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Put your best face on: Investigating men and women's deceptive and strategic presentations on the dating app Tinder

Master's thesis in Psychology

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Kunnskap for en bedre verden

Sammendrag

Tinder vokser i popularitet for hver dag som går, og har i dag over 66 million brukere verden over. Med et nettbasert spørreskjema, rekrutterte vi 1342 deltakere i et norsk utvalg for å undersøke hvordan menn og kvinner potensielt lyver og bedrar på den populære dating-appen. Ut i fra et evolusjonært perspektiv, fant vi at kvinner løy mer enn menn på trekk som omhandler fysisk attraktivitet. Derimot fant vi ingen støtte for at menn lyver mer på trekk som kvinner er funnet å foretrekke (f.eks ambisjoner, økonomisk og sosial status). Våre resultater og post-hoc-analyser antyder at Tinder først og fremst er en visuell app, hvor vi mistenker at de som har høyere 'mate-value' på ikke-fysiske trekk vil føle at Tinder ikke rettferdiggjør deres attraktivitet, til tross for deres intensjoner i å vise de. Derfor, må videre forskning i større grad separere ikke-fysisk og fysiske trekk, slik at vi videre kan forstå hvordan menn og kvinner oppfatter deres potensialer på Tinder. Til slutt fant vi at de som er lav i attraktivitet på de ikke-fysiske trekkene var mindre sannsynlig til å inkludere disse trekkene i profilen sin, i frykt for umiddelbar avvisning (sveip til høyre). Vi tror og mener, at dette er funn som underbygger andre funn, som har koblet 'mate preference priority model' og speed-dating sammen (Li et al., 2013).

Abstract

Tinder is a growing dating app in popularity with over 66 million users worldwide. In a Norwegian sample ($N = 1342$), we investigated deceptive behavior on the popular dating app using a self-report online questionnaire. In line with evolutionary hypotheses, we predicted that women lied more than men on facial appearance. However, in contrast to our predictions, we did not find men to predict more than women on traits which are more desirable for women (e.g., ambitions; economical standing; social status). Instead, we also found men to mainly lie about physical appearance, but in addition, include more info about the non-physical trait. Our findings and post-hoc analyses suggests that Tinder primarily is an visual app and we suspect that those higher in mate value on the non-physical traits feel that Tinder serves them an injustice by not fully emphasizing their positive traits, despite their intentions to do so. Thus, future research needs to separate these two aspects to a larger degree, and how men and women potentially perceive their potential within Tinder. Lastly, we discovered that those low in non-physical traits were less likely to disclose information about such traits, possibly in fear instant rejection. We believe this findings corroborate other studies, linking the mate preference priority model and speed-dating together.

Forord

Denne oppgaven er skrevet som en avsluttende del av min mastergrad. Og som markerer at min tid som student ved NTNU er over.

Med god hjelp fra Leif Edward Ottesen Kennair og Mons Bendixen, ble hypoteser utformet og undersøkelsen planlagt. Vi diskuterte oss frem til design og hvilke instrumenter som skulle benyttes. Datainnsamlingen ble gjennomført i mars 2021, hvor all innhenting, transformering, rensing og analysing av data ble gjort av meg i Stata.

Jeg vil rette en takk til Mons Bendixen som har vært en god sparringspartner i de statistiske analysene, ingenting er som en god samtale rundt regresjoner. Videre vil jeg takke Leif Edward Ottesen Kennair. Han har med sin Hawaii-bakgrunn på zoom bidratt med verdifulle tilbakemeldinger. Og når fagstoffet måtte ned barnenivå, ga han gode forsøk på fotballanalogier, med Joey Barton i hovedrollen.

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Trondheim, Mai 2021

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1 Introduction

Mating is a human universal. In most of all discovered societies globally, humans form some marriage during their lifespan (Lundberg, Pollak & Stearns, 2016; Price & Vandenberg, 1980). However, openness and recognition towards casual sex have become more common in western cultures. Also, meeting new romantic partners has changed vastly; it has become increasingly usual to seek out mates on alternative platforms before meeting face to face. As such, along with technological development, we have seen a shift from newspaper advertisements in the late 1900s to the first encounter between people occurring online. Today, more than one out of ten Americans use the latter to search for a mate (Statista, 2021).

Online dating denotes the online services that offer a platform on which its members can flirt, chat or fall in love. With the introduction of smartphones, online dating quickly became a new norm in our daily lives. One of the most commonly used apps is Tinder, which has over 66 million users worldwide (Reuters, 2021) and 55 billion matches (Tinder, 2021). Tinder is a location-based app where a person can choose whether to see men, women, or both. Then swipe left (like) or right (reject), depending on whether one finds the person attractive or not. In the public discourse, Tinder is to some extent viewed as a “sex app”, with evidence that those with unrestricted sociosexuality more likely to use the app (Botnen et al., 2018; Sevi et al., 2018). However, studies have shown that users also use the app to initiate more long-term relationships (LeFebvre, 2017; Timmermans and Courtois, 2018).

The current study investigates the intersexual and intrasexual behavior of men and women on Tinder within the theoretical framework of evolutionary psychology (EP). Researchers within the evolutionary perspective suggest that men and women exhibit different preferences and motivations and further attract mates differently due to evolved psychological mechanisms over time. Researchers have discovered evidential support for cross-cultural gender differences within short- and long-term preferences (Buss, 1989; Buss & Schmitt, 1993; Schmitt, 2005; Walter et al., 2020). These differences are also prevalent in more egalitarian countries such as Norway (e.g., Grøntvedt & Kennair, 2013; Kennair et al., 2009; Bendixen & Kennair, 2016). The evolutionary perspective predicts the pattern of men and women's deceptive and promotive tactics within online dating. Since men and women no

more often seek mates via their mobile phones, we wish to investigate if the same patterns are present within Tinder users.

The theory of sexual selection provides a framework for understanding human mating strategies (Darwin, 1871). The traits we possess are determined by which of our ancestors survived and successfully passed on their genes. Natural selection is the process of individuals and organisms adapting to their environment and thus surviving and producing more offspring. Sexual selection is natural selection arising through preferences by one sex for specific characteristics in the other. Therefore, individual differences in desire are often studied in the context of adaptive problems met by the ancestral man and woman. Men and women prefer different characteristics because they face various challenges, costs, and risks. The most apparent difference is that women risk pregnancy for nine months after sexual intercourse, while men have the opportunity to spread their genes more widely through impregnating several women at once. Among the majority of mammals, the female carries the burden of obligatory parental investment through gestation, child-bearing, and postpartum care. At a minimum level, the female is, therefore, the sex investing more in offspring. Triver's parental investment theory (1972) proposes that, across species, the investing sex will, through selection, be more choosy and possess stronger preferences for their mating partners because greater reproductive costs are associated with indiscriminate mating and greater reproductive benefits resulting from choosiness. For men, the sex with lesser investment, the costs of discriminating mating will be lower, and benefits will be more significant. Thus, they meet other adaptive problems, namely through sexual variety and sexual access.

Sexual strategies theory (Buss & Schmitt, 1993) identifies two primary context-specific mating contexts: short-term and long-term mating. Long-term mating refers to extended courtship, devoting resources over time, and romantic emotions. Short-term refers to brief sexual encounters. The strategy pursued is based on various factors such as personal attractiveness; parental influences; and sex ratio in the local mating pool (Gangestad & Simpson, 2000). Both men and women throughout evolutionary history have pursued short-term and long-term relationships. Men will more often than women seek short-term relationships, being the less investing sex (Trivers, 1972; Buss & Schmitt, 1993). Due to evolutionary adaptations, men, compared to women, have a greater desire for short-term partners, a more considerable amount of short-term relationships, and need less time to consent to sexual intercourse (Schmitt, Shackelford & Buss, 2001). In addition, men and women also exhibit different preferences, evolved through looking for cues to guide

discriminating mates who are not reproductive. For example, men have cross-culturally set to prioritize women's physical attractiveness in both short-term and long-term mating strategies (Buss, 1989; Lippa, 2007; Thomas et al., 2020; Walter et al., 2020). This is because of the combination of pregnancy, only a limited number of gametes, and fertility which, relative to men, decreases rapidly with age (Arnocky, 2016). Therefore, men would have to correctly identify fertile and healthy women by assessing cues in physical appearance, a cue to signal youth.

In contrast, ancestral women faced the adaptive problem of finding men who could devote resources and protection. Therefore, women will prioritize men that show cues to resource holding potential and physical formidability (height and strength; Buss & Schmitt, 1993). Hence, preferences of one sex become what opposite-sex members compete to embody. Same-sex members become rivals vying for the same resources to overcome similar adaptive problems that impact survival and reproductive success (Arnocky & Davis, 2020; Buss, 1989).

Due to intersexual selection, men and women will compete with same-sex individuals over different traits to gain sexual access to attractive mates of the opposite sex (intrasexual competition). Women are expected to compete over aspects of their physical appearance to signal youth, health, femininity, and fertility. At the same time, men are expected to compete over cues showing potential resources (money and status) and physical formidability. When competing with same-sex competitors to acquire the best possible partner, the intrasexual process involves humans utilizing different tactics to influence the intersexual choice. Two of these are competitor derogation and self-promotion (Bleske-Rechek & Buss, 2006; Schmitt & Buss, 1996). Self-promotion involves amplifying and displaying desired attributes that serve effectively if it reliably presents, enhances, exaggerates, or fakes the kinds of traits the opposite sex predictably finds attractive. Competitor derogation attempts to reduce potential mates' perception of same-sex competitors as attractive mates (Schmitt & Buss, 1996). The current study mainly examines intrasexual behavior within self-promotion tactics. From an evolutionary perspective, self-promotion behavior is predicted to vary in unique but patterned ways across culture and time by self-promoting attributes deemed attractive. Furthermore, based on sexual strategies theory (Buss & Schmitt, 1993) and Trivers' (1972) parental investment theory, the mating context is essential when assessing the efficiency of self-promotion and competitor derogation. Traits that might prove effective in a short-term context could render someone less attractive in a long-term context (Schmitt & Buss, 1996; Bendixen & Kennair, 2015). Also, the specific mating context is influenced by

sex. The same tactics used by women might not be as effective when implemented by men in short-term relationships (e.g., enhancing their facial looks to appear younger). Schmitt & Buss (1996) found evidence supporting that women's self-promotion revolves more closely around aspects of their physical appearance. In contrast, men's intrasexual behavior focused on promoting status, economic standing, and physical strength. The findings have later been replicated by Bendixen & Kennair (2015) in a sample of Norwegian undergraduates. Appearance enhancement behavior can be understood as a form of self-promotion which serves to increase one's mate value relative to same-sex rivals competitively. Among other things, appearance enhancement exploits the sensory biases and creates a supernormal stimulus (eliciting a stronger response than the stimulus for which it evolved). Different types of appearance-enhancement tactics could be makeup, tanning, dieting, physical activity, clothing, hair styling, and cosmetic procedures (i.e., plastic surgery; botox). Although both men and women use these tactics, it would be reasonable to predict systematic differences between men and women. For example, women tend to use more cosmetics and beauty products than men, which helps them appear younger, more fertile, feminine, and attractive. Further, compared to men, women have expressed more interest in spending time and money buying and using cosmetic products, even when there are more challenging economic times (see Davis & Arnocky, 2020 for a review). In general, makeup is used to manipulate facial cues men have evolved to find attractive. However, there is mixed evidence to suggest a link between cosmetics and reduced susceptibility to sickness (Arnocky, Bird, & Perilloux, 2014). One could also hide their facial imperfections and be perceived as healthy by tanning their skin (Lefevre, Ewbank, Calder, von dem Hagen & Perrett, 2013).

Men and women also use clothing differently to present themselves as more attractive relative to other same-sex competitors. For example, women wear higher heels (longer legs and lumbar curvature; Lewis et al., 2017; Prokop & Švancárová, 2020); sexually provocative clothing (signaling potential opportunity and enhance sexual attractiveness; Arnocky, 2016; Arnocky & Valliancourt, 2017); and in a historical perspective, women have used clothes to reduce their waist-to-hip ratio, by using corsets (Etcoff, 1999; Steele, 2001). Although women, to a greater degree than men, devote more money and time to shopping for clothes, men also use clothing to increase their mate-value in attributes shown to be desired by women. Men could buy expensive name-brand clothing to signal status and establish physical dominance (Otterbring, Ringler & Gustaffson, 2018). Further, adolescent boys and men invest in apparel to increase their self-confidence and attractiveness in line with local cultural ideals, such as clothing that makes one appear more popular, lean, and muscular (Frith & Gleeson,

2004; Hargreaves & Tiddemann, 2006). Women desire tall and broad-shouldered, strong men, which signals masculinity and dominance (Dixson, Dixson, Bishop & Parish, 2010; Frederick et al., (2007). Within the intrasexual behavior of body enhancement, researchers have found men to overestimate the importance of muscularity for attractiveness and the degree to which women desire a muscular mate (Lei & Perett, 2020). In contrast, women value and overestimate thinness far more than boys and men (Li, Smith, Griskevicius, Cason & Bryan, 2010; Lei & Perett, 2020).

Lastly, both men and women - but for the most part women - report undergoing and holding positive attitudes towards invasive, risky, and expensive cosmetic procedures to increase their physical attractiveness (ISAPS, 2019; Calogero, Pina, Park & Rahemtulla, 2010; Dubbs et al., 2017; Holliday & Carnie, 2007). To increase their bargaining hand on the mating market, men and women target different areas to augment their bodies to be more attractive. Women do breast augmentation and breast lifts - to appeal for men's desire for medium to large and symmetrical breasts, a cue for fecundity or lactational capacity (Dixson et al., 2011; Fink et al., 2014); and liposuction to reduce the WHR, a cue for fertility, parity, health and pregnancy status (Bovet, 2019; ISAPS, 2019). Men report having liposuction and plastic surgery for more toned and muscular body shape (Sarwer, Cerand & Gibbons, 2007). Moreover, cosmetic procedures are shown to be a successful strategy to increase mate value, as researchers found that American women who underwent surgery to reduce their WHR were rated as more attractive subsequently (Singh & Randall, 2007).

Both men and women devote their energy towards short-time and long-time mating strategies. Mating effort denotes the energy used to attract, compete for and retain desired mates (Rowe, Vazsonyi & Figueredo, 1997; Brase & Guy, 2004). Short-term mating effort may be reflected in a person's sexual history, sex drive, and intentions to pursue sexual activity with different partners. While mating effort towards long-term is reflected through investment in one's current partner, utilizing a greater frequency on mate retention tactics (Gangestad & Simpson, 2000). A recognized operationalization of the two strategies has been developed through the construct of sociosexuality (SOI), first introduced by Kinsey (Kinsey et al., 1948), describing the individual differences in men and women's willingness to engage in uncommitted sexual relationships. A unidimensional self-report measure was introduced (SOI; Simpson & Gangestad, 1991), which later was revised into the three components: sexual desire, attitudes, and behavior (Penke & Asendorpf, 2008). Sexual behavior shows how a person, though his lifespan, has directed his or her mating effort towards a long-term or short-term strategy. Where higher values of unrestricted sociosexuality reflect a more

promiscuous tendency, restricted sociosexuality reflects a person with a more monogamous mating strategy. Sexual attitudes are the evaluative disposition towards uncommitted sex (Penke & Asendorpf, 2008). Several factors influence sexual attitudes, such as cultural, traditional, and institutional ones (chastity; religious commandments; marriage systems; Gangestad, Haselton & Buss, 2006). Sociosexual desire shows to what extent a person has sexual fantasies in a partner that one has no committed romantic relationship. Sexual desire is a clear motivational state and is seen as more concrete than a general sexual desire. Studies have shown universal gender differences in all of the three components, with the most considerable differences within sexual desire (Lippa, 2009; Schmitt, 2005).

The current study explores how SOI influences the gender differences in self-promotion and if peers are giving an impression on Tinder, which differs from the true one (i.e., deceptive behavior). If a person pursues a short-term or long-term relationship should affect how a person strategically constructs their profile. For instance, those who seek a short-term strategy would be more willing to engage in deceptive behavior to obtain a larger pool of potential mates through matches. At the same time, those pursuing long-term relations may be more motivated to present themselves more realistically, as deceptive profiles could sabotage further relationship development. Only a few studies have investigated the role of SOI in the light of online dating and, more precisely, dating apps such as Tinder. One assumption is that unrestricted sociosexuality could influence a person to seek new arenas to meet short-term mates. Sevi & Eskenazi (2017) found that low sexual disgust and unrestricted sociosexuality predicted Tinder as an app for casual sex. Botnen, Grøntvedt, Bendixen & Kennair (2017) found evidence that unrestricted SOI predicted using picture-based mobile dating apps such as Tinder and further confirmed that men, more than women, expressed a desire for sex as a reason for using Tinder.

Additionally, SOI is believed to enhance intrasexual behavior in men and women. Women with unrestricted SOI report engaging more frequently in appearance-enhancement (Bleske-Rechek & Buss, 2006). Women are also more likely to undergo costly and potentially dangerous appearance-enhancement such as cosmetic surgery (Batres, Porcheron, et al., 2018; Bradshaw et al., 2019). To our knowledge, there are no studies that explicitly have linked sociosexuality directly to lying and deceptive behavior. Still, Ranzini & Lutz (2017) did find those who used Tinder for hook-ups to report more deceptive behavior.

We also wish to investigate the role of the Dark triad traits. An evolutionary perspective to the dark triad posits that the traits might involve a cheater strategy (Jonason et al., 2014; Jonason & Webster, 2012; Mealey, 1995), where Narcissism, Psychopathy, and Machiavellianism are

linked to different forms of dishonesty. In short, narcissists tend to have a sense of entitlement and seek admiration, attention, prestige, status, and self-aggrandizement; Machiavellianism is defined by its manipulative nature and cold approach to others; and subclinical psychopathy is characterized by high impulsivity and thrill-seeking and linked with the lack of empathy, neuroticism, and anxiety which might help a person in achieving one's goals through adverse conditions (Taylor & Armor, 1996). Thus, these traits and the characteristics embodied within them do not facilitate a long-term relationship strategy. Instead, given the exploitative nature of the dark triad, they are better suited for a short-term strategy (Jonason, Norman, Webster & Schmitt, 2009). Jonason, Lyons, Baughman & Vernon (2014) found that Psychopathy and Machiavellianism predicted telling more lies, where psychopathy was linked to telling lies for no reason, and Machiavellianism linked to white lies. On the other hand, Narcissism was linked to lies associated with self-gain and self-reported skills in lying. Within the intersexual and intrasexual domain, the authors found that Machiavellianism was linked to intersexual competition tactics, including appearance, sincerity, sexual intentions, and involvement. Narcissism was linked to intersexual deception tactics of dominance and appearance and intrasexual deception tactics of intensity and popularity. They did not find any interaction with gender, but men told more lies related to intrasexual promiscuity and intensity. In contrast, women told more intersexual lies about their appearance than men. Psychopathy fully mediated the relationship between sex and intrasexual deception about promiscuity. A problem when lying on Tinder could be that one also has to take into account the risk of being exposed when meeting up. Nevertheless, Collings & Stukas (2008) showed that higher scores of Narcissism were associated with fewer problems with enhancing specific characteristics about themselves even when held accountable and having to justify their ratings afterward.

Since information is presented via the digital platform, there are more opportunities to control how one presents oneself. There is evidence that young men, compared to women, emphasize their creativity, skills, and resources through their profiles on Facebook and other social networking sites; while women conversely promote their physical appearance (Piazza & Bering, 2009; Haferkamp, Eimler, Papadakis, & Kruck, 2012; Mehdizadeh, 2009). Further, men and women show deceptive behavior in line with the other sex has evolved to desire. In summary: men lie about their height (higher), personal income, and status; while women lie about their height (lower), weight, and physical appearance (Hancock & Toma, 2009; Toma, Hancock & Ellison, 2008; Abramova, Bauman, Krasnova & Buxmann, 2016; Schmitz, Zillman & Blossfield, 2013;). The latter is arguably the most consistent finding, implicating

that when information is limited, physical attractiveness becomes an essential cue (Hancock & Toma, 2009; Abramova et al., 2016; Schmitz, Zillman & Blossfield, 2013). However, there is little evidence to suggest that men and women lie about their age, despite this being a clear preference for both within evolutionary psychology. One argument is that the samples are often based on students in their twenties, so they do not need to lie about their age.

The literature suggests that men and women promote and lie about different traits, which corresponds to the preferences of the opposite sex (Buss & Schmitt, 1993; Davis & Arnocky, 2020; Schmitt & Buss, 1996). However, there is no consensus on how to operationalize such behavior. Some use an independent panel to judge appearance and discrepancies (Hancock & Toma, 2009; 2010), others measured deceptive behavior through more explicit questions (Jonason et al., 2014). While some experiments (Tso, Hsieh & Chiu, 2013). Others have neither formulated hypotheses nor discussed findings from an evolutionary perspective (Ranzini & Lutz, 2010; Tso, Hsieh & Chiu, 2013). In the current study, we present a new suggestion for the operationalization of deceptive behavior within online dating; using self-report data, we seek to test if we can find systematically deceptive behavior in participants' past experience.

1.1 Aim of the study

The aim of the current study is two-fold: First, we want to investigate if men and women differ in intersexual and intrasexual deceptive behavior on Tinder. Further, we wish to see if sociosexuality and the Dark triad traits moderate the potential gender differences. Secondly, we also wish to investigate, if deemed not deceptive, whether those with low mate value on certain traits choose not to disclose this information.

The study was pre-registered at the Open Science forum before accessing the data, and any analysis was carried out. In this study, we set out to test five of the pre-registered hypotheses.

1.2 Hypotheses

H1 - Men more than women will report deceptive behavior within traits found desirable by women - including economic standing, ambitions, social status, and height. (Bendixen & Kennair, 2015; Schmitt & Buss, 1996; Davis & Arnocky, 2020; Buss & Schmitt, 1993).

H2 - Women, more than men, will report deceptive behavior within traits found desirable by men - including facial appearance, body appearance, and age. (Bendixen & Kennair, 2015; Schmitt & Buss, 1996; Davis & Arnocky, 2020; Buss & Schmitt, 1993).

H3 - Due to their exploitative nature - we hypothesize that the traits on D3 will enhance the primary gender effect in H1 and H2.

H4 - We also predict that unrestricted sociosexuality will enhance the gender-specific intrasexual behavior in H1 and H2

H5: Participants with lower scores of a self-perceived mate value in real life will be less likely to disclose information about the corresponding trait on Tinder

2 Method

2.1 Participants

A total of 1629 participants answered the questionnaire. In order to increase the homogeneity of the sample, respondents who did not state their sex ($n = 5$); nominated themselves as non-heterosexual ($n = 117$); and 50 years and older ($n = 8$) were excluded from further analysis. Also, those who reported never using the app were also removed ($n = 122$). The sample data was inspected for invalid responses by identifying uni- and multivariate outliers and straightliners (Krosnick, 1991; Couper et al., 2013). The latter, a common problem within the survey methodology, were identified by investigating those with zero variation in responses on the different test batteries. Those with either invariant or unlikely large variation (e.g., 1, 7, 1, 1, 7) were identified and removed ($n = 18$). Uni- and multivariate responses that could be potentially influential observations were carefully investigated via several criteria such as standard deviations ($> \pm 3 SD$); studentized residuals; leverage ($> .05$); Cook's distance ($D > 4/N$); and DFBETAS ($2/\sqrt{k/n}$). In total, 20 observations were identified and removed after exceeding one or several of the criteria. Additionally, responses with extremely high/low mate-value means were investigated and removed ($n = 11$).

The final eligible sample consisted of 1343 participants; 922 women and 421 men (31%). Participants were aged between 18 and 49 ($M = 25$, $SD = 5$ for both sexes). Around one-third reported being in a committed relationship (30%, $n = 403$), while nearly one in ten reported being in an 'undefined' relationship (9%, $n = 122$), and 61% reported being single at the time filling out the questionnaire ($n = 818$). In terms of educational level, 458 (34%) reported finishing up to three years of college/university; 303 (23%) reported finishing four years of college or more; 121 (9%) reported the possession of a certificate of apprenticeship or journeyman's letter; 34% reported only finishing elementary ($n = 41$) or high school ($n = 419$). The distribution of current and former Tinder users was fairly equal with 52% being current users ($n = 697$) and 48% having used Tinder earlier ($n = 642$).

2.2 Procedure

The data was collected during March 2021. Participants were recruited using a snowballing method. A link to an online survey was distributed via student groups, lectures, and social media. The majority of the sample ($n \approx 900$) was collected through a humor account related to Tinder on Instagram with around 100k followers. The respondents did not

get any reward for taking part in the study. They were informed that they could also terminate their participation at any point and contact info was posted on the first and last page in case of inquiries. The questionnaire was uploaded to Nettskjema, which does not track IP addresses, thus maintaining anonymity for the participants. Further, the questionnaire did not involve any sensitive questions and therefore did not require an application via Norwegian Centre for Research Data (NSD).

2.3 Measurements

Sociosexual orientation inventory revised (SOI-R)

Sociosexual orientation was assessed with the revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008). SOI-R possesses three subscales that correspond to facets of sociosexual orientation. A 9-point Likert scale is used and higher numbers indicate a more unrestricted sociosexual orientation (e.g., a greater frequency of casual sex, positive attitudes towards casual sex, and a greater number of spontaneous sexual fantasies). Items scored were averaged to form three subscales and one overall scale. The sociosexual behavior subscale (SOI behavior; $\alpha = .76$) reflects an individual's past uncommitted sexual activity; the sociosexual attitudes subscale (SOI attitudes, $\alpha = .79$) reflects an individual's beliefs about uncommitted sexual activity; the sociosexual desire subscale (SOI desire; $\alpha = .84$) reflects an individual's interest in uncommitted sex. An overall sociosexual orientation score (SOI-total; $\alpha = .82$) was also obtained. Due to a computational error during the crafting of the online questionnaire, one option was missed in the desire component and only had 8 points, where the option "*ca. one time a week*" was not included. Thus the SOI-total was computed by standardized scores of all three sub-scales. The Norwegian version of SOI-R has been used in prior studies (e.g., Botnen et al., 2019; Grøndtvedt et al., 2020), and therefore did not need any translation.

Mate value

To assess the participant's self-perceived mate value in person, in their Tinder profile, their match's profile, and after being on a date, we combined two formerly constructed instruments from Haselton (2003) and the Mate value inventory (MVI; Kirsner et al., 2003). From Haselton (2003) we used the anchors 1 (*well below average*) and 7 (*well above average*) and the initial questions being asked: "*Compared with others you know at the same age and your own gender,*" and four items (e.g., "*... how attractive do you find your body*"; "*...how do you find yourself attractive as a long short-term partner*"). We also added six items (*ambition, economical status, health, social, intelligence and humor*) from Kirsner

et al. (2013) and giving them the same nature of the question formulation (“...*how ambitious have you described yourself*”). The reason we did not implement all 17 items from Kirsner et al, is because we believed that Tinder, in general, is not able to give sufficient detail to describe for example how generous and a man is. To ensure this, two separate focus groups of five women and four men were recruited to discuss which items were able to measure features in one’s personal profile and the profile of potential “matches”. Additionally, due to the respondents filling in the current measurement four times, too many items would potentially mean losing participants mid-way due to the questionnaire being too long. When rating their Tinder profile the nature of the initial question was “*In your Tinder profile - compared to others you know at the same age and your own gender,...*” with the items “...*how ambitious have you presented yourself?*”, as when rating the Tinder match the sound of the questions were “...*how ambitious has the person described itself as*” with here as well below/above average as semantic extreme points. Both questionnaires have been translated and used in prior Norwegian samples earlier (Bendixen, Kennair, Biegler & Haselton, 2019; Botnen et al., 2018).

Dark triad

For measuring the three traits of the dark triad, Narcissism, Psychopathy, and Machiavellianism, The Dirty Dozen was implemented (Jonason & Webster, 2010). The 12-item questionnaire was chosen to avoid a too-long questionnaire. The dark triad possesses three components: Narcissism (“*I tend to want others to pay special attention to me*”), Machiavellianism (“*I tend to manipulate others to get my way*”), and Psychopathy (“*I tend to lack remorse*”). The questionnaire uses a five-point Likert scale, with each dimension consisting of four items. A confirmatory factor analysis was conducted to validate the factor structure. The model showed acceptable fit ($\chi^2 = 561.108$, $df = 51$, $p < .001$, RMSEA = .079 (.073; .085), CFI = .90, TLI = .87). The three components Cronbachs α values were acceptable but only the Machiavellianism scale was over .70 (Narcissism, $\alpha = .60$; Machiavellianism, $\alpha = .77$; Psychopathy, $\alpha = .66$). All 12 items together had $\alpha = .80$. Although coefficients over .70 indicate good reliability, values over .60 are acceptable (Kline, 1999). Additionally, Cronbachs α could be influenced by the number of items included, and more items either way gives a better alpha, and opposite with less (Cortina, 1993). Narcissism had the highest mean score of 2.84 ($SD = 0.65$), with similar scores between Psychopathy ($M = 2.11$, $SD = 0.76$) and Machiavellianism ($M = 2.05$, $SD = 0.78$). The overall mean was 2.33 ($SD = 0.56$).

2.4 Statistical procedures

All the analyses were carried out in Stata 16.1. Due to a severe number of multiple comparisons and, not to mention, multiple models being fitted to the same data, the results should be interpreted carefully, with no p -value nor alpha-level corrected. It would deem impossible to give a precise correction when the analysis goes beyond the concept of a post-hoc test with multiple comparisons after an ANOVA. Instead, we encourage to take effect sizes into account when assessing a significant effect.

For our pre-registered hypotheses we performed six regressions to analyze hypotheses 1 and 2, using a differential score, which was computed by subtracting participants' reported mate value on Tinder from their own perceived mate value in real life. A negative score indicates that the participants have presented themselves as more attractive on a certain trait within their Tinder profile. For hypotheses 3 and 4 we used a two-stage approach, with main effects in model 1, and interaction effects in model 2. Lastly, we applied eight logistic regressions to analyse hypothesis 5.

Statistical assumptions for all regressions were checked in with the *regcheck*-package in Stata. There were no signs of violating the assumptions of non-normality, heteroskedasticity, or colinearity. However, in some models, assumptions of independent residuals looked to be an issue. In conclusion, all regression was run with robust standard errors.

3 Results

3.1 Hypothesis 1 and 2

To test hypotheses 1 and 2, we predicted the differential score between mate value real-life and mate-value tinder. The differential scores were computed by subtracting the participants' reported mate value in real life from their reported mate value on their Tinder profile.

Table 1

Paired t-test between mate value real life and respective mate value in Tinder profile for the whole sample.

Mate Value	Real life	Profile	Difference	95% CI	<i>T</i>	<i>N</i>
	<i>M (SD)</i>	<i>M (SD)</i>				
Ambitions	4.68 (1.28)	4.05 (1.18)	0.63	[0.54; 0.71]	14.45***	917
Face	4.37 (1.24)	4.65 (1.14)	-0.27	[-0.31; -0.22]	-11.76***	1 289
Body	3.99 (1.48)	4.24 (1.34)	-0.25	[-0.27; -0.19]	-9.51***	1 149
Economical standings	4.28 (1.53)	3.98 (1.21)	0.30	[0.19; 0.41]	5.12***	603
Humor	5.32 (1.18)	4.76 (1.33)	0.57	[0.48; 0.65]	12.70***	975
Health	5.04 (1.28)	4.73 (1.20)	0.31	[0.23; 0.39]	7.73***	846
Intelligence	5.16 (1.07)	4.54 (1.02)	0.62	[0.54; 0.70]	15.11***	768
Social status	4.88 (1.44)	4.61 (1.21)	0.28	[0.19; 0.36]	6.45***	940

Note: *** $p < .001$. The variance in sample size is due to participants who reported that they did not include such information in their profile were computed as missing.

A differential score was chosen to avoid unnecessary complex model imputations. Thus, the multiple regression models in [Table 3](#) have 'skipped' a step and the predictors do in theory represent a mixed two-way interaction (e. g., Sex x MV-difference). The initial one-way repeated mate value effects are presented by paired t-tests ([Table 1](#)). All t-test showed a significant effect ($p < .001$), but only Face, $\Delta M = -0.27$, $t = -11.67$, and Body, $\Delta M = -0.25$, $t = -9.51$, had a negative difference, indicating a deceptive behavior according to our operationalization.

Table 2*Means and standard deviations in differential scores in MV-real life and MV-Tinder by men and women separately*

	Women		Men	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Ambitions	0.53***	1.28	0.80***	1.38
Face	-0.34***	0.84	-0.12**	0.74
Body	-0.28***	0.90	-0.18***	0.81
Economical standings	0.28***	1.36	0.33**	1.56
Humor	0.53***	1.36	0.62***	1.45
Health	0.24***	1.12	0.42***	1.22
Intelligence	0.54***	1.07	0.76***	1.24
Social status	0.30***	1.28	0.24**	1.45

Note: Stars represents values that significantly differ from zero. ** < .010, *** < .001

Table 2 shows the means and standard deviations for the differential scores for men and women separately. To predict if men and women differed significantly in deceptive behavior within the different characteristics, we performed three hierarchical regressions for hypothesis 1 (Table 3) and three for hypothesis 2 (Table 4) predicting the differential mate value scores. The gender coefficients in Table 3 and Table 4, shows the relative differential score between women (0) and men (1), where a positive coefficient illustrates that men have a more positive score than women, indicating that women lie more than men; with a negative coefficient indicating the opposite. We included participants' age, relationship status, and educational level as covariates in the first model. In the second model, we added the under-components for SOI (behavior, attitudes, and desires) and the three traits representing the Dark triad (Narcissism, Psychopathy, and Machiavellianism) as covariates.

According to hypothesis 1, we predicted that men would lie more than women on ambitions, economic standings, and social status. The regressions show that men, relative to women, did not report a more negative score on any of the traits predicted. Furthermore, women had a negative differential score concerning ambitions, relative to men, $\beta = .10, p < .001$. However, it is unclear if this should be interpreted as deceptive behavior, where table 2 shows that both women's and men's differential values are positive. Of the covariates higher scores of SOI desire were linked with a more negative differential score in economic status, $\beta = -.11, p = .024$, and higher scores SOI behavior were linked with less deceptive behavior in social status, $\beta = .11, p = .012$. Further, those older were predicted to lie more about their ambitions, $\beta = -.08, p = .048$, however, this effect was quite low and vanished when adjusted for SOI and Dark triad in Model 2. Lastly, participants with higher levels of educational levels were predicted to lie less about their economic status, $\beta = .19, p < .001$.

Table 3*Hierarchical regressions predicting the differential score between the participants' real-life mate value and their profile mate value*

	Ambitions		Economic status		Social status	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})
Sex ^{a,d}	.10** (.03)	.09** (.03)	.03 (.04)	.07 (.04)	.04 (.03)	-.02 (.04)
Age	-.08* (.04)	-.07 (.04)	-.02 (.04)	-.02 (.04)	.01 (.04)	-.03 (.04)
Education ^b	.07 (.04)	.07 (.04)	.18*** (.04)	.19*** (.04)	.01 (.04)	.00 (.04)
Relationship status ^c	-.03 (.03)	-.01 (.04)	.00 (.04)	.02 (.04)	.18* (.03)	.15 (.03)
SOI Behavior		-.02 (.04)		.03 (.04)		.11* (.04)
SOI Attitudes		.04 (.04)		.01 (.05)		.01 (.04)
SOI Desire		-.03 (.04)		-.11* (.05)		.00 (.04)
Narcissism		-.04 (.04)		-.08 (.05)		-.00 (.04)
Psychopathy		.01 (.04)		.04 (.05)		.02 (.04)
Machiavellianism		.06 (.04)		-.06 (.05)		-.12 (.04)
<i>N</i>	917		603		939	
R^2_{adj}	1.7 % *	2.2 % *	3 % **	5.6 % ***	3.2 % ***	5.6 % ***
$R^2_{adj\Delta}$		0.5 %		2.5 % *		2.4 % **

Note: Coefficients represent standardized beta values. * < .050, ** < .010, *** < .001. A positive beta means less lying.

^aMale entered as 1.

^bEducation entered as a continuous variable.

^cSingle entered as 1; Committed and undefined entered as 0.

^dAn increase in beta indicates that women have a negative score relative to men

In hypothesis 2, we predicted that women would lie more about their facial, body, and healthy appearance. The regressions shows that women, relative to men, lied more about their facial, $\beta = .13, p < .001$, body, $\beta = .06, p = .032$, and healthy appearance, $\beta = .08, p = .023$, in both Model 1 and when adjusting for the covariates in Model 2, however only face and body scores had initial negative scores (Table 1 and Table 2). Of the covariates, higher education predicted lower scores of deception in facial appearance, $\beta = .06, p = .046$, while those reported being single $\beta = .11, p = .003$, and higher scores in SOI attitudes, $\beta = .09, p = .046$, were linked to lower values of deception in terms of health. Lastly, higher scores on the trait Machiavellianism were linked to more deceptive behavior in body appearance $\beta = -.11, p = .004$.

Table 4*Hierarchical regressions predicting the differential score between the participants real-life mate value and their profile mate value*

	Face		Body		Health	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})	β (SE_{Robust})
Sex ^{a,d}	.13*** (.03)	.11*** (.03)	.06* (.03)	.06* (.03)	.07* (.03)	.08* (.04)
Age	.01 (.03)	.01 (.04)	-.03 (.03)	-.03 (.03)	-.01 (.04)	.00 (.04)
Education ^b	.05 (.03)	.06* (.03)	.08 (.03)	.09 (.03)	.00 (.03)	-.01 (.04)
Relationship status ^c	.01 (.03)	-.02 (.03)	.04 (.03)	.00 (.03)	.09** (.03)	.11** (.04)
SOI Behavior		.00 (.03)		-.02 (.03)		-.05 (.04)
SOI Attitudes		.02 (.03)		-.05 (.03)		.09* (.04)
SOI Desire		.05 (.04)		.08 (.04)		-.06 (.04)
Narcissism		-.02 (.03)		.03 (.03)		-.02 (.04)
Psychopathy		.03 (.04)		.03 (.04)		-.05 (.05)
Machiavellianism		-.03 (.05)		-.10* (.04)		-.02 (.05)
<i>N</i>	1288		1148		846	
R^2_{adj}	2 % ***	2.4 % ***	1 % *	2.3 % **	1.5 % *	2.6 % *
$R^2_{adj\Delta}$		0.4 %		1.4 % *		1.2 %

Note: Coefficients represents standardized beta values. * < .050, ** < .010, *** < .001. The outcome is a differential score between mate value real life and respective mate value on their Tinder profile. Thus, the coefficient should be interpreted as two-way moderators.

^aMale entered as 1.

^bEducation entered as a continuous variable.

^cSingle participants entered as 1; Participants in a committed or undefined relationship are entered as 0.

^dAn increase in beta indicates that women have a negative score relative to men

3.2 Hypothesis 3 and 4

To test hypotheses 3 and 4, whether scores of sociosexuality and the Dark triad moderated the effects of the relationship between gender and deceptive behavior, we performed 12 regressions with a two-stage approach, where the interaction term is introduced in model 2. As seen in [Table 5](#), neither sociosexuality nor the Dark triad manages to significantly improve the relationship between sex and deceptive behavior. We chose to present the moderation by overall mean scores of SOI and the Dark triad, however underlying components for both sociosexuality and the Dark triad were tested due to their various characteristics. Only one moderation was found, where higher scores of SOI behavior moderated the gender effect in deceptive behavior of body appearance, Model 2: $\beta_{Sex} = -.06$, $p = .250$, $\beta_{SOIbehavior} = -.08$, $p = .035$, $\beta_{Sex \times SOIbehavior} = .14$, $p = .019$.

Table 5

Interaction analysis using a two-stage approach with overall scores of Dark triad and sociosexuality as moderators on gender effects in deceptive behavior.

	Ambitions		Economic standing		Social status	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sex	.09**	.09**	.03	.03	-.05	-.05
SOI ^a	.01	.01	-.07	-.08	.12***	.12***
SxSOI ^b		.03		.03		.01
R^2_{adj}	0.9 % *	1 % *	0.5 %	0.7 %	1.5 % *	1.5 % *
Sex	.09*	.08*	.04	.04	-.01	-.01
D3 ^c	.04	.02	-.09*	-.10*	-.06	-.05
SxD3 ^d		.06		.01		-.02
R^2_{adj}	1.1 % **	1.4 % *	1 % *	1%	0.4 %	0.4 %
	Face		Body		Health	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sex	.11***	.11***	.06*	.05	.07*	.07*
SOI	.05*	.05*	-.01	-.01	-.01	-.01
SxSOI		.01		.03		.01
R^2_{adj}	1.8 % *	1.8 % *	0.3 %	0.4 %	0.5 %	0.5 %
Sex	.13***	.13***	.06*	.07*	.09*	.08*
D3	.00	.00	-.04	-.03	-.08*	-.09*
SxD3		.00		-.03		.03
R^2_{adj}	1.6 % *	1.6 % *	0.5 %	0.6 %	1.2 %	1.3 %

Note: Main effects are shown in Model 1; Interaction terms are included in Model 2. The underdimension SOI behavior significantly moderated the gender effect in body appearance,

$\beta_{SxSOIbehavior} = .14, p = .019$.

^aMale entered as 1

^bSociosexuality

^cInteraction between sex and sociosexuality

^dthe Dark triad; ^eInteraction between sex and the Dark triad

3.3 Hypothesis 5

To test hypothesis 5, if those with lower mate-value on a trait were less likely to include such information on Tinder, we performed eight logistic regressions to test if participants correspondent self-perceived mate value in real-life, sex, age, SOI, and Dark Triad tendency predicted the inclusion of a certain trait or not in their Tinder profile. The outcome variables were computed by coding those who rated the certain trait in their Tinder profile on the Likert scale as 1, and those who reported not to include/mention (option 8 – see appendix 1) such information as 0.

Table 6 shows the predictors for inclusion of ambitions, economic standing, and social status. Of the three characteristics, only those reported to have higher mate value within social status were significantly more likely to include such information on Tinder, $OR = 1.21, Z = 4.66, p < .001$, in comparison those older in age, were significantly less likely to include information about their social status $OR = 0.97, Z = -2.92, p = .004$. Lastly, men were more

than women likely to report information about all three traits, $OR_{Ambitions} = 1.84, p < .001$;
 $OR_{Economic\ standing} = 8.39, p < .001$; $OR_{Social\ status} = 4.90, p < .001$.

Table 6

Logistic regressions on the probability of including information about participants ambition, economic standing, social status in their Tinder profile by (N = 1340)

	Ambitions				Economic standing				Social status			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	<i>OR (SE)</i>	Z	<i>OR (SE)</i>	Z	<i>OR (SE)</i>	Z	<i>OR (SE)</i>	Z	<i>OR (SE)</i>	Z	<i>OR (SE)</i>	Z
cMV	0.97 (0.11)	-0.39	0.97 (0.05)	-0.57	1.02 (0.03)	0.75	1.02 (0.04)	0.52	1.21 (0.04)	4.65***	1.21 (0.05)	4.66***
Sex ^a	1.84 (0.24)	4.51***	1.84 (0.26)	4.33***	2.88 (0.35)	8.64***	2.90 (0.37)	8.39***	2.11 (0.30)	5.26***	2.04 (0.30)	4.90***
Age	0.99 (0.01)	-0.46	1.00 (0.01)	-0.42	0.99 (0.01)	-0.64	0.99 (0.07)	-0.52	0.97 (0.01)	-2.96**	0.97 (0.01)	-2.92**
SOI ^b			0.92 (0.07)	-0.92			0.86 (0.07)	-1.81			0.95 (0.08)	-0.52
D3 ^c			1.16 (0.13)	1.27			1.25 (0.13)	2.05*			1.25 (0.15)	1.91

Note: Note: * < .050, ** < .010, *** < .001.

Outcome variable is computed 1 = Included information on profile.

cMV = Correspondent mate-value in real life. Range = 1 - 7

All predictors are entered unstandardized. Mate value

^aMale is entered as 1

^bOverall scores for all three SOI components

^cOverall scores for all three traits in the Dark triad

Table 7 shows the predictors for the inclusion of information regarding face, body, and health. In face and health, higher mate value in real life, significantly improved the likelihood to include such information on Tinder, $OR_{face} = 1.28, Z = 2.58, p = .009$; $OR_{health} = 1.28, Z = 4.46, p < .001$. Only at the inclusion of information about health were did men and women differ, with men more likely to disclose, $OR = 1.92, Z = 4.98, p < .001$. Higher scores of SOI increased the probability of including pictures of one's body, $OR = 1.27, Z = 2.19, p = .028$. Lastly, those older were significantly less likely to include pictures of their faces $OR = 0.94, Z = -2.50, p = .013$

Two post-hoc logistic regressions were performed to see if the age effect differed among women or men. Only women had a significant effect on the inclusion of facial information, with those older less likely to include pictures of their face, $OR_{women} = 0.96, SE = .03, Z = -2.27$; $OR_{men} = 0.96, SE = .03, Z = -1.04$, however, this is more likely due to differences sample sizes additionally there is too little information to suggest there is a significant difference in effects between men and women.

Table 7

Logistic regressions on the probability of including information about participants ambition, economic standing, social status in their Tinder profile by (N = 1340)

	Face				Body				Health			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z
cMV	1.30 (0.13)	2.77**	1.28 (0.12)	2.58**	1.04 (0.05)	0.76	1.03 (0.05)	0.62	1.21 (0.05)	4.40***	1.22 (0.05)	4.46***
Sex ^a	0.70 (0.21)	-1.14	0.67 (0.21)	-1.29	1.20 (0.21)	1.07	1.14 (0.20)	0.74	1.93 (0.26)	4.93***	1.92 (0.26)	4.83***
Age	0.94 (0.02)	-2.50*	0.94 (0.02)	-2.50*	1.00 (0.01)	-0.12	1.00 (0.01)	-0.23	0.99 (0.01)	-0.98	0.99 (0.01)	-0.94
SOI ^b			1.12 (0.22)	0.58			1.27 (0.13)	2.19*			0.93 (0.08)	-0.89
D3 ^c			1.12 (0.31)	0.43			0.90 (0.13)	-0.68			1.10 (0.12)	0.93

Note: Note: * <.050, **<.010, ***<.001.

Outcome variable is computed 1 = Included information on profile.

cMV = Correspondent mate-value in real life. Range = 1 - 7

All predictors are entered unstandardized. Mate value

^aMale is entered as 1

^bOverall scores for all three SOI components

^cOverall scores for all three traits in the Dark triad

Lastly, [Table 8](#) shows the predicted values for inclusion of humor and intelligence in the participant's Tinder profile. Participants with higher values of mate value in humor were more likely to include such information on Tinder, $OR = 1.27, p < .001$. Men were, relative to women, significantly more likely to report including information about both traits, $OR_{Humor} = 1.91, Z = 4.11, p < .001$; $OR_{intelligence} = 1.85, Z = 4.41, p < .001$. Dark triad were associated with higher probability to include information describing one's humor, $OR = 1.42, Z = 2.82, p = .005$.

Table 8

Logistic regressions on the probability of including information about participants humor and intelligence in their Tinder profile by (N = 1340)

	Humor				Intelligence			
	Model 1		Model 2		Model 1		Model 2	
	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z	OR (SE)	Z
cMV	1.27 (0.07)	4.57***	1.27 (0.07)	4.58***	1.01 (0.05)	0.18	1.01 (0.05)	0.05
Sex ^a	1.91 (0.28)	4.41***	1.86 (0.30)	4.11***	1.91 (0.24)	5.23***	1.85 (0.24)	4.41***
Age	1.00 (0.01)	0.10	1.00 (0.01)	0.17	1.00 (0.01)	-0.37	1.00 (0.01)	-0.33
SOI ^a			0.86 (0.07)	-1.67			0.97 (0.07)	-0.28
D3 ^b			1.42 (0.17)	2.82**			1.23 (0.13)	1.92

Note: Note: * <.050, **<.010, ***<.001.

Outcome variable is computed 1 = Included information on profile.

cMV = Correspondent mate-value in real life. Range = 1 - 7

All predictors are entered unstandardized. Mate value

^aMale is entered as 1

^bOverall scores for all three SOI components

^cOverall scores for all three traits in the Dark triad

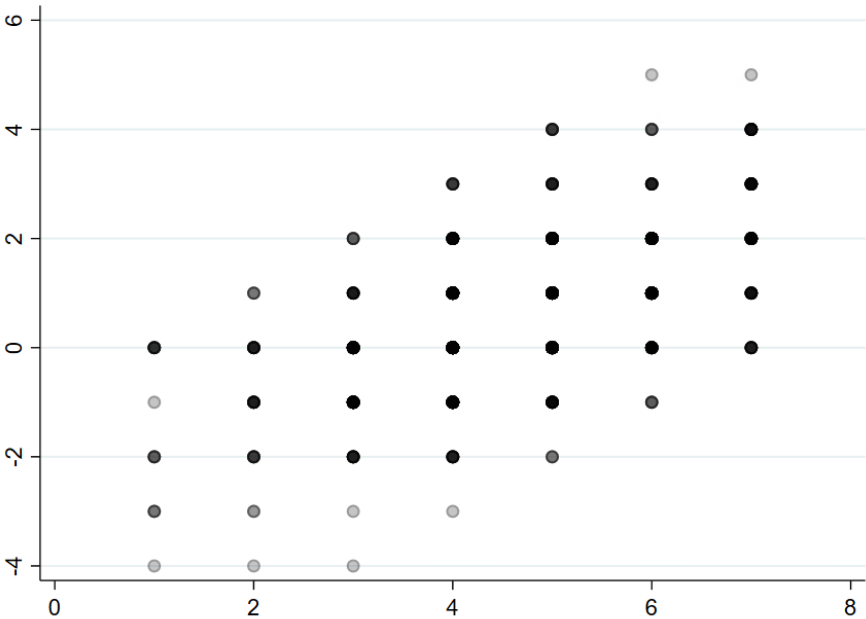
3.4 Post hoc analyses

Due to six out of eight mate value characteristics having a positive score, post hoc analyses we carried out to see if we could further get an answer of why someone would report to describe themselves lower on their Tinder profile (MV-Tinder), compared to their reported real-life mate value (MV-RL). An important disclaimer is that these analyses have not been pre-registered and are explorative.

Figure 1 shows the relationship between the participant’s self-perceived mate value real-life and their reported deceptive behavior (MV-RL – MV-Tinder) in ambitions. The figure shows that participants who reported a high real-life mate value, do not have the same options to report deceptive on their Tinder profile compared to those reporting lower values of mate value in real life. This means that a person who reports ‘1’ on ambitions in real life, has the possibility to report deceptive behavior from -1 to -6, whilst a ‘4’ would have only down to three, and lastly someone who initially reported themselves as a ‘7’ would have no options to report deceptive behavior. As shown in Table 2, men have higher scores on seven out of eight items, which gives them less of a bargaining hand when reporting deceptive behavior, creating a bias.

Figure 1

The relationship between participants mate value and the differential score between mate value in real life and on Tinder.



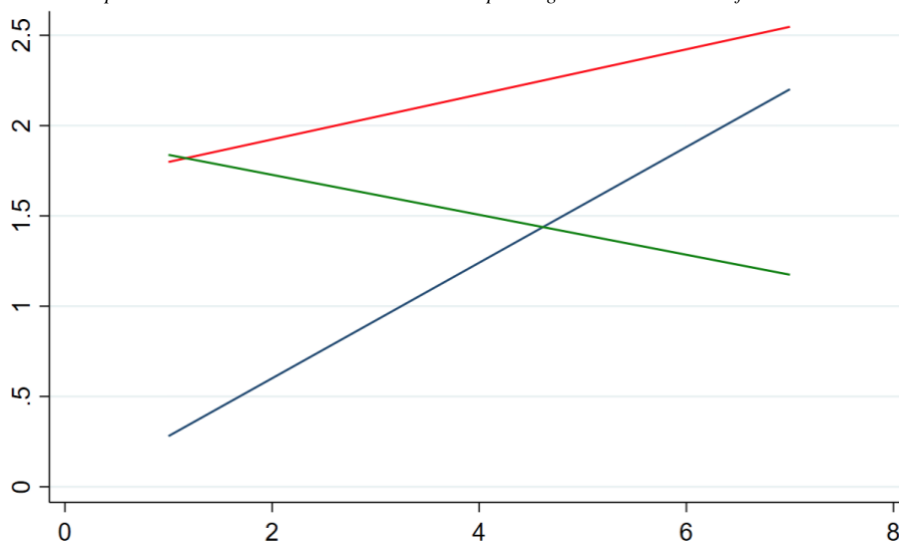
*Note: the scatterplot represents the observations in ambitions.
 X-axis – Mate value in real-life.
 Y-axis – Differential score between mate value real-life and Tinde. A value of zero = equal values reported in MV-RL and MV-Tinder.
 Whereas positive value’s represents lower scores on MV-Tinder; negative value represents higher values on MV-Tinder.*

However, this does not account for the fact that someone rates themselves lower on Tinder. We do suspect the positive differential scores to be due to participants feeling that Tinder serves them an injustice, and does not show their true mate value when non-physical (i.e., all traits except face, body, and health), as the majority of the information presented via the app is visual. Thus, we wished to investigate if there is a bigger distance between those reporting a high mate value, compared to those in the lower end; and further, if this is the other way in the traits regarding physical appearance. We computed the Euclidean distances (see Conroy-Beam & Buss, 2017, for an explanation of ED) between real life and Tinder within three mate value clusters; (1) economical standings, social status, and ambitions; (2) facial appearance, body appearance, and health; (3) humor, and intelligence. We predicted the Euclidean distances with the computed average scores for the corresponding within each cluster (Figure 2).

We found that those with higher mate value in ambitions, economic standings, and social status, did indeed have a greater distance between real life and Tinder mate value, relative to those with lower mate value, $\beta = .10, p = .018$, the same was the case for the humor and intelligence, $\beta = .23, p < .001$. However, this was opposite health, body, and facial appearance, where a higher score of mate value in real life predicted a smaller distance between mate value in real life and Tinder, $\beta = -.12, p = .001$.

Figure 2

Relationship between the Euclidean distance and corresponding mate value in real-life



Note:

Y-axis: The Euclidean distance between MV-Real life and MV-Tinder

X-axis – Mate value in real life; each line represents average scores within each cluster.

Green – Face and body

Red – Ambitions, economic standing, and social status

Adding to this, we try to utilize the linear regression model from another angle by predicting participants' mate-value on Tinder, while holding their real-life mate-value constant by adding it as a predictor in the model. In theory, this should be that if for example men and women differ in mate values on their Tinder profile, while they are predicted to be equal in real life mate value.

Table 9 and **Table 10** show the regressions for predicting participants' mate value in their tinder profile when holding their mate value in real-life constant.

Table 9

Hierarchical regressions predicting mate-value in Tinder profiles while adding corresponding mate-value as predictors

	Ambitions		Economical standings		Social status	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
cMV	.42***	.39***	.37***	.44***	.50	.51
Sex ^a		-.02		.02		.01
Age		-.04		.04		.00
Education ^b		.03		-.05		.00
Relationship status ^c		-.06		-.07		-.11***
SOI Behavior		-.04		.04		.03
SOI Attitudes		.05		-.07		-.00
SOI Desire		.05		.04		-.04
Narcissism		.14***		.18***		.07*
Psychopathy		.00		.01		-.03
Machiavellianism		-.03		.03		.08*
<i>N</i>	917		603		939	
<i>R</i> ² _{adj}	18 %***	20.5 %***	21.7 %***	26.9 %***	25.3 %****	28.6 %***
<i>R</i> ² _{adj} Δ		2.5 %**		5.2 %***		3.3 %***

Note: *** $p < .001$.

cMV = The correspondent mate-value in real life. E.g, in predicting ambitions in Tinder profile; ambitions from self-perceived MV in real life is entered.

^aMale is entered as 1

The only difference between men and women when holding their real-life mate value constant was on facial appearance, where women rated their facial appearance higher than men, $\beta = -.05$, $p = .005$, the small effect size is likely due to the large amount of variance being explained by the corresponding mate value in real-life. However, the most notable effect is Narcissism where, except for body, higher levels predicted higher levels of rating on all the other Tinder characteristics, when holding the corresponding mate-value constant, $\beta_{ambitions} = .14$, $p < .001$; $\beta_{economical\ standings} = .18$, $p < .001$; $\beta_{social\ status} = .17$, $p = .038$; $\beta_{face} = .06$, $p = .002$; $\beta_{health} = .07$, $p = .036$. While higher scores of Machiavellianism predicted higher scores of social status in Tinder profile, $\beta = .08$, $p = .011$

Table 10*Hierarchical regressions predicting mate-value in Tinder profiles while adding corresponding mate-value as predictor*

	Face		Body		Health	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
cMV	.77***	.75***	.81***	.81***	.56***	.55***
Sex ^a		-.05**		-.03		-.01
Age		-.00		.01		-.01
Education ^b		-.02		-.05*		.06
Relationship status ^c		-.01		-.02		-.07*
SOI Behavior		-.00		.05		-.03
SOI Attitudes		.04		-.03		.04
SOI Desire		-.04		-.03		.04
Narcissism		.06**		.03		.07*
Psychopathy		-.01		-.01		.03
Machiavellianism		.01		.04		-.02
<i>N</i>	1288		1148		846	
<i>R</i> ² _{adj}	58.5 %***	59.6 %***	65.9 %***	66.9 %***	25.3 %***	28.6 %***
<i>R</i> ² _{adj} Δ		1.1 %**		1.0 %**		3.3 %***

Note: * <.050, **<.010, ***<.001. ^aCoefficients in sex is the opposite from where it predicts differential (Table 4 and 5), with negative values indicating more deceptive behavior for women (i.e., women have a higher Tinder-MV than men, when holding their MV-real life constant).

cMV = The correspondent mate-value in real life. E.g, in predicting ambitions in Tinder profile; ambitions from self-percieved MV in real life is entered.

The complete dataset also includes mate values for someone the participants have met via tinder. Thus, we also investigated the pattern within men and women participants met up with on a date, by implementing the two approaches with differential scores and predicting Tinder-value while holding corresponding mate value constant.

Table 11 shows the predictors for differential scores in between a participant's match and date. An important note is that the sociosexuality entered is the of participants', not the date. As in the previous model, women lied more than men on facial appearance, $\beta = .12, p < .001$. Further, those with unrestricted sociosexuality were predicted to meet someone who had lied about their bodies, $\beta = -.10, p < .001$.

Table 11*Two-stage interaction analysis with overall SOI as moderator; predicting the differential score of MV Match - Date*

	Ambitions		Economic standing		Social status	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sex ^e	.04	.04	.00	.01	-.04	-.04
SOI ^{a,b}	-.06	-.06	-.06	-.06	-.00	-.00
SxOI ^c		.02		-.02		.00
<i>R</i> ² _{adj}	0.8 %	0.8 %	0.5 %	0.5 %	0.2 %	0.2 %
	Face		Body		Health	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sex	.12***	.11***	.02	.01	.03	.04
SOI	.00	-.01	-.10**	-.10**	-.07	-.07
SxSOI		.01		.04		.01
<i>R</i> ² _{adj}	1.4 %**	1.6 %**	1.2 %*	1.4 %*	0.7 %	0.7 %

Note: All values represent standardized beta. * <.050, **<.010, ***<.001. None of the second models added significant more variance

^aSOI = computed overall score for the three SOI dimensions

^bSOI represents the participants' sociosexuality, not the date.

^cSxSOI = Interaction term for date's sex and participants SOI.

^eMale = 1. A positive value represents women to lie more than men.

Table 12 shows the predictors for date's mate value in their tinder profile, that participants have met and rated. It is important to note, that here, the coefficient for sex is the opposite; where a negative value indicates that women lie more. In their profiles, men were predicted to have higher mate-value in economic standings while holding the corresponding date-rating constant, $\beta = -.17, p < .001$. Further, women were rated to have higher values of their face in their Tinder profiles, while holding the correspondent date-rating constant, $\beta = -.11, p < .012$. Lastly, in this model as in Table 11, sociosexuality predicted higher ratings in date's Tinder profile, while holding the date's real-life mate value constant $\beta = -.17, p < .001$. Model 2 shows that this was only the case for women, $\beta_{SxSOI} = -.09, p < .007$.

Table 12

Two-stage interaction analysis with overall SOI; predicting match's mate-value while adding date's mate-value as a covariate

	Ambitions		Economic standing		Social status (<i>N</i> = 615)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
cMV ^a	.32***	.32***	.45***	.45***	.46***	.46***
Sex ^b	.05	.07	.18***	.17***	.03	.03
SOI ^{c,e}	.06	.07	.10*	.10*	.05	.04
SxSOI ^d		-.06		.04		-.00
<i>R</i> ² _{adj}	11 %	11 %	27.1 %	27.2 %	20.0 %	20.0 %
	Face		Body		Health	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
cMV	.61***	.61***	.68***	.68***	.46***	.46***
Sex	-.11*	-.10*	-.05	-.03	.04	.04
SOI	.01	.01	.08**	.09**	.03	.03
SxSOI		-.06*		-.06*		.01
<i>R</i> ² _{adj}	37.7 %	38.1 %	44.2 %	44.9 %*	21.9 %	22 %

Note: All values represent standardized beta. * < .050, ** < .010, *** < .001.

All levels of *R*²_{adj} were significant at the *p* < .001-level; Model 2, in predicting body with interaction term were significant different from Model 1.

^acMV = correspondent mate-value for the date

^bMale = 1; Coefficients in sex is the opposite from Table12; negative scores indicate more deceptive behavior for women (e.g women have a higher MV in match than men, while holding their MV from date constant).

^dSxSOI = Interaction term for date's sex and participants SOI.

^eSOI represents the participants sociosexuality, not the match/date's actual SOI.

4 Discussion

This study set out to investigate if we could detect systematic patterns in deceptive behavior on Tinder. We derived our hypotheses from the theoretical framework of evolutionary psychology; a perspective found to be well suited for predicting deceptive and promotive tactics within the realm of online dating (Abramova et al., 2016). With a shift within online dating; where men and women more often seek mates via their smartphones; we test to see if the same patterns are prevalent within the dating app Tinder.

First, we predicted that men would, to a greater degree than women, lie about ambitions, economical standings, and social status. Contrary to expectations, this study did not detect any difference between men and women in terms of lying about economical standing and social status. Further, an unanticipated finding was that women were found to lie more about ambitions than men. However, it appears that both men and women rated their ambitions, social status, and economic standing lower as reflected on Tinder, compared to their reported mate value in real life. Based on these results, no support was yielded for Hypothesis 1.

Next, it was hypothesized that women, to a greater degree than men, would lie about traits such as facial and body appearance and health. We found that women, more than men, lied about information regarding all three traits, with body and facial scores significantly higher on Tinder compared to their perceived mate value in real life. However, the effect sizes within the body and health were marginal. In summary, the results yielded full support for hypothesis 2

We further expected that differences between men and women would be moderated by their sociosexuality and the Dark triad. This study found evidence for neither overall sociosexuality nor tendencies in overall scores in the Dark triad, to interact with any of the gender differences. When investigating the under-dimensions, one significant interaction was found; predicting that women with more unrestricted sociosexual behavior to a larger degree lie about the appearance of their bodies.. However, the effect size was quite marginal, and could just as well be attributed to a type 1 error. Thus, the results yielded no support for hypotheses 3 and 4

Hypothesis 5 provided the largest set of consistent findings. We predicted that higher mate value in real life would be associated with respondents including a representation of the corresponding trait on Tinder. We found that people were more likely to include

information about their social status, health, humor, and face when they had higher scores of the corresponding trait in real life. Thus we conclude that the results yield partial support to hypothesis 5.

We included three post-hoc analyses, to analyze why women scored negatively higher than men in the differential scores on ambitions; and why in six out of eight traits, the participants rated themselves lower on Tinder than in real life. First, we found that participants with higher scores in their self-perceived mate value in real life had less margin to report deceptive behavior. This could create a bias, as men did rate themselves higher on all traits except one when assessing their real-life mate value. However, this does not explain the fact that on average, both men and women rated themselves lower on Tinder compared to their real-life mate value, within all the non-physical traits. Since Tinder profiles primarily rely on their information on the visual aspect; we suspect that those higher in mate value on the non-physical traits would feel that Tinder serves them an injustice by not fully emphasizing their positive traits, despite their intentions to do so. By implementing a Euclidean distance, we found that those with higher mate value within non-physical traits had a larger distance between the correspondent traits in reported real-life and those reported on Tinder. For physical traits we found the opposite, indicating that those higher in mate value regarding face, body, and health reported a closer distance between their real-life mate value and the corresponding on Tinder.

Lastly, we applied a complementary approach to the relationship between participants' mate value in real life and on Tinder, to see if it could increase the predictive power and remove some of the bias that comes with a higher mate value. Rather than measuring the difference between two traits, we sought to predict their Tinder mate value by participants' sex, the Dark triad, and SOI while holding the corresponding trait in real life constant, as a covariate. As in the first analyses, women rated their facial appearance higher than men, but the same effect was not present in body and health. The participants' rating of their own body was the strongest predictor for its corresponding trait within Tinder. Thus, leaving very little variance left for other predictors to account for. We also found narcissism to be a consistent predictor across all traits, except in body appearance. Thus, those who score higher in narcissism might be more susceptible to succumb to deceptive behavior.

We found similar patterns of deceptive behavior by someone the participants reported to meet up with; where women, more than men, were more likely to lie about their facial appearance. We did not find any gender effect on body appearance. However, gender

had a significant interaction with the participants' overall sociosexuality; were men with unrestricted sociosexuality reported more misrepresentations in women's bodies.

In summary, we found partial to full support for two out of five hypotheses. The use of deceptive behavior was most apparent for physical appearance. Women's strategic presentation of their physical appearance, relative to men, looks to be a consistent finding in our analyses. Additionally, we find similar patterns for someone the participants have matched and met up with on a date. The results reflect prior studies showing that women are more likely to enhance (Davis & Arnocky, 2020) and lie about physical appearance (Hancock & Toma, 2009; Toma, Hancock & Ellison, 2008; Abramova et al., 2016; Schmitz, Zillman & Blossfield, 2013; Tso, Hsieh & Chiu, 2013; Schmitz, Zillman & Blossfield, 2013); and adds to the notion that promotion of physical appearance tactics is most effective when used by women (Schmitt & Buss, 1996; Bendixen & Kennair, 2014).

Further, to our surprise, we did not find any support for men to lie within any of the traits we predicted. One explanation could be that the socioeconomic variation in a Norwegian sample is too small to explain such an effect (Bendixen & Kennair, 2015). We also discovered that both men and women rated their Tinder profile lower than the corresponding traits in real life. One explanation could be that Tinder mainly bases its information around visual cues. Accordingly, there is reason to believe that it might be more difficult to present a true impression of the other non-physical traits if one desires to do so. I.e., participants who view themselves as highly ambitious, could feel that although they wish to promote their ambitions, Tinder makes it hard to promote this to a satisfactory state, leading the participants to report themselves lower in the questionnaire. Although we do not have any explicit measures to indicate such perception; our post-hoc analyses provide some of the answers. Assuming that the relatively lower scores in non-physical traits on Tinder, reflects the fact that Tinder users find that non-physical traits are harder to present via the app; there should be opposite patterns between physical and non-physical traits in distances between real-life and Tinder traits as their own perceived mate value in real-life increases. This notion was supported by the analyses; a higher mate value in the non-physical traits increased the Euclidean distance between the corresponding mate-values in real life and Tinder, while a higher mate value in physical traits decreased the distance. Accordingly, because Tinder is only able to convey limited information, this could be helpful for those with lower mate value, while perceived as an obstacle for those with higher mate value.

If this holds true, there is a possibility that men would put their effort to lie about facial appearance as well. In fact, although to a lesser degree than women, we also found men

to lie about physical appearance on Tinder. This finding is corroborating existing findings that women in the short-term mating context also put a premium on men's physical attractiveness (Gangestad, Thornhill & Garver, 2002). Thus, men should also find enhancing their physical appearance an effective use of tactic (Bleske & Buss, 2006). Adding to this, although not committing an act of deception, our results indicate that men to a larger degree than women include information about the non-physical traits. While women deceive to a larger extent about physical appearance men also engage in deceptive behavior when presenting their face and body, but in addition to this promote the other traits to attract the opposite sex.

Our findings in hypothesis 5 also confirm an observation of a pattern regarding non-physical traits that are not explicitly enhancing, but nevertheless strategic, as those with lower scores in social status, humor, health, and face were more likely to exclude such information from their profiles. This is interesting as it is not deceptive in terms of blatant enhancement, but rather in terms of strategic disclosure, as it provides a potential mate with a skewed impression of the truth. Tinder seems to work somewhat like an extreme version of speed-dating, where a person has the ability to screen a large pool of potential mates within a relatively small time frame. In fear of getting instant rejection (swipe left), people leave out the information from their profiles that might not be perceived as desirable. This is in accordance with the *mate preference priority model* (Li et al., 2002; Li & Kenrick, 2006), which has been found relevant to the speed dating context (Li et al., 2013).

For hypotheses 3 and 4 we failed to find sufficient results that yielded support. To our knowledge, this is the first study to link deceptive behavior to individual differences in sociosexuality. We predicted that men and women with more unrestricted sociosexuality would engage in more deceptive tactics. Specifically in regards to traits that the opposite sex has evolved a mechanism to desire. I.e., for men who seek sexual variety, one could argue that boosting one's traits could help gain access to a larger pool of mates (Buss & Schmitt, 1993; Schmitt & Buss, 1996; Bendixen & Kennair, 2015). Also, previous findings have suggested that women with unrestricted SOI do engage more frequently in appearance-enhancement and high-risk cosmetic surgeries (Bleske-Rechek & Buss, 2006; Batres, Porcheron, et al., 2018; Bradshaw et al., 2019). One reason why we failed to predict an interaction could be in that those who seek out mates on Tinder already are, relative to non-users, more unrestricted in their sociosexuality (Botnen et al., 2018). The same could potentially be attributed to subjects higher on the Dark triad, as they have been shown to seek short-term strategy to a larger extent than they do long-term strategy (Jonason et al., 2009).

Nevertheless, we did find the underlying component of sociosexual behavior to moderate the difference between men and women in misrepresenting their bodies; where women tend to lie increasingly about their bodies when more unrestricted in their sociosexual behavior. We found similar results for the women men reported being on a date with. As in our initial analyses, sociosexuality moderated the gender difference. More unrestricted sociosexuality increased the misfit in women's bodies between the match presentation and the date. We also found more unrestricted sociosexuality to increase the probability of including information about one's body. Thus, the findings could reflect that women who engage in short-term relationships find body enhancement a very effective method on Tinder since men are more likely to emphasize the body when pursuing short-term relationships, as these cues have the strongest association with fertility (Confer, Perilloux & Buss, 2010).

In addition, the complementary analyses showed narcissism to be a consistent predictor of lying on Tinder. This result corroborates the findings of Jonason et al., (2014) which linked narcissism to deceptive intersexual and intrasexual tactics involving dominance, appearance, and popularity.

4.1 Limitations and future research

Parts of the findings within this study are from analyses not pre-registered. Thus, the results would need to be replicated to provide further conclusions. This is especially the case regarding participants' perception of presenting non-physical traits. Future studies should include measures that more accurately and explicitly test these assumptions. We also observe, in the aftermath, that our wording of the questions within measuring mate value on participants' Tinder profiles, reflect some of these assumptions; when asking about how they present themselves, we have unconsciously phrased the last tail of the questions regarding face and body (e.g., "...*how attractive is your face?*") different from the other traits (e.g., "...*how ambitious have you presented yourself?*"). Ultimately, it is hard to come up with alternative wording that makes the questioning sound more equal between face/body and the rest of the traits. Nevertheless, we believe that for future measures of mate value and deceptive behavior on Tinder, physical and non-physical measures should be treated more separately.

4.2 Conclusion

In general, our findings suggest that Tinder is primarily a visual app where it is hard to present oneself besides physical appearance. Women tend to rely most of their information on physical appearance and therefore lie more than men about their physical attractiveness. We also find men to mostly lie about their faces, but to a smaller degree than women. In this regard, men were more likely than women to include information about the non-physical traits found to be desirable by women (Buss & Schmitt, 1993; Bendixen & Kennair, 2015). Lastly, in accordance with speed-dating and the mate preference priority model (Li et al., 2013), our findings show that men and women could strategically leave out information about traits that might increase the likelihood of rejection. We conclude that the evolutionary framework has predictive value when testing systematic patterns within more novel and visually based dating platforms such as Tinder.

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Appendix 1: Questionnaire

Due to the online being distributed online, and because Nettskjema (UiO) do not offer a function to convert the questionnaire to PDF-format, a non-public version of the questionnaire (Norwegian) is available on the following link and QR-code:

Link:

<https://nettskjema.no/a/203173>

QR:



