literature, that effects of primes and nudges are transient and easily drowned when experimental tasks require lots of time expenditure and consideration (e.g., Frey & Rogers, 2014; Spottswood & Hancock, 2016; Sunstein, 2017). This idea is supported by the results of the manipulation check, which revealed that in most conditions, despite the measures taken to increase alertness (see Section 3.4.), not even half of the participants were able to correctly remember the nudge message they were treated with (see Table 4).

Another cause for the insignificant outcomes regarding the relationship of the three honesty nudging interventions with the outcome variable self-presentation accuracy might be that most people are in fact quite honest when creating their online dating profile (which is indicated by a strong skewness of the data of self-presentation accuracy, $M = 6.44$, $SD = .70$). The mean score for self-presentation accuracy shows, that on average, participants rated the information they provided in their online dating profile as being highly accurate to completely accurate. This makes it possible, that due to the very high level of self-reported accuracy, and thus, the extremely low base rate for dishonesty, not enough room is provided to allow for the three honesty nudges to be effective. Similar explanations were, for instance, given by Kettle et al. (2017) and Kleinlogel et al. (2018) who assigned the ineffectiveness of their honesty nudges to the very low level of deceptive behavior they observed. Interestingly, low degrees of dishonesty appear to be frequently observed in the online dating literature (e.g., Hall et al., 2011) and it is shown that lying in online dating profiles is generally subtle (Ellison et al., 2011; Toma et al. 2008). This is likely a consequence of most online dating users wanting to meet their online correspondents in person and to develop long-term relationships, and thus, the use of outright lies in their profiles is often avoided to not be unmasked as liars and delineate their dating partners (Ellison & Hancock, 2013).

Furthermore, the null effects of the salient surveillance nudge, the descriptive normative message, and the explicit moral reminder might be the result of individual weaknesses of the three honesty nudging manipulations.

Previous research on the influence of direct surveillance and actual observation, such as the placement of security cameras, found strong beneficial effects on honest and prosocial behavior (Gneezy et al., 2018; Jansen et al., 2018; van Rompay, Vonk, & Fransen, 2009). In this study, the salient surveillance nudge was designed in a way that it could be easily implemented on online dating sites. Therefore, this nudge type was presented as a message providing information about surveillance measures of online dating providers, which was also pre-tested within a focus group discussion. However, since the online dating profiles were not created on actual dating platforms, respondents could easily assume that they were not affected by the described surveillance measures, and thus, feelings of being watched by others or by an authority, and fear of consequences of detected dishonesty, such as punishment or negative social evaluation, would not be induced. This idea is also supported by the insignificant results that were found on the effect of the salient surveillance treatment on perceived observability.

The null results related to the effect of the descriptive norm message on self-presentation accuracy are likely due to an inability of the treatment to actually change respondents' beliefs regarding social norm[16]. This was confirmed by this research's results since no significant relationship between the social norm message and descriptive normative beliefs could be found. One reason for the inaptitude of the descriptive norm message to change one's social expectations might be that people´s attitude toward the deceptiveness of online dating users is simply too strong and thus too robust to be changed (Drouin et al., 2016). Also, it is likely that no shift in descriptive normative beliefs did take place due to the source of the social norm information not being trusted enough (Bicchieri & Dimant, 2019). Even so, it is still questionable if a positive effect on self-presentation accuracy would have been observed if the social norm message would have succeeded in changing users' beliefs. Bicchieri (2016) suggests that individuals adjust their behavior if their reference network of people, which, in the context of online dating, are other platform users (see discussion in Chapter 2.4), is expected to also comply with it. Due to the study's artificial setting, it is, however, probable that participants` reference network for behavior change, in this case, would not be online

[16] A similar explanation was provided by earlier research in which null effects of norm-nudges are observed (e.g., Blumenthal et al., 2001; Dimant et al., 2020). Also, strong antecedent preferences and beliefs are generally difficult to be changed and one of the main reasons for nudge ineffectiveness (Sunstein, 2017).

dating users, but other people participating in this experiment. Therefore, even when descriptive normative beliefs regarding online dating users would have changed to the positive, the level of measured dishonesty might still be untouched, since no changes regarding the descriptive normative beliefs of this mechanism´s relevant reference group occurred.

While having proven its effectiveness in enhancing honest behavior in earlier research (e.g., Bucciol & Piovesan, 2011; Pruckner & Sausgruber, 2013), in this study, the explicit moral reminder did not show any effects on self-presentation accuracy in online dating profiles. This insignificant outcome is comparable with the results of Zhao et al. (2019), who even found opposite effects of their explicit request on honesty. Hence, as stated by the authors, based on the notion that there might be differences between how a sender signals certain information and how this information is interpreted by the receiver (Connelly, Certo, Ireland, & Reutzer, 2011), the null results related to self-presentation accuracy might be a consequence of ambiguous interpretation, meaning, while some people might understand the moral reminder as a reason to be honest, others might interpret it as a possibility to be dishonest when creating their profile (Zhao et al., 2019). In addition, the explicit moral reminder (and the other two interventions) failed to significantly influence moral salience. Similar results are found by Schild et al. (2019), which found null results for the effect of an implicit moral reminder on honesty and their measure for the reminding principle, within the REVISE framework by Ayal et al. (2015), on which this study's conceptualization of moral salience is based on. Since they used an implicit moral cue, their treatment might have simply been too subtle to effectively increase both moral salience and honesty. This, however, cannot be said for the explicit honesty request used in this study, which, according to the results of the manipulation check, was also the message most frequently remembered in each condition (see Table 4). Nonetheless, the results also show that even in the control condition, 38.70% of the respondents thought to have seen the explicit moral reminder, which indicates that some respondents, after learning about the real purpose of this study, just expected to have seen such honesty request, raising doubts about whether the moral reminder was really kept in mind by the participants.

Finally, the null results that were found for perceived observability and descriptive normative beliefs ought to be explained. First, the observed small amount of deceptive self-presentation in online dating profiles and thus, the little room for change it provided, might be one reason why the effect of those mediators on the dependent variable turned out to be insignificant. However, this raises the question of why for the mediator moral salience, there was still a significant positive relationship with self-presentation accuracy observed. An

explanation for this might be related to the artificial setting and the high degree of anonymity during the experiment[17] which could have impacted the outcomes in relation to perceived observability and descriptive normative beliefs, but not moral salience. High levels of perceived observability during the profile creation process might have been ineffective to increase people´s honesty in their profile answers since participants knew that they had not to worry about identification, and thus, punishment or allocation of a socially undesired image. This reasoning is also applicable to real-life online dating contexts, since also here high levels of anonymity are possible (e.g., using an anonymous user name and a false or faceless profile picture; Drouin et al. 2016). Furthermore, since the online dating profile was not created on real-life dating platforms, changes in descriptive normative beliefs might have simply not be translated to self-presentation accuracy, since, as discussed earlier, this mediator might not have measured participants' normative beliefs in relation to the appropriate reference network. Moral salience, on the other hand, is a construct being unaffected by individual perceptions of whether the profile felt like being created on an actual dating platform or in an artificial environment, and in both cases, positive effects of high levels of saliency of morality during an honesty task could be expected. Moreover, the influence of moral salience on the measure for self-presentation accuracy could have been amplified due to participants wanting to be consistent in the answers they provided in the survey. This idea is based on Cialdini's principle of Consistency, which implies that people face a personal and interpersonal pressure to stand by and behave in a consistent manner with what they have said or done earlier (Cialdini, 2007). Therefore, it can be concluded that participants, who indicated that there were driven by morality or thought that honesty played an important role while creating the online dating profile, after having learned what the research was really about, might have been prompted to rate the accuracy of their provided information particularly high, disregarding of whether their information was actually accurate or not, in order to stay consistent with what they have previously indicated in the measures for moral salience. For participants who ascribed morality a less important role during the profile creation process, the opposite might have been the case, resulting in the relationship between moral salience and self-presentation accuracy to be particularly strong, especially when comparing it to perceived observability and descriptive normative beliefs.

[17] As described in the methodology section, participants did not have to provide a name or profile photo while creating their fictional dating profile to ensure their privacy (see Chapter 3.5).

5.2. Limitations and future research

There are several limitations associated with the research context and methodology of this study. One limitation is related to the artificial setting in which the experiment was conducted. Previous studies investigating honesty in online dating or messaging researched deception often on the basis of actual dating users' profiles and text messages (Markowitz & Hancock, 2018; Toma et al., 2008). In this study, the honesty treatments had to be implemented before online dating profiles were created to test their effect on self-presentation accuracy in the profiles. Also, constructs of the related honesty nudging mechanisms at work had to be measured immediately after the profiles were created to recognize relevant differences, which would not have been possible with an extended time gap between profile creation and construct measurement. Therefore, it was decided to integrate a fictional online dating creation process into the experiment to make the implementation of honesty nudging treatments and immediate measurement of mediating constructs possible. Although there were various design elements incorporated into the fictional online dating profile to make it seem realistic (see Section 3.5.), which were also discussed in the focus group session, it is still quite likely that part of the respondents did not feel like really creating a dating profile for an actual online dating platform. As a result, certain real-life conditions necessary for the nudge interventions to work might have not been established, such as incentives or payoffs (e.g., having better chances for a date when presenting oneself as being more attractive in their profile) to actually engage in deceptive behavior (Mazar & Ariely, 2006). This might have distorted the results. Moreover, no measure was incorporated in the experiment to test whether participants felt like being on an actual dating platform, which would have been helpful in the interpretation of the study results. Therefore, for future research using a similar artificial experimental design, it is recommended to integrate a measure controlling for the degree to which it was possible to reproduce real-life conditions in the study. Also, to avoid distortion due to an artificial environment, it is suggested to replicate this experiment on an actual online dating platform.

Other constraints are linked to the study's online dating context. First of all, similar to previous research on online dating deception (e.g., Hall et al., 2010; Toma et al., 2008), this study utilized self-reported measures for dishonesty. Although self-reported measures appear to be the appropriate tool to investigate dishonesty in an online dating context (see discussion in Section 3.6.1.), there is still a chance for the outcomes of these measures to be affected by social desirability response, which might have prevented respondents from indicating the full extent of their dishonesty (Paulhus, 2002). This, combined with the fact that lies in online

dating profiles are frequent, but most often have small magnitude (e.g., Ellison & Hancock, 2013; Sharabi & Caughlin, 2019), might result in degrees of online dating deception being so low that detecting significant effects of honesty enhancing nudges is not possible. This is confirmed by the extremely skewed outcomes for self-presentation accuracy, which are observed in this research despite scale adjustments to decrease potential skewness in de data (see Section 4.6.2.), and by the results of comparable studies clearly showing a ceiling effect in the data of their online dating deception measures (Hall et al., 2010; Lundgren & Cornwell; 2010; Toma et al., 2008)[18]. This makes it questionable whether the context of online dating deception is even suitable to test for positive effects of honesty nudges.

Furthermore, the sample used in this study is not entirely representative of an average population of online dating users. The majority of the respondents identify as female (72.4 %), while in reality, the proportion of women among online daters is way lower at 33 % (Statista Research Department, 2021), Also, in one of the conditions. despite randomization, the share of non-singles is significantly higher than in the other conditions. Since, however, there were no significant differences between the experimental conditions observed, it is unlikely that this had an impact on the results. Finally, some respondents were taken from Facebook groups not being about dating, but having a socializing purpose related to getting to know others without the intention to build up romantic relationships. Therefore, part of the sample would normally not have had any reason to create dating profiles or to be on dating platforms, giving them little incentive to be dishonest in their profile. Based on this, future research should be more cautious in the selection of their respondents and should study a sample being a realistic representation of online dating users, preferably consisting solely of actual users of online dating platforms.

This study investigated how three selected honesty interventions affect self-presentation accuracy on online dating profiles, with a special focus on underlying processes. This study was, however, affected by various restrictions. Hence, in retrospect, it is proposed to replicate this research by conducting two or even three independent studies, to create an optimal environment in which both honesty nudges and their underlying processes in the context of online dating can be tested. In the first study, the central mechanisms and general effectiveness of the honesty nudges should be investigated by testing these on experimental paradigms, such

[18] To give some examples, Hall et al. (2010) measured strategic misrepresentation in online dating with a 10-point-likelihood scale (1 = not at all likely; 10 = very likely), showing mean scores per information type ranging from 1.80 to 3.24 with strong skewness and kurtosis, and Lundgren and Cornwell (2001) showed similar skewed data for their variable for misrepresentation in cyberspace (ranging from 0 = no misrepresentation to 1 = misrepresentation) with mean scores per information type between 0.150 and 0.275.

as coin-toss or die-roll tasks, where clear incentives to cheat are provided and different degrees of cheating can easily be measured. Here, measures for dishonesty and underlying constructs should be integrated into the study to ensure the nudge effectiveness and activation of mechanisms. In the following, a second study ought to be performed in which the honesty nudging interventions from the first study are implemented as conditions on real online dating platforms, namely right before new users create their dating profile. Afterward, the degree of deceptiveness in the user profiles is measured by asking these users (who were unknowingly treated with one or more of the nudges before they created their profile) to rate the accuracy of their profile information. To avoid limitations related to the data for self-presentation accuracy being self-reported, an alternative could be to conduct a third study with the same online dating users, where they are asked identical or similar questions as in their profile (e.g., disguised as citizen survey), to determine deception by comparing the survey answers with the information in their profile. Nevertheless, also here, the research would still be not without limitations since the findings related to underlying mechanisms from the first study cannot simply be applied to an online dating context without considering possible differences linked to the varying circumstances in which the experiments were conducted. Also, as the third study requires user identification to assign the survey answers to the right dating profile, issues with respect to participant privacy and anonymity are likely to occur.

At last, based on the significant outcome that was found regarding the relationship between moral salience and self-presentation accuracy on dating profiles, future investigation should study how this principle can be effectively triggered. Since explicit requests to "be honest" did not suffice to significantly increase the saliency of honesty as a moral standard, special attention ought to be played toward how stronger manipulations can be designed to effectively influence moral saliency. Also, it would be interesting for future research to examine the role of individual motivations to use online dating platforms, as those were not considered in this research. It is shown that while the majority of users are on dating websites and apps to find an exclusive romantic partner (54%), there are also many who use them to have something fun or interesting to do (34%), to have casual sex encounters (26%), or aim at making platonic, non-romantic connections (25%; Statista, 2021). It may be expected that dishonesty in dating profiles and the influence of honesty nudges and their underlying mechanisms vary depending on the type of motivation to use these platforms (e.g., users who do not plan to meet their match in person or look for one-night stands are probably more inclined to lie about themselves than

those searching for face-to-face meetups; Ellison & Hancock, 2013), and thus, online dating motivations should also be explored in the future.

5.3. Theoretical implications

There are several theoretical contributions made by this research. First, this research adds to the growing honesty nudging literature and is, next to Schild et al. (2019) one of the few actually integrating measures for the underlying processes expected to be responsible for the honesty enhancing force of these manipulations. Therefore, the study and its outcomes provide interesting input for upcoming research in this field, especially when studying honesty manipulations in relation to perceptions of observability, social norm beliefs, and saliency of moral standards.

To the author's knowledge, this research is also the first to study honesty nudges in relation to online dating deception. Although having mainly insignificant outcomes, which raises doubts on the effectiveness of honesty nudges in an online dating context, this research still provides valuable insights on processes being responsible for higher and lower degrees of inaccuracies in online dating profiles. In particular, the results related to moral salience lead to the assumption that deception in online dating is deflected when honesty is a salient moral standard. Moreover, the extensive discussion in Chapter 3.6.1. gives direction and a better understanding of how to measure honesty, especially when studying this in an online dating setting or other similar contexts, such as social networking services.

Furthermore, this research contributes to the literature on honesty-humility, and, with the significant relationship being found between this variable and self-presentation accuracy, confirms previous investigations showing a curbing effect of honesty-humility on dishonest behavior (e.g., Kleinlogel et al., 2018). In addition, it challenges the 24-item Brief HEXACO Inventory by de Vries (2013), as factor analysis showed that one of their four proposed items for measuring honesty-humility turned out to be insufficiently correlated to the other three to be loaded into the common factor, which makes it questionable whether their proposed more compact measurement of that construct is, in fact, reliable.

The insignificant results of this study provide empirical evidence that honesty manipulations related to salient surveillance, descriptive norm, and moral reminding are ineffective in decreasing dishonest self-presentation in online dating profiles. These outcomes stand contrary to Ellison and Hancock's (2013) proposal of using honesty interventions to curb

deceptiveness in dating profiles. Hence, it appears that more research is required to understand the degree to which honesty nudges can be used in online dating to fight lying. Moreover, these results show that previous findings regarding the effectiveness of certain honesty nudges are not simply applicable to any chosen context, and one ought to carefully consider contextual factors when designing manipulations and experiments in which honesty nudges and related principles are tested.

5.4. Practical implications

Despite the insignificant outcomes related to the proposed honesty nudges, this research still provides some contributions from a practical point of view. The study revealed that self-presentation accuracy seems to be positively influenced by high levels of moral salience and honesty-humility. Moreover, additional explorative analysis found similar results regarding the demographic variables age and relationship status, which showed that those being younger are more honest than older people, and singles are more honest than people being in a relationship. This information could be used by providers of online dating platforms to guarantee higher levels of honesty among their users. To give some examples, online dating providers could emphasize certain values on their platforms, which are associated with honesty-humility (e.g., sincerity or fairness). Also, although there is still a need to confirm positive effects of manipulations of moral salience in an online dating context, online dating providers could still try to implement stronger triggers of morality, as it is shown that the saliency of honesty as a moral standard is a positive predictor of self-presentation accuracy in dating profiles. Finally, online dating providers could improve honesty among users by creating platforms specifically meant for target groups being in a relationship (e.g., people having an open or polygamy relationship) or being older than 35. This might take away certain incentives for being dishonest and would allow for supplementary surveillance measures on these platforms, ensuring honesty among those particularly tending to be less honest. Nevertheless, due to this researches' various limitations, practitioners should be cautious not to over-interpret its results.

6. Conclusion

Lies on online dating platforms, although often small, significantly impact how relationships between potential partners develop, and when taking extreme forms (e.g., creating entirely fake identities), it might have serious consequences for other users, both emotionally and economically (Sharabi & Caughlin, 2019; Simmons & Lee, 2020). Therefore, obtaining a better understanding of how honesty on dating platforms can be increased is important. This study was an attempt to investigate the degree to which three honesty nudges, a salient surveillance nudge, a descriptive norm message, and an explicit moral reminder, affect self-presentation accuracy on online dating profiles. Here, a special focus was placed on the mediating constructs being responsible for the expected positive effects of the three selected honesty interventions.

The results revealed that none of the proposed manipulations succeeded in affecting self-presentation accuracy, nor any of the suggested mediating constructs, which raises doubts about whether honesty nudges can be successfully implemented in an online dating context. Also, no proof was found for interaction and moderating effects. Nonetheless, the analysis revealed that individuals who indicated high degrees of moral saliency while creating their dating profile, self-presented themselves more accurately in their profile. This significant result, should, however, due to various research limitations, be interpreted with caution. Future research should investigate how stronger manipulations of moral salience can be designed and should focus on how honesty nudges can be studied on real-life online dating platforms.

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Appendix A: Experiment survey

Intro General Information

In this study, it is investigated how people create profiles on online dating platforms. Therefore, you are first asked to create an online dating profile and subsequently, you have to answer some questions. This will take approximately 15-20 minutes of your time. Thanks a lot for your help!

Intro Online Dating Profile

Imagine you want to use an online dating platform (e.g., Tinder) to meet new people, go on dates and maybe even find the love of your life. For this, you have to create an online dating profile. This will be done in the following step. At the end, you can download your profile so you can use it on actual dating platforms.

Navigate to the next page, read the displayed message and click on "continue" to start.

Treatment Message (*participants were assigned to one of the eight conditions before creating their profile)*

Condition 1

Click on "continue" to create your online dating profile.

Condition 2

It is **VERY IMPORTANT** to read and keep in mind the following message:

Each online dating profile is checked by online dating platform providers to ensure authenticity.

Condition 3

It is **VERY IMPORTANT** to read and keep in mind the following message:

It is found that the majority of online dating users are completely honest when creating their online dating profile.

Condition 4

It is **VERY IMPORTANT** to read and keep in mind the following message:

Please be honest while creating your online dating profile.

Condition 5

It is **VERY IMPORTANT** to read and keep in mind the following message:

Each online dating profile is checked by online dating platform providers to ensure authenticity.

It is found that the majority of online dating users are completely honest when creating their online dating profiles.

Condition 6

It is **VERY IMPORTANT** to read and keep in mind the following message:

Each online dating profile is checked by online dating platform providers to ensure authenticity.

Please be honest while creating your online dating profile.

Condition 7

It is **VERY IMPORTANT** to read and keep in mind the following message:

It is found that the majority of online dating users are completely honest when creating their online dating profile.

Please be honest while creating your online dating profile.

Condition 8

It is **VERY IMPORTANT** to read and keep in mind the following message:

Each online dating profile is checked by online dating platform providers to ensure authenticity.

It is found that the majority of online dating users are completely honest when creating their online dating profiles.

Please be honest while creating your online dating profile.

Items Online Dating Profile

General Information

To find good matches for you, you first have to provide some general information.

1a. I am a _____ (e.g., man,woman, other, etc.)

1b. I am interested in _____(e.g., men, women, men & women, other, everyone, etc.)

1c. I am ___ years old.

1d. Where do you live?

Physical appearance

Other users on our online dating platform want to know how you look like. Please answer the following questions about your physical appearance.

2a. Please describe your physical appearance in a few sentences.

2b. How tall are you (in cm)?

2c. What is your weight (in kg)?

2d. How does your body look like? Shortly describe your body type.

2e. What is your eye color?

2f. What is your hair color?

2e. Is there anything else to tell about your physical appearance? Desribe your looks a bit more in a few words.

Personality

3a. Before going on a date with you, people want to know a bit about your personality. Shortly describe some of your personality traits, qualities, etc.

Social status

For some people on the dating platform, it is important know about a potential date`s social background, like their level of education or what they do for a living. Please provide some informaton about that.

4a. What is your level of education?

4b. What is your occupation/profession? Shortly explain what you do for a living.

4c. What is your yearly net income in euro?

Relationship history

People use our online dating platform for various reasons. Some want to meet new people and want to make new friends, while others want to go on dates and find a partner. Therefore, you should tell a bit about your relationship history and goals.

5a. What is your relationship status?

5b. What are your relationship goals? Shortly explain what you are looking for in a relationship.

5c. Do you have children? How many?

Habits and interests

For people to know if they would like to meet you, they have to know a bit about your interests, habits, and beliefs. Please tell about those in the following questions.

6a. What are your hobbies (e.g., sports, going out with friends, etc.)? Explain in a few sentences what you do in your free time.

6b. What else are you interested in? Describe your interests in a few words.

6c. How often do you smoke?

6d. How often do you drink?

Beliefs

7a. What are your religious beliefs? Please describe them in a few words.

7b. What are your political views? Shortly describe your political viewpoints.

End of the dating profile (with closing text)

You just created your dating profile. That's great! Now I would like to ask you some more questions.

Variable Measures (In this step, the items measuring the variables were asked)

Items Moral Salience

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)[a]

1. While creating the online dating profile, I thank that it was important to act morally.
2. I could hardly justify dishonest behavior when creating the online dating profile.
3. While creating the online dating profile, I felt morally responsible to be honest.
4. While creating the online dating profile, I had the feeling that I should be honest.
5. While creating the online dating profile, I was driven by morality.

Intro self-presentation accuracy measures & confidentiality agreement

In the following, you will see each answer you gave in the online dating profile, and I would like to ask you to indicate to which degree the answers you provided there really reflect the truth about you. **Please, be really honest here**. **A truthful contribution regarding the accuracy of your answers in your dating profile is of great importance for my research.**

Note that all your responses are completely anonymous and confidential. You can stop the questionnaire at any time and your participation is voluntary. All the data that is collected will only be used for the purpose of this research. No personal or identifying information will be stored. For questions, etc. you can contact me at t.lanznaster@student.utwente.nl.

Button: "I agree and want to continue"

***Items Self Presentation Accuracy (*answers in the profile were shown and participants had to rate their accuracy)**

General information

1a. In your profile, you said that you are a *participant´s answer in profile item 1a.*

How **accurate** (***= the degree to which the information reflects the truth about you***) is the information you provided about your gender when you think about what your gender really is? (1 = Not at all accurate, 2 = Slightly accurate, 3 = Somewhat accurate, 4 = Moderately accurate, 5 = Accurate, 6 = Highly accurate, 7 = Completely accurate)[b]

1b. In your profile, you said that you are interested in *p*articipant's *answer in profile item 1b* .
How accurate is the information you provided about the gender(s) you are interested in when thinking about which gender(s) you really like?

1c. In your profile, you said that you are *participant's answer in profile item 1c* years old.
If you are honest, to what extent is the indicated age accurate to what your age really is?

1d. In your profile, you said that you live in *participant's answer in profile item 1d.*
If you are honest, to what extent is the indicated place accurate to where you really live?

Physical appearance

2a. In your profile, you said that your height is *participant's answer in profile item 2a* cm.
If you are honest, to what extent is the indicated height accurate to how tall you really are?

2b. In your profile, you said that your weight is *participant's answer in profile item 2b* kg.
To what extent is the indicated weight accurate for what your current weight really is?

2c. In your dating profile, you described your body type as followed: *participant's answer in profile item 2c..*
To what extent is the description of your body type accurate for how your body really looks like?

2d. In your dating profile, you described your eye color as followed: *participant's answer in profile item 2d.*
To what extent is the indicated eye color accurate to your real eye color?

2e. n your dating profile, you described your hair color as followed: *participant's answer in profile item 2e.*
To what extent is the indicated hair color accurate to your real hair color?

2f. In your dating profile, you described your body type as followed: *participant's answer in profile item 2f.*
To what extent is the description of your body type accurate for how your body currently looks like?

2g. In your dating profile, you gave the following additional description regarding your physical appearance: *participant's answer in profile item 2g.*
To what extent is the additional information you provided about your physical appearance accurate to how you really look like?

Personality
3a. In your dating profile, you described your personality as followed: *participant's answer in profile item 3a.*
If you are honest, how accurate is the description of your personality you provided in the online dating profile when thinking about how your personality really is?

Social status
4a. In your dating profile, you said the following about your level of education: *participant's answer in profile item 4a.*
To what extent is the information you provided about your education accurate to your real educational experience?

4b. In your dating profile, you said the following about your occupation/profession: *participant's answer in profile item 4b.*
To what extent is the information you provided about your occupation/profession accurate for what you are really currently doing for a living?

4c. In your dating profile, you said the following about your annual net income: *participant's answer in profile item 4c.*
To what extent is the indicated income accurate for what you are really earning at the moment?

Relationship history
5a. In your dating profile, you said that your relationship status is: *participant's answer in profile item 5a.*
To what extent is the relationship status you indicated here accurate to what your current relationship status really is?

5b. In your dating profile, you said the following about your relationship goals: *participant's answer in profile item 5b.*
When reading your indicated relationship goals, how accurate are these when thinking about what you really wish for in a relationship?

5c. In your dating profile, you said the following about the number of children you have: *participant's answer in profile item 5c.*
To what extent is the information about you having (no) children accurate to your real family situation?

Habits & Interests
6a. In your dating profile, you said the following about your hobbies: *participant's answer in profile item 6a.*
How accurate are the hobbies you described there when thinking about what you are really doing in your free time?

6b. In your dating profile, you said described your interests as followed: *participant's answer in profile item 6b.*
When being honest, how accurate are the interests you described when thinking about what you are really interested in?

6c. In your dating profile, you said the following about how often you smoke: *participant's answer in profile item 6c.*
How accurate is the indicated amount of how often you smoke when you think about how much you truly smoke?

6d. In your dating profile, you said the following about how much you drink: *participant's answer in profile item 6d.*
How accurate is the indicated amount of how much you drink when you think about how much alcohol you truly drink?

Beliefs
7a. In your dating profile, you described your religious beliefs as followed: *participant's answer in profile item 7a.*
How accurate is the information you provided about your religion when you think about what your religious beliefs really are?

7b. In your dating profile, you described your political views as followed: *participant's answer in profile item 7b.*
How accurate is the information you provided about your political views to what your political opinions really are?

Items Perceived Observability **(In the following step, the items for the remaining variables were asked)**

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)[a]

1. I felt monitored while creating the online dating profile.
2. I felt anonymous while creating the online dating profile.
3. Deception in online dating profiles can be detected by platform providers.
4. I (would) feel watched when being on online dating platforms.
5. Providers of online dating platforms are able to observe dishonesty on their dating apps/sites.

Items Descriptive Normative Beliefs

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)[a]

1. Many online dating users tell lies on their online dating profile.
2. I think that other online dating users often lie in their online dating profile.
3. I think that a typical online dating user is completely honest when creating their online dating profile.
4. To my knowledge, many users on online dating platforms fill in their onine dating profile honestly.
5. Think about the other users you find on online dating apps (might) you use. Do you think that the majority of them is completely honest in their online dating profile?

Items Online Dating Experience

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)

1. I frequently use online dating platforms (e.g., Tinder, Lexa, Grinder, Relatieplanet, Parship, Her, Elitedating, etc.).
2. I frequently met people through online dating platforms.
3. I spend a considerate amount of time on online dating platforms.
4. I frequently talk to other people on online dating platforms.
5. I have experience with online dating.

Items Involvement in Online Dating Deception

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)

1. I often think about dishonesty on online dating platforms.
2. Online dating deception is a big issue in my life.
3. I care about the topic of dishonesty on online dating platforms.
4. I am knowledgeable about the issue of online dating deception.
5. I think dishonesty on online dating deception is an important issue.

Items Honesty-Humility

Please indicate how much you agree with the following statements (1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree)

1. I find it difficult to lie
2. I would like to know how to make lots of money in a dishonest manner
3. I want to be famous
4. I´m entitled to special treatment

Manipulation check

Which of the following messages was displayed to you before you filled in your profile? (*You can select more than one.)*

- o "Each online dating profile is checked by online dating platform providers to ensure authenticity.
- o "It is found that the majority of online dating users are completely honest when creating their online dating profile.
- o "Please be honest while creating your online dating profile."
- o None of these messages was displayed

Intro (Demographics)

In this study it was investigated to which degree people tend to be dishonest when presenting themselves in an online dating profile. Therefore, to ensure the results validity, the actual purpose of this study could not be disclosed to you before you created your online dating profile. Now, a few remaining questions regarding your demographics are asked which I ask you to answer honestly. Thank you!

Items Demographics

1.What is your gender? (*Male, female, other)*
2. What is your sexual orientation? (*Straight, gay, lesbian, asexua, bisexual, other)*
3. Are you single? *(Yes, no)*
5 What is your educational level? *(Lower than high school, high school degree, bachelor´s degree, master´s degree, PHD)*
5. What is your nationality? (Dutch, German, other)
4. What is your age? (1-100)

End of survey (closing text was shown)

You reached the end of this experiment. Well done!

I really want to thank you for participating in my study. This study was about the effect of honesty nudges on deceptive self-presentation in online dating profiles.

I kindly ask you to not discuss the actual purpose and the content of this research with anyone who is participating or might participate in this research to ensure the validity of the results. For any questions, feel free to contact me at t.lanznaster@student.utwente.nl.

If you wish to receive your dating profile and your responses as an Adobe PDF file, click below on "Download PDF".

Thanks again for your help!

Appendix B: Original variable measures with sources

Variable Item	Source
Self-presentation Accuracy[a]	Measurement based on Toma et al. (2008)
General information	
1a. In your profile, you said that you are a *participant's answer.* How **accurate** (= ***the degree to which the information reflects the truth about you***) is the information you provided about your gender when you think about what your gender really is?	
1b. In your profile, you said that you are interested in *p*articipant's answer. How accurate is the information you provided about the gender(s) you are interested in when thinking about which gender(s) you really like?	
1c. In your profile, you said that you are *participant's answer* years old. If you are honest, to what extent is the indicated age accurate to what your age really is?	
1d. In your profile, you said that you live in *participant's answer.* If you are honest, to what extent is the indicated place accurate to where you really live?	
Physical appearance	
2a. In your profile, you said that your height is *participant's answer* cm. If you are honest, to what extent is the indicated height accurate to how tall you really are?	
2b. In your profile, you said that your weight is *participant's answer* kg. To what extent is the indicated weight accurate for what your current weight really is?	
2c. In your dating profile, you described your body type as followed: *participant's answer.* To what extent is the description of your body type accurate for how your body really looks like?	
2d. In your dating profile, you described your eye color as followed: *participant's answer* To what extent is the indicated eye color accurate to your real eye color?	
2e. In your dating profile, you described your hair color as followed: *participant's answer* To what extent is the indicated hair color accurate to your real hair color?	
2f. 1a. 1a. In your dating profile, you described your body type as followed: *participant's answer.* To what extent is the description of your body type accurate for how your body currently looks like?	
2g. In your dating profile, you gave the following additional description regarding your physical appearance: *participant's answer.* To what extent is the additional information you provided about your physical appearance accurate to how you really look like?	
Personality	
3a. In your dating profile, you described your personality as followed: *participant's answer.* If you are honest, how accurate is the description of your personality you provided in the online dating profile when thinking about how your personality really is?	
Social status	
4a. In your dating profile, you said the following about your level of education: *participant's answer.* To what extent is the information you provided about your education accurate to your real educational experience?	
4b. In your dating profile, you said the following about your occupation/profession: *participant's answer.* To what extent is the information you provided about your occupation/profession accurate for what you are really currently doing for a living?	
4c. In your dating profile, you said the following about your annual net income: *participant's answer.* To what extent is the indicated income accurate for what you are really earning at the moment?	
Relationship history	
5a. In your dating profile, you said that your relationship status is: *participant's answer.* To what extent is the relationship status you indicated here accurate to what your current relationship status really is?	
5b. In your dating profile, you said the following about your relationship goals: *participant's answer.* When reading your indicated relationship goals, how accurate are these when thinking about what you really wish for in a relationship?	
5c. In your dating profile, you said the following about the number of children you have: *participant's answer.* To what extent is the information about you having (no) children accurate to your real family situation?	
Habits & Interests	
6a. In your dating profile, you said the following about your hobbies: *participant's answer.* How accurate are the hobbies you described there when thinking about what you are really doing in your free time?	

6b. In your dating profile, you said described your interests as followed: *participant's answer.* When being honest, how accurate are the interests you described when thinking about what you are <u>really</u> interested in? 6c. In your dating profile, you said the following about how often you smoke: *participant's answer.* How accurate is the indicated amount of how often you smoke when you think about how much you <u>truly</u> smoke? 6d. In your dating profile, you said the following about how much you drink: *participant's answer.*How accurate is the indicated amount of how much you drink when you think about how much alcohol you <u>truly</u> drink?	
<u>Beliefs</u>	
7a. In your dating profile, you described your religious beliefs as followed: *participant's answer.*How accurate is the information you provided about your religion when you think about what your religious beliefs <u>really</u> are? 7b. In your dating profile, you described your political views as followed: *participant's answer.* How accurate is the information you provided about your political views to what your political opinions <u>really</u> are?	
Perceived Observability[b]	
1. I felt monitored while creating the online dating profile.	Schild et al. (2019)
2R. I felt anonymous while creating the online dating profile.	Schild et al. (2019)
3. Deception in online dating profiles can be detected by platform providers.[c]	Brick, Sherman & Kim (2017)
4. I (would) feel watched when being on online dating platforms.	Muth et al. (2017)
5. Providers of online dating platforms are able to observe dishonesty on their dating apps/sites.[c]	Muth et al. (2017)
Descriptive Normative Beliefs[b]	
1R. Many online dating users tell lies on their online dating profile.	Bicchieri & Dimant, (2019)
2R. I think that other online dating users often lie in their online dating profile.	Nolan et al. (2008)
3. I think that a typical online dating user is completely honest when creating their online dating profile.	Brutovska et al. (2015)
4. To my knowledge, many users on online dating platforms fill in their onine dating profile honestly.	Wang & Lin (2017)
5. Think about the other users you find on online dating apps (might) you use. Do you think that the majority of them is completely honest in their online dating profile?	Bicchieri, Lindemans & Jiang, (2014)
Moral Salience[b]	
1. While creating the online dating profile, I thank that it was important to act morally.	Schild et al. (2019)
2. I could hardly justify dishonest behavior when creating the online dating profile.	Schild et al. (2019)
3. While creating the online dating profile, I felt morally responsible to be honest.	Welsh & Ordonez (2014)
4. While creating the online dating profile, I had the feeling that I should be honest.	Newly formulated
5. While creating the online dating profile, I was driven by morality.	Welsh & Ordonez (2014)
Online Dating Experience[b]	
1. I frequently use online dating platforms (e.g., Tinder, Lexa, Grinder, Relatieplanet, Parship, Her, Elitedating, etc.).	Drouin et al. (2016)
2. I frequently met people through online dating platforms.	Gibbs, Ellison & Heino (2006)
3. I spend a considerate amount of time on online dating platforms.	Caspi & Gorsky (2006)
4. I frequently talk to other people on online dating platforms.	Newly formulated
5. I have experience with online dating.	Cali, Coleman & Campbell (2013)
Involvement in Online Dating Deception[b]	
1. I often think about dishonesty on online dating platforms.	Göckeritz et al. (2010)
2. Online dating deception is a big issue in my life.	Göckeritz et al. (2010)
3. I care about the topic of dishonesty on online dating platforms.	Göckeritz et al. (2010)
4. I am knowledgeable about the issue of online dating deception.	Göckeritz et al. (2010)
5. I think dishonesty on online dating deception is an important issue.	Göckeritz et al. (2010)
Honesty-Humility[b]	
1. I find it difficult to lie**	De Vries (2013)
2R. I would like to know how to make lots of money in a dishonest manner	De Vries (2013)
3R. I want to be famous	De Vries (2013)

Note: R = reversed, *Was used for the measurement of perceived ability to observe; **Was excluded from the analysis due to insufficient inter-item reliability

a. 7-point accuracy scale: 1 = Not at all accurate, 2 = Slightly accurate, 3 = Somewhat accurate, 4 = Moderately accurate, 5 = Accurate, 6 = Highly accurate, 7 = Completely accurate). The same 7-point accuracy scale was used for all items measuring self-presentation accuracy

b. 7-point Likert scale: 1 = Strongly disagree, 2 = disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree, 7 = Strongly agree). The same 7-point Likert scale was used for all items measuring perceived observability, descriptive normative beliefs, moral salience, online dating experience, involvement in online dating, and Honesty-Humility.

c. These items were used to measure the retrospectively created variable perceived ability to observe

Appendix C: Factor analysis

Rotated Component Matrix							
Items	Component						
	1	2	3	4	5[a]	6	7
Online Dating Experience, Item 2: I frequently met people through online dating platforms.	0,890						
Online Dating Experience, Item 3: I spend a considerate amount of time on online dating platforms.	0,869						
Online Dating Experience, Item 4: Please indicate how much you agree with the fo I frequently talk to other people on online dating platforms.	0,865						
Online Dating Experience, Item 1: I frequently use online dating platforms (e.g., Tinder, Lexa, Grinder, Relatieplanet, Parship, Her, Elitedating, etc.).	0,860						
Online Dating Experience, Item 5: I have experience with online dating.	0,708						
Moral Salience Item 4: While creating the online dating profile, I had the feeling that I should be honest.		0,851					
Moral Salience, Item 3: While creating the online dating profile, I felt morally responsible to be honest.		0,841					
Moral Salience, Item 5: While creating the online dating profile, I was driven by morality.		0,782					
Moral Salience, Item 1: While creating the online dating profile, I think that it was important to act morally.		0,749					
Moral Salience Item 2: I could hardly justify dishonest behavior when creating the online dating profile.		0,660					
Descriptive Normative Beliefs, Item 5: Think about the other users you find on online dating apps you (might) use. Do you think that the majority of them is completely honest in their online dating profile?			0,789				
Descriptive Normative Beliefs, Item 4: To my knowledge, many users on online dating platforms fill in their online dating profile honestly.			0,764				
Descriptive Normative Beliefs, Item 3: I think that a typical online dating user is completely honest when creating their online dating profile.			0,747				
Descriptive Normative Beliefs, Item 2: I think that other online dating users often lie in their online dating profile.			0,740				
Descriptive Normative Beliefs, Item 1: Many online dating users tell lies on their online dating profile.			0,739				
Involvement in Online Dating Deception, Item 3: I care about the topic of dishonesty on online dating platforms.				0,811			
Involvement in Online Dating Deception, Item 1: I often think about dishonesty on online dating platforms.				0,731			
Involvement in Online Dating Deception, Item 5: I think dishonesty on online dating deception is an important issue.				0,722			
Involvement in Online Dating Deception, Item 2: Online dating deception is a big issue in my life.				0,630			
Involvement in Online Dating Deception, Item 4: I am knowledgeable about the issue of online dating deception.				0,620			
Perceived Observability, Item 5: Providers of online dating platforms are able to observe dishonesty on their dating apps/sites					0,797		
Perceived Observability, Item 3: Deception in online dating profiles can be detected by platform providers.					0,757		
Honesty-Humility, Item 3: I want to be famous						0,783	
Honesty-Humility Item 2: I would like to know how to make lots of money in a dishonest manner						0,695	
Honesty-Humility, Item 4: I´m entitled to special treatment						0,695	
Perceived Observability, Item 1: I felt monitored while creating the online dating profile.							0,759
Perceived Observability, Item 2: I felt anonymous while creating the online dating profile							0,713
Perceived Observability, Item 4: I (would) feel watched when being on online dating platforms.							0,586

Appendix C Continued

Eigenvalue	4.68	3.36	3.19	2.48	1.63	1.41	1.26
Explained Variance	16.70	12.00	11.40	8.84	5.82	5.06	4.50
Cronbach´s alpha (α)	.91	.84	.81	.79	.72	.59	.54

Note: a. The items loaded into this factor are used to measure the additional variable perceived ability to observe

Appendix D: Moderator regression analyses

Table D1. *Moderator effects (nudge interventions on self-presentation accuracy)*

Moderator	Independent Variable	B	SE	ß	t	Sig.
Experience	Moral Reminder	.042	.043	.087	.974	.331
	Salient Surveillance	.029	.043	.054	.667	.505
	Descriptive Norm Message	-.009	.043	-.019	-.214	.831
Involvement	Moral Reminder	.065	.055	.107	1.188	.236
	Salient Surveillance	.023	.054	.035	.427	.670
	Descriptive Norm Message	.018	.054	.028	.325	.745
Honesty-Humility	Moral Reminder	-.058	.056	-.093	-1.027	.305
	Salient Surveillance	-.014	.056	-.022	-.251	.802
	Descriptive Norm Message	-.075	.055	-.115	-.1.361	.175

Dependent Variable: Self-Presentation Accuracy, N = 294

Table D2. *Moderator effects (nudge interventions on mediators)*

		Dependent Variable							
		Perceived Observability		Ability to Observe		Descriptive Normative Beliefs		Moral Salience	
Moderator	Independent Variable	t	Sig.	t	Sig.	t	Sig.	t	Sig.
Experience	Moral Reminder	.582	.561	-.484	.629	.628	.530	1.443	.150
	Salient Surveillance	.190	.849	-.885	.377	.866	.387	.657	.511
	Descriptive Norm Message	2.117	.035	.364	.716	.489	.625	-.911	.363
Involvement	Moral Reminder	2.233	.026	-.553	.580	.248	.805	.118	.906
	Salient Surveillance	.148	.882	1.857	.064	1.501	.135	.975	.330
	Descriptive Norm Message	-.588	.557	.017	.987	.441	.660	-2.044	.042*
Honesty-Humility	Moral Reminder	-.019	.985	-.026	.980	1.160	.247	-.964	.336
	Salient Surveillance	1.425	.155	1.286	.199	-.173	.863	1.328	.185
	Descriptive Norm Message	.747	.456	.850	.396	-.070	.944	.566	.572

Note: N = 294, *p < .05

Table D3. *Moderator effects (mediators on self-presentation accuracy)*

Moderator	Independent Variable	B	SE	ß	t	Sig.
Experience	Moral Salience	-.014	.016	-.049	-.868	.386
	Perceived Observability	-.019	.017	-.068	-1.150	.251
	Ability to Observe	-.033	.027	-.024	-.403	.687
	Descriptive Normative Beliefs	-.010	.021	-.028	-.476	.634
Involvement	Moral Salience	.001	.020	.002	.032	.974
	Perceived Observability	-.010	.021	-.030	-.498	.619
	Ability to Observe	-.027	.017	-.093	-1.578	.116
	Descriptive Normative Beliefs	-.045	.024	-.108	-1.849	.065
Honesty-Humility	Moral Salience	-.032	.020	-.090	-1.569	.118
	Perceived Observability	-.004	.022	-.010	-.172	.863
	Ability to Observe	-.005	.018	-.018	-.303	.762
	Descriptive Normative Beliefs	-.001	.027	-.003	-.051	.959

Dependent Variable: Self-Presentation Accuracy, N = 294