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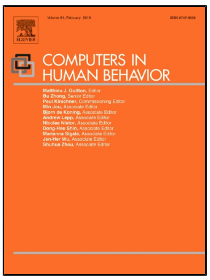

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Rita R. Silva[a], Marie-Luise Koch[b], Kyra Rickers[b], Gabriel Kreuzer[c], and Sascha Topolinski[a]

[a] University of Cologne
[b] University of Maastricht
[c] University of Würzburg

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Corresponding Author: Rita R. Silva, Social Cognition Center Cologne, University of Cologne, Richard-Strauss-Str. 2, 50931 Köln, Germany. E-mail: rita.silva@uni-koeln.de. Telephone: +49 221 470 5978.

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Abstract

Five studies explored how users of online dating platforms, such as Tinder™ and Parship, are perceived by others. Participants were presented with ostensibly real profiles of Tinder™, Parship, and Facebook users and indicated how trustworthy they perceived each to be. Our hypothesis was that Tinder™ users would be perceived as less trustworthy than both Parship and Facebook users because Tinder™ is generally portrayed according to a "hook-up app" narrative. Additionally, we tested whether the lower trustworthiness attributed to Tinder™ users persists when judgments are made in a context where the association between the individuals and the online platforms in which they were presented is removed. Our hypothesis was generally supported in a preliminary study and Studies 1 to 3. Study 4 tested the limits of the effect and showed that the adverse Tinder-effect on perceived trustworthiness was diluted when several minutes of strong cognitive distraction occurred between the first encounter with the users of each app and the evaluation of their trustworthiness.

Keywords: trustworthiness; social media; online dating; impression formation.

1. Introduction

In the last 10 to 15 years, several online social networking sites and applications (apps) have been launched which allow Internet users to connect, communicate, share information, or simply "follow" thousands of other online users. The most prominent example is Facebook, which was launched in 2004 and that by June of 2017 had an average of 1.32 billion daily active users worldwide (Facebook, 2017). Dating websites and online agencies and apps have also flourished in the market and enjoy a lot of popularity worldwide (e.g., Hogan, Dutton, & Li, 2011; Smith, 2016; Smith & Dungan, 2013). The availability of online dating platforms have changed the way romantic relationships are pursued and developed: online dating gives people access to an incomparably higher number of potential partners than conventional offline dating; it allows users to interact and communicate with potential partners, gathering personal information without having to meet face-to-face; and some platforms for online dating even offer to do a pre-selection of potential romantic partners for their users on the basis of mathematical algorithms that calculate romantic compatibility (see Finkel, Eastwick, Karney, & Reis, 2012). If in the early 2000's there was still some stigma about online dating – with many Internet users considering that online dating was "desperate", that many online daters lie about their marital status, and also that online dating presented some dangers due to the sharing of personal information online, facing deceit or lies, risks of emotional, physical or sexual violence (see Couch, Liamputtong, & Pitts, 2012; Madden & Lenhart, 2006; Sautter, Tippett, & Morgan, 2010), a more recent national survey conducted in the USA in 2013 shows that attitudes towards online dating have improved considerably with time, with a majority of Internet users considering it is a good way to meet people and to find better matches because the offer is very large (Smith & Duggan, 2013; Smith 2016).

Despite the popularity of online dating, psychological research concerning this topic is still scarce. Typically, this research revolves around the personal characteristics and the motives associated with the use of online dating sites platforms (e.g., Chan, 2017; Gatter & Hodkinson, 2015; Ranzini & Lutz, 2017; Sevi, Aral, & Eskenazi, 2017; Sumter, Vandenbosch, & Ligtenberg, 2017; Timmermans & De Caluwé, 2017a, 2017b; Valkenburg & Peter, 2007; Van De Wiele & Tong, 2014) and issues such as self-presentation strategies and deception (e.g., Drouin, Miller, Wehle, & Fernandez, 2016; Ellison, Hancock, & Toma, 2012; Ellison, Heino, Gibbs, 2006; Guadagno, Okdie, & Kruse, 2012; Hall, Park, Song, & Cody, 2010; Hancock & Toma, 2009; Toma & Hancock, 2010; Toma, Hancock, & Ellison, 2008).

However, little is known in respect to how online daters are perceived by others. This question is important because while the founders of online dating sites/apps most often describe their products in a rather positive and romantic way, the technology and design features that support their use may lead to very different perceptions. Take the example of Tinder™. While the founders of Tinder™ state that the vast majority of its users are using the app to look for long-lasting relationships (e.g., O'Hare, 2015), the prevailing idea conveyed by popular media is that Tinder™ is a superficial, "hook-up" app (e.g., Ayers, 2014; Perez, 2018; Sales, 2015; Seidman, 2017; Schacter, 2015). This image partly originates in the way Tinder™ operates (described in more detail below), which resembles a game in which users are presented with pictures of other users and decide whether they like them or not based on their appearance and then proceed to do the same with the next user picture. Despite the fact that the association between Tinder™ use and the search for casual sex does not find strong support in research – casual sex is referred as one of the least common motives that people say they use Tinder™ for (Sumter et al., 2017; Timmermans & De Caluwé, 2017a; but see LeFebvre, 2018), being

associated with an online dating platform with such a reputation might have an impact on how an individual is socially perceived, on making his/her personal characteristics less desirable. So far, this question has not been examined in the literature.

Our goal with the present work is thus to fill the gap in the literature regarding the perception that individuals hold about online daters' personality and whether the type of online dating platform they use shapes this perception due to the relationship-related narratives and stereotypes they may convey. Furthermore, we wanted to understand whether the impression that is formed about people with online dating profiles persists and is activated when they are re-encountered in neutral contexts where the association between the target and the online-dating site is disentangled.

1.1. Online dating platforms: Tinder™ and Parship

In our studies, we focused on the perceptions about the personality of the users of two different online dating platforms, Tinder™ and Parship. We chose these two platforms not only because they are both widely known in Germany (where the studies took place), but also because the way in which they operate is quite different. From the creation of the user profile, the type of information users can access about others, the actions that can be taken within the platforms and their usability, to the matching principles they apply, all these factors differ between Parship and Tinder™. Such differences might affect the general perception about what type of person uses Tinder™ and what type of person uses Parship. In the next sections we describe the two platforms in more detail, highlighting how their differences may affect how their users are perceived.

1.1.1. Tinder™

One of the most popular online dating platforms currently is Tinder™, a mobile app launched in 2012. Although Tinder™ does not release concrete values regarding number of users, different independent reviews of online dating sites usage suggest that Tinder™ has an estimated 50 million users worldwide (e.g., Bilton, 2014; Giuliano, 2015; Smith, 2017). Attesting to its popularity, in the first semester of 2016 Tinder™ was the most downloaded IOS dating app and the second most downloaded Android dating app worldwide, with 11 and 21.5 million downloads, respectively (Newzoo, 2016a, 2016b).

Setting up a Tinder™ profile is a fairly easy process. The user needs to have a Facebook account from where Tinder™ will get information such as the name, age and number of (Facebook) friends. There is the option to write a very short bio. The user then selects an unlimited number of pictures to add to his profile and chooses one to be the primary picture (i.e., the one that other users will see first). Once the user logs in, he/she can set up search criteria for the profiles he/she wants to be presented with, such as gender(s), age range and the maximum distance from the other users (1 to 100 miles). Once the app is activated, the user's location is sent to Tinder™'s server that then sends back the profiles that match the user's criteria. In this moment, the user sees an array of pictures of other users with the name and age and one of two actions can be taken: the user can swipe the picture on the screen to the right and signal he/she likes that person, or he/she can swipe the picture to the left and signal he/she dislikes the person. Before swiping right or left, the users can click on the profile shown to them and see other pictures of the person and read their bio if available. When two users signal that they like each other they are notified by Tinder™ saying that they got a match. At this moment, they can start to communicate with each other through text messages in the app. There is no notification regarding the profiles the users do not match with.

1.1.2. Parship

Parship is a renowned online dating agencies, launched in 2001 in Hamburg, Germany, and which has expanded to other 11 countries in Europe and also to Mexico. According to Parship country websites, more than 23.000 new users join every week (in the German website this number goes up to over 30.000 new users every week), and data from 2013 shows that 51% of the users are women. The platform can be accessed on IOS mobile phones through the mobile version of the site and through the app for iPhone. There is a separate portal for homosexuals looking for a partner (Parship, 2017a).

Parship defines itself as an online dating service directed at singles with a high level of education and income and who are looking for serious commitments and long-term relationships. To find matches for its users, the agency developed the Parship Principle®, which starts with a compatibility test developed by the psychologist Hugo Schmale of the University of Hamburg. This questionnaire assesses 30 personality characteristics that Schmale's research has suggested to be relevant for successful relationships (Parship, 2017b), takes approximately 20 minutes to complete and is used to create a personality profile for each user. Then, by means of matching-algorithms, a list of recommended partners, i.e., "people who balance [the user] with a particular combination of similarities and differences" (Parship, 2017b) is produced and the users are then able to send contact requests and communicate with each other. The list of recommended partners is regularly updated and can be refined by adjusting the search criteria to personal preferences (e.g., age, height, education, location, etc.). Parship also offers the opportunity to upload up to nine pictures to a user's profile. However, the pictures are not public and the other members cannot see them. The pictures become visible only when the user decides to show them to one of his/her recommended partners, and they are visible only for that specific user.

1.1.3. Differences between Parship and Tinder™

In the descriptions of the *modus operandi* of Parship and Tinder™ there are some differences that stand out, for instance, the usability features and the matching principle of each app. Parship seems to value personality characteristics over physical attributes. The app requires some work from users to establish a profile, which includes filling in the long personality assessment that is the basis to find potential matches. In addition, pictures of other users are not public and the users are the ones to decide when to make their pictures available to potential matches proposed by the app.

Differently, Tinder™ matching process and the usability features of the app seems to value physical appearance more. For example, there is almost no personal/personality information in the profiles, pictures of users are immediately visible and are the primary information displayed on the profiles. The process of setting up a Tinder™ profile is also much simpler and immediately rewarding in what concerns access to the pool of users. In addition, the app's design and usability, the "swiping" from one profile to the next, make the experience of the app similar to going through a picture catalog or a game of categorization of people based almost entirely on their appearance.

Could these differences in terms of the matching principles and the user experience features lead to differences in the way their users' personality is perceived? For example, since Tinder™ offers a catalog of other people for the users to go through and choose according to how attractive they find them to be, Tinder™ users may be perceived as being more likely to objectify potential partners, as someone who values physical characteristics over personality, and whose motive in connecting with others is to have a casual sexual "hook-up". Differently, because Parship requests all its users to fill in a personality questionnaire and contact with other

users is only possible if there is a match based on the personality assessment, Parship users may be associated with characteristics that society generally considers more desirable (even if only socially desirable), as individuals who value personality over looks, and who are searching for long-term and serious relationships (Timmermans & De Caluwé, 2017a; Finkel et al., 2012).

1.2. Trustworthiness

The goal of the studies presented here was to address the potential differences in how the personality of users of online dating sites are perceived as a function of the online dating site they use. In pursuing this goal, we focused on evaluations of the perceived trustworthiness of online daters, as this characteristic is a key determinant of whether individuals approach or avoid contact with others (see Todorov, 2008), and thus is highly relevant for the initiation of contact with potential romantic partners.

Trustworthiness can be defined as the willingness of an individual to behave in a benevolent way towards an interaction partner even if there is the opportunity to betray (e.g., Schoorman, Mayer, & Davis, 2007; Thielmann & Hilbig, 2015). This is an essential interpersonal judgement that has a great impact on whether a relationship is developed and pursued further (see Balliet & Van Lange, 2013; Ferrin, Bligh, & Kohles, 2008; Rotenberg, McDougall, Boulton, Vaillancourt, Fox, & Hymel, 2004). Individuals evaluate the trustworthiness of another person in the early stages of a relationship, when information is scarce and uncertainty is high, as is so often the case in online environments (e.g., Flanagin, 2007; Toma, 2014). Judgments of trustworthiness are rather effortless, fast, and automatic, occurring as early as 100 ms after encountering an unfamiliar face (Todorov, Pakrashi, & Oosterhof, 2009; Willis & Todorov, 2006). In online social networks, commercial sites or dating apps, judgments about other users' trustworthiness often occur before any interaction has taken place and are

based only on static information presented in their profile (e.g., Silva, Chrobot, Newman, Schwarz, & Topolinski, 2017; Silva & Topolinski, 2018; Toma, 2010, 2014). Depending on whether an interaction's partner trustworthiness is perceived to be high or low, connections are made or avoided, information is disclosed or held back, and relationships form or break (Rotter, 1980).

Previous research has explored how cues present in online dating profiles may affect the perceived trustworthiness online daters. For instance, it has been shown that online daters perceived trustworthiness is lower when other users have access only to their photographs as compared to photographs accompanied by textual information about the users or even only textual information (Toma, 2010). Attractiveness of the profile picture of online dating profiles has also been shown to affect online daters perceived trustworthiness, with men attributing less trustworthiness to more attractive female online daters, and women attributing more trustworthiness to more attractive male online daters (McGloin & Denes, 2018).

Building up on these previous studies, and as formulated in the introductory section, in our studies we were interested in whether the specific online dating platform that individuals choose to use can on its own, and without more information about the person, act as a cue for their perceived trustworthiness, because the different online dating platforms may have associated with them different stereotypes and narratives regarding the type of romantic relationship their technology and usability promotes.

1.3. The present studies

As the attentive reader can conclude from the introduction, there is a scarcity of both scientific studies and popular media articles reporting German population general opinion about the dating apps Tinder™ and Parship. Thus, our first effort was to run a preliminary study asking

an independent sample of the target population of our studies – German university students – to write down their opinion about the two dating apps and their users, to first establish that indeed there are differences in how their goals and characteristics are perceived. Then, in Study 1 we designed an online survey to start testing whether the differences between the two online dating apps translated into differences in how trustworthy their users are perceived to be. Finally, in Studies 2, 3, and 4 we aimed at replicating the effects found with the survey with more robust experimental designs. Additionally, we tested whether the social perception of online daters' trustworthiness persists when the association between the person and the online dating site in which she/he was first encountered is removed.

2. Preliminary Study

The goal of this study was to explore German students' general perceptions of the users of Tinder™ and Parship dating apps/sites in a rather unrestricted manner. We were interested in how participants would describe the two groups of users spontaneously and without any instruction prompting them to consider any particular characteristic. Given the way in which popular media in other countries, namely the USA, portrays Tinder™, we wanted to know if the opinions of our participants followed the same "hook-up app" narrative. We predicted that there would be more allusions to casual sex motives and to superficial contacts when participants described Tinder™ users as compared to Parship users. By contrast, we predicted that there would be more allusions to the search for serious partners and serious relationships when participants described Parship than when they described Tinder™.

2.1. Method

2.1.1. Participants

Thirty participants took part in the study. Four participants indicated they did not know one or both of the dating apps and were excluded, and thus a total of 26 participants (21 women; age: $M = 21$ years old, $SD = 2$) remained in the final sample.

2.1.2. Materials and procedure

A survey was designed with MediaLab research software. All materials, instructions and responses were administered and recorded with a computer. Instructions informed participants that the study was interested in university students' opinions about two online dating apps. Instructions stressed that participants responses would remain anonymous and asked for honest opinions. Participants were then prompted with two open-ended questions, one asking them to write down a short description and opinion about Tinder™ and its users and the other about Parship and its users. At the end, participants reported their age, gender, and whether they knew Parship and Tinder™. We also asked for participants' relationship status (single vs. in a committed relationship), to explore if participants in committed relationships, when compared to singles, would show signs of outgroup negativity (e.g., Tajfel & Turner, 1979, 2004) and show more negative views of online dating sites and online daters (assuming people in committed relationships are less likely to be using online dating platforms, and thus online daters are considered an outgroup).

2.2. Results and discussion

The content of participants' descriptions of Tinder™ and Parship was examined by an independent judge, blind to the study hypothesis. The judge was instructed to read carefully all the 26 Tinder™ and all 26 Parship responses and code them according to the presence (yes vs. no) of a set of priori defined content categories. The first category was related to mentions of a) the hook-up narrative (i.e., that it is an app for casual sexual encounters; users are not looking for

serious relationships). The second category was related to mentions of b) superficiality (i.e., interest defined by appearance; no interest in personality). The third and fourth categories complemented the previous ones, to account for the possibility that participants' perceptions of the apps and their users could include both socially desirable and socially undesirable attributes. These categories related to mentions of c) serious relationships (i.e., app/users looking for serious relationships; not just for fun), and mentions to d) deeper interests (i.e., interest in personality over appearance).

Table 1 shows the number of participants who included content of each of the content categories in their written descriptions and opinions of Tinder™ and Parship dating platforms and their users (the complete responses provided by participants can be found online; see below section "3.1. Power analyses and open data", for the details on how to access the files). As can be clearly seen, while half of the participants described Tinder™ according to the hook-up narrative, less than 4% of participants associated Parship with that narrative, a difference that is statistically significant, $\chi^2(1, N=26) = 10.08$, $p < .001$.Tinder™ was also more often described as an app based on superficial contacts than Parship, $\chi^2(1, N=26) = 9.09$, $p = .001$. By contrast, more participants described Parship with references to serious relationships than was the case for Tinder™, $\chi^2(1, N=26) = 7.11$, $p = .004$. Only regarding references to deeper interests did the descriptions of the two apps approach each other, $p = .250$, and only a very small number of participants mentioned this content regarding any of the apps. It is important to note that the pattern of results was the same when considering the responses given by single participants (n =

18) and those given by participants in committed relationships (n = 8) separately (only the absolute frequencies changed)[1].

Content category	Tinder™ *n (%)*	Parship *n (%)*
a) Hook-up narrative	13 (50%)	1 (3.8%)
b) Superficiality	11 (42.3%)	0 (0%)
c) Serious relationships	1 (3.8%)	10 (38.4%)
d) Deeper interests	0 (0%)	3 (11.5%)

Table 1. Number (percentage) of participants whose opinions about Tinder™ and Parship dating apps include references to the four content categories.

The results of the preliminary study clearly show that the perception of German university students of the dating app Tinder™ closely resembles the portrait and narrative present in the studies (e.g., LeFebvre, 2018) and popular media published in other countries: 50% of the participants described Tinder™ as an app directed at casual sexual encounters and less than 4% associated the app with opportunities for serious relationships. In addition, almost half of the participants also described Tinder™ as a superficial app, which lends support to the idea that Tinder™'s design features of "swiping" from one profile to the next based on appearance and a "Hot or not" principle may lead to perceptions of its users as individuals who value appearance over personality. Importantly for the goals of the present research, the opinions about Parship show that this online dating platform is more associated with the search for serious

[1] Single participants: a) Hook-up narrative, n_{Tinder} = 9, $n_{Parship}$ = 1; b) Superficiality, n_{Tinder} = 7, $n_{Parship}$ = 0; c) Serious relationships, n_{Tinder} = 0, $n_{Parship}$ = 7; d) Deeper interests, n_{Tinder} = 0, $n_{Parship}$ = 3. Committed relationship participants: a) Hook-up narrative, n_{Tinder} = 4, $n_{Parship}$ = 0; b) Superficiality, n_{Tinder} = 4, $n_{Parship}$ = 0; c) Serious relationships, n_{Tinder} =1, $n_{Parship}$ = 3; d) Deeper interests, n_{Tinder} = 0, $n_{Parship}$ = 0.

relationships than for casual encounters, and no participant described the platform as superficial and based on appearance.

Having established that indeed the descriptions and opinions about the two online dating platforms differ substantially and in the direction of what was hypothesized in the introductory section, in the next studies we aimed at testing whether these differences affect how the personality traits of the users of the apps are perceived by others.

3. Study 1

Study 1 took the form of an online survey to establish if there are differences in how the personality of Tinder™ and Parship users is perceived, regarding likeability, trustworthiness, and competence.

In this study, as well as in the next three studies we report in this manuscript, Facebook users were used as the non-dating control group to compare the attitudes towards Tinder™ and Parship users. We chose Facebook because although it is also an online platform where people connect with each other, it is not directed at fostering romantic relationships. As such, it allows us to test whether the differences found in the preliminary study are robust to the introduction of another online social context, or if the users of the two online dating platforms would now be categorized under the same "online dating" umbrella and evaluated similarly (which could be a sign of stigmatization of online dating in general). Another advantage of using Facebook as a control group is that this social network site is so widespread that it is difficult to associate its users with specific personal characteristics or personality type. It thus furnishes a rather neutral comparison context.

Given the results of the preliminary study showing that Tinder™ enjoys a generally less positive reputation, we hypothesized that Tinder™ users would be evaluated as less trustworthy than Parship and Facebook users.

3.1. Method

3.1.1. Participants

A total of 319 individuals voluntarily initiated the online survey. Sixty-eight participants were excluded from the sample because they did not complete all the questions in the survey. Additionally, 28 other participants were excluded because they were not familiar with at least one of the online platforms they were asked about. Thus, the final sample was 223 participants, 160 women and 63 men (age: $M = 25$ years old, $SD = 6$; one participant did not report age).

3.1.2. Materials and procedure

An online survey designed with Qualtrics was dispersed via various mailing lists and internet platforms. Instructions informed participants that the survey aimed to assess attitudes towards Tinder™, Parship, and Facebook users. Then, participants were asked how trustworthy they considered Tinder™, Parship, and Facebook users to be, giving their answers on a 10-point scale ranging from 1 – not at all trustworthy to 10 – very trustworthy (following a general trustworthiness measurement approach, similar to other studies with online contexts, e.g., Toma, 2014; Silva et al., 2017; Silva & Topolinski, 2018). The questions and scales about each group of users appeared one at a time on the computer screen with random presentation order. After the three trustworthiness ratings, participants reported their age, gender and native language (German vs. other). Finally, participants indicated whether they knew each of the online platforms.

3.2. Results

A repeated measures ANOVAs was run on the trustworthiness ratings, with Online platform (Tinder™ vs. Parship vs. Facebook) as a within-participants factor. As expected, The analysis ran for the trustworthiness ratings replicated the pattern found for likeability: Tinder™ users were rated as less trustworthy (M = 3.05, SE = 0.12) than Parship users (M = 4.29, SE = 0.14), with Facebook users (M = 5.08, SE = 0.13) receiving higher ratings than the former two, $F(2, 444) = 113.88$, $p < .001$, $\eta^2p = .339$, all ts > 5.00, all ps < .001[2].

3.3. Discussion

This study suggests that indeed there are differences in the way users of different online dating sites are perceived. Namely, Tinder™ users are generally evaluated more negatively than Parship users. Additionally, the users of both online dating sites were perceived as less likeable, less trustworthy and less competent than Facebook users. This result is not unexpected, given the popularity that Facebook enjoys and which was reflected in our sample (only 1.3% of the participants claimed not to use Facebook). This high popularity and the fact that the high majority of the participants identified as Facebook users are likely to have rendered Facebook as extremely familiar and self-relevant, contributing to the positive evaluation of its users.

4. Study 2

[2] In this study, we also collected participants' ratings of the perceived likeability and competence of Tinder™, Parship, and Facebook users. Data analyses revealed the exact same pattern of results as with trustworthiness ratings (all main effects and individual comparisons were significant, all ps < .005). Since the main interest of the paper is on perceived trustworthiness, we opted for not presenting the likeability and competence results exhaustively in the main text. The complete database including the likeability and competence variables can be accessed online through the link reported in section 4.1. "Power analyses and open data".

In this study we aimed at replicating the previous results with a proper experimental design. Participants were presented with many different, purportedly real profiles of Tinder™, Parship, and Facebook users and were asked to say how trustworthy they perceived them to be. As mentioned in the Introduction, from this experiment on we focused solely on trustworthiness judgments, as this personality trait is determinant for the development of social interactions. Given the results of Study 1, we hypothesized that Tinder™ users would be perceived as less trustworthy than both Parship and Facebook users.

In this experiment we wished to test for possible gender effects on perceived trustworthiness. More specifically, we wanted to address the possibility that the perceived trustworthiness of online daters is moderated by their gender. Research on the motives for using online dating platforms, namely Tinder™, shows that men are more likely to report casual sex as a motive than women (e.g., Gatter & Hodkinson, 2015; Ranzini & Lutz, 2017; Sumter et al., 2017). This is in line with evolutionary psychology literature suggesting that men show higher desire for sexual variety (as a way to access more sexual partners and increase reproductive success and parenthood; see Buss, 1995a, 1995b; Schmitt, 2003). Thus, men who have online dating profiles, especially those with Tinder™ profiles, may be perceived as less trustworthy than their female counterparts. With this hypothesis in mind, we designed the experiment to present an equal number of female and male profiles to test directly if there is a gender effect in the perceived trustworthiness of Tinder™, Parship, and Facebook users.

Finally, we also wanted to provide a more robust test of the influence that relationship status may have on how trustworthy the users of different online dating platforms are perceived, and thus we again measured this variable as in the Preliminary study. In addition, we also wished to test if the lower trustworthiness that seems to be associated with Tinder™ users holds for

participants who themselves use the app. It is a possibility that participants that do use Tinder™ report more positive impressions about other Tinder™ users, because they identify with that group of people which could lead to ingroup favoritism in their evaluations, in comparison to the users of other dating apps such as Parship (through social identification processes; e.g., Tajfel & Turner, 1979, 2004). To test this hypothesis, we measured participants' status regarding the use of Tinder™, Parship and Facebook.

4.1. Power analyses and open data

We used G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007) to determine the appropriate sample size for the next experiments in this manuscript. We used as a reference the effect size associated with the impact of online platform on the trustworthiness ratings of Study 1, η^2p = .339. The required sample size to replicate the effect with an error probability of α = .05, power of .95 and Nonsphericity correction E = 0.75 is N = 22. The manipulations and additional factors that were introduced in Study 2 (and in the following Studies 3 and 4) modified the procedure of the survey implemented on Study 1 to a great extent. Additionally, we expected having to exclude some participants in each of the next studies, as it was likely that not all individuals would be familiar with the three online platforms in our manipulation. For these reasons, the sample sizes of the next three studies were all considerably larger than what the power analysis recommended.

All the materials and databases of all studies in this manuscript can be found online at: https://osf.io/j7zm8/

4.2. Method

4.2.1. Participants and design

Participants were 130 university students recruited at the university campus for a multi-experiment session in the lab. Students were volunteers and received either course credit or 3€ for their participation. We excluded 22 participants from the sample because they were not familiar with at least one of the online platforms. The final sample was 108 participants, 90 women and 18 men (age, $M = 23$ years old, $SD = 5$). The design of the experiment again consisted on the manipulation of the Online Platform (Tinder™ vs. Parship vs. Facebook) and Gender (Female vs. Male) of the users, both factors within-participants.

4.2.2. Materials and procedure

For this experiment, 100 pictures of young adult women and 100 pictures of young adult men were used to simulate Tinder™, Parship, and Facebook user profiles. The pictures were drawn from an online database providing public domain images that can be used and modified freely for non-commercial purposes (pixabay.com, 2016). We chose to use this image database because it was important for the experiment that the people depicted in the pictures were in a seemingly real-life context (in alternative to the highly controlled and normalized face databases offered by research labs). The images were cropped to 6x6 cm squares and presented only the head and shoulders of the individuals in the pictures. To simulate the Tinder™, Parship, and Facebook profiles, we used screenshots of the standard profile page of each online platform and embedded the user profile pictures in them. We blurred all the individuating information that is usually presented in the user profiles of these platforms (e.g., name, age, number of friends), because previous research has shown that individuals use such information as cues to infer some personality characteristics of other users (Utz, 2010), including their perceived trustworthiness (Toma, 2010; 2014). We wanted to observe only the effects of the online platform the people in the pictures were associated with and thus kept all additional information at a minimum (for

another example of an online scenario with minimal information see Rodrigues, Lopes, Alexopoulos, & Goldenberg, 2017). The pictures that were used and the screenshots of the user profile pages can be accessed online through the link reported in section 4.1. "Power analyses and open data".

The experiment started by instructing participants that they were taking part in a study about social perception of social networks users. They were told that they were going to see screenshots of different Tinder™, Parship, and Facebook users and that they should indicate how trustworthy they thought each user was. Participants were shown 60 profiles of each of the three online platforms (180 user profiles in total) and for each online platform 30 profiles presented female users (i.e., the screenshots of the Tinder™, Parship and Facebook profiles were paired with female pictures) and 30 profiles presented male users (i.e., the screenshots of the Tinder™, Parship and Facebook profiles were paired with male pictures). Thus, each trial was composed of the screenshot of one of the online platforms profile page and one male or female picture inserted in the space where the user's photo is supposed to appear. The order in which the 180 user profiles were presented and which pictures were paired with which online platform was completely randomized for each participant. In each trial, a scale ranging from 1 = Not trustworthy at all, to 9 = Very trustworthy, appeared below the user profile. When participants gave their response, a blank screen was presented for 1000 ms and then the next trial started. After evaluating all 180 Tinder™, Parship and Facebook users, participants reported their age, gender, sexual preference (heterosexual, homosexual, bisexual, other/prefer not to answer), relationship status (single vs. committed relationship), and whether they knew (yes vs. no) and used (yes vs. no) each of the online platforms.

4.3. Results

As mentioned above, in this experiment we asked participants if they used Tinder™, Parship, and Facebook to explore if this factor moderated the trustworthiness ratings given to the different Online platform profiles, reflecting ingroup favoritism. We could not test this hypothesis for Parship and Facebook, as only one participant admitted to use Parship and almost all participants (n = 100) said they used Facebook. Thus, there was almost no variability in participants usage status for these two platforms. For Tinder™, n = 33 participants admitted to use Tinder™ and n = 75 did not. Regarding relationship status, the distribution of participants was well balanced, with n = 55 participants claiming to be single and n = 53 claiming to be in committed relationships.

We ran a repeated measures ANOVA on the trustworthiness ratings, with Online platform (Tinder™ vs. Parship vs. Facebook) and Gender of the user (Female vs. Male) as within-participants factors and Tinder™ use (Yes vs. No) and Relationship status (Single vs. Committed) as between-participants factors. As in the previous study, Tinder™ users were rated as less trustworthy (M = 5.32, SE = 0.10) than Parship (M = 5.49, SE = 0.10) and Facebook users (M = 5.54, SE = 0.10), $F(2, 208) = 14.35$, $p < .001$, $\eta^2p = .121$. Individual paired-sample t-tests showed that the difference in the trustworthiness attributed to Tinder™ and Parship users was statistically significant, $t(104) = 3.61$, $p < .001$, $d_z = 0.34$. Trustworthiness ratings given to Parship and to Facebook users were not reliably different, $t(104) = 1.36$, $p = .174$, $d_z = 0.13$. There was also main effect of Gender of the user, with female users receiving higher trustworthiness ratings (M = 5. 06, SE = 0.10) than male users (M = 5.16, SE = 0.09), $F(1, 104) = 34.13$, $p < .001$, $\eta^2p = .247$. The interaction between Gender of the user and Online platform was not significant, $F(1, 208) = 1.01$, $p = .363$, $\eta^2p = .010$, suggesting that men were perceived as less trustworthy than women across all online platforms.

Regarding the effects of Tinder™ use, the main effect of this factor on trustworthiness ratings was marginally significant, $F(1, 104) = 3.73$, $p = .056$, $\eta^2p = .037$, and descriptively shows that participants who indicated to use Tinder™ ($M = 5.64$, $SE = 0.16$) gave higher trustworthiness ratings than participants who did not use Tinder™ ($M = 5.26$, $SE = 0.10$). This is in line with the results of a national survey in the USA showing that the majority of individuals who try online dating have a positive attitude towards it (Smith, 2016). However, there was no interaction of this factor with Online Platform factor, $F < 1$, showing that Tinder™ users gave higher ratings than non-users across all Online platform conditions, which suggests that there is no evidence of ingroup favoritism. All other effects associated with this factor did not reach significance (for all interaction terms, $Fs < 1.30$; all ps $> .270$).

Turning to Relationship status, the effect of this factor on trustworthiness ratings was not reliable, $F(1, 104) = 1.67$, $p = .198$, $\eta^2p = .016$. Only the interaction with Gender of the user approached significance, $F(1, 104) = 3.03$, $p = .085$, $\eta^2p = .028$. Descriptively, it shows only that the difference between the perceived trustworthiness of Female and Male profiles was larger for participants who were in committed relationships ($M_{Female} = 5.\ 81$, $SE = 0.14$; $M_{Male} = 5.\ 22$, $SE = 0.13$) than for those who were single ($M_{Female} = 5.\ 39$, $SE = 0.14$; $M_{Male} = 5.\ 11$, $SE = 0.13$). For all other interactions involving this factor, $Fs < 1.30$; all ps $> .270$.

4.4. Discussion

In general, this study supports what was found in Study 1: individuals with Tinder™ profiles were considered less trustworthy than individuals with Parship and Facebook profiles. Differently from the results of the online survey, participants in this study perceived Parship profiles equally trustworthy as Facebook profiles; only Tinder™ users were differently evaluated. This result suggests that users of different online dating platforms are not perceived

equally and that the users of the Tinder™ app may be associated with more negative social traits, namely lower trustworthiness, while Parship users seem to be perceived no different than users of a non-dating and very popular app, such as Facebook. It is quite exceptional that the adverse Tinder-effect emerged in a setting where participants were faced with so many different pictures of individuals (180 different profiles). It demonstrates that the online context where individuals are encountered has an impact on judged trustworthiness even when there is a great diversity in the facial characteristics of the judgment targets and which are known to influence trustworthiness (e.g., Krumhuber, Manstead, Cosker, Marshal, Rosin, & Kappas, 2007; Olszanowski, Kaminska, & Winkielman, 2017; Oosterhof & Todorov, 2008, 2009; Sofer, Dotsch, Wigboldus, & Todorov, 2014; Todorov, Olivola, Dotsch, & Mende-Siedlecki, 2015; Zebrowitz & Collins, 1997).

Importantly, the results of this experiment also show that Tinder™ use does not affect the differences in perceived trustworthiness that were observed for the three online platforms. This suggests that even those individuals who use Tinder™ may share the less positive view about that specific dating app, in comparison to other. Relationship status also did not promote any qualification of the differences in the trustworthiness attributed to the different online platforms users, which is in line with what was observed in the Preliminary study. It thus seems that the association of Tinder™ users to lower trustworthiness is rather generalized.

As predicted, gender of the person depicted in the user profiles had an impact on perceived trustworthiness, with women being perceived as more trustworthy than men across all online platforms. This suggests that men face a general disadvantage in regard to perceived trustworthiness that transcends the mere association with a specific online dating context, which is in line with traditional gender roles and gender stereotypes (i.e., women are more associated

with traits loading on the warmth/communion dimension than men are, and men are more associated with traits loading on the competence/agency dimension than women are; see Prentice & Carranza, 2002).

5. Study 3

After two studies showing that there seems to be a difference in how users of different online dating platforms are perceived, namely that Tinder™ users are regarded as less trustworthy than Parship or Facebook users, we wanted to understand how persistent these personality impressions are. Specifically, we wanted to test whether Tinder™ users are perceived as less trustworthy even when the association between the person and the online dating site in which he/she was first encountered is removed. To test this, participants were first exposed to pictures of Tinder™, Parship, and Facebook profiles, being asked to simply study them as they were presented. After a short break, participants were shown only the faces of the users again, with no reference to the online platform they had been paired with in the study phase, and were asked to provide the trustworthiness judgments.

Previous research shows that judgments of trustworthiness take place in the very early stages of social perception (within 100 ms after encountering an unfamiliar face) and that there is a high consistency between trustworthiness judgments made under time pressure and trustworthiness judgments made with no time constraints (Todorov et al., 2009; Willis & Todorov, 2006). The assessment of trustworthiness seems to be linked to the automatic coding of face characteristics in the amygdala, occurring even when individuals are not engaged in person evaluation tasks and for targets that present completely neutral facial expressions (Engell, Haxby, & Todorov, 2007). Additionally, studies in the field of spontaneous trait inferences (STI)

suggest that people spontaneously infer traits and form an impression about another individual on the basis of minimal information, such as witnessing or knowing about one behavior performed by the individual (e.g., Orghian, Smith, Garcia-Marques, & Heinke, 2017; Uleman, Saribay, & Gonzalez, 2008). Moreover, when the impression is formed, it becomes linked to the identity of this person, being spontaneously activated or retrieved when the individual is re-encountered at a later moment (e.g., Todorov, Gobbini, Evans, & Haxby, 2007; Todorov & Uleman, 2003, 2004).

Given this, we expected that participants in this experiment would form trustworthiness judgments in their first encounter with the user profiles, even without being explicitly asked to do so. In line with the previous two studies in this paper, Tinder™ users should thus be perceived as less trustworthy than Parship and Facebook users, even if trustworthiness judgments were not requested. If these implicit trustworthiness impressions become strongly associated with the person depicted in the user profile, then they should emerge later when participants see the picture again without the information of which online platform that person uses.

5.1. Method

5.1.1. Participants

A total of 120 university students volunteered as participants for the experiment and received either course credit or 2€ for their participation. Forty-three participants had to be excluded from the sample because they indicated not to know at least one of the online platforms they were asked about. Thus, the final sample was 77 participants, 52 women and 25 men (age, $M = 24$, $SD = 4$). The design of the experiment consisted again on the manipulation of the Online Platform (Tinder™ vs. Parship vs. Facebook) and Gender (Female vs. Male) of the online platform users, both factors within-participants.

5.1.2. Materials and procedure

We randomly selected 90 female pictures and 90 male pictures from the pool of images used in Study 2. The female and male pictures were randomly divided in 3 subsets of 60 pictures (30 female and 30 male pictures) to be paired with one of the three online platforms. In this experiment, instead of screenshots of the standard profile page of each online platform, we used only their logos. The experiment had an exposure and a test phase. In the exposure phase, participants were simply told that they were going to see the profile pictures of different Tinder™, Parship, and Facebook users. The 180 profile pictures were then presented sequentially in the center of the screen, with a 1500ms blank screen after each profile. To pair a profile picture with one of the online platforms, one of the three logos appeared on the screen directly above the picture. Because we needed to keep track of which profile picture had been paired with which online platform for the analysis of the test phase data, each of the three subsets of pictures was assigned to one of the three logos. To avoid material-driven effects, we created six different material conditions that allowed a complete rotation and combination of the three subsets of images by the three online platform logos. Within these six material conditions, the order in which the 180 user profiles were presented was completely random for each participant. After seeing all the 180 profile pictures of Tinder™, Parship, and Facebook users, a short break occurred.

In the subsequent crucial test phase, participants were told that they would now see pictures of different people without information about the online platform they use. They were further informed that the pictures were randomly selected from a stimuli folder, and thus they could encounter pictures from the previous phase. Participants were instructed to indicate how trustworthy each person in a picture was (same 9-point rating scale as Study 2). Participants were

presented with the 180 face images of the users they had seen in the study phase (newly randomized in order) and *now without any online platform logo*. The face images were presented in the center of the screen with the trustworthiness rating scale below them. After each response there was a 1000ms blank screen. At the end of the experiment, participants were asked for their age, gender, sexual preference, and whether they knew each of the three online platforms (given that online platform use and relationship status had no effects in the previous study, we no longer included these variables[3]).

5.2. Results

We ran a repeated measures ANOVA on the trustworthiness ratings of the test phase, with Online platform (Tinder™ vs. Parship vs. Facebook) and Gender of the user (Female vs. Male) as within-participants factors. As in the previous two studies, results showed a main effect of the Online platform factor: Tinder™ users were once more rated as less trustworthy (M = 5.42, SE = .09) than Parship (M = 5.46, SE = .10) and Facebook users (M = 5.54, SE = .10), $F(2, 152) = 6.35$, $p = .002$, $\eta^2p = .077$. However, individual paired-sample t-tests showed that the trustworthiness attributed to Tinder™ users was not statistically different from the trustworthiness attributed to Parship users, $t(76) = 1.13$, $p = .258$, $d_z = 0.12$. Also different from the previous study, the trustworthiness attributed to Parship users was significantly lower than

[3] In this experiment we also explored if participants' sexism level affected perceived trustworthiness of online daters, because previous research suggests that endorsement of sexist beliefs shapes perceptions of dating behavior appropriateness and of the warmth and competence of men and women on a date (McCarty & Kelly, 2015). The analyses revealed there were no significant effects associated with this variable. This is in line with previous socio-demographic analyses showing that endorsement of traditional gender roles does not impact the likelihood of using online dating (Sautter et al., 2010). For the sake of readability and focus of the paper, we opted for not reporting on this variable in the main text. The complete database including the sexism variables can be accessed online through the link reported in section 4.1. "Power analyses and open data".

the trustworthiness attributed to Facebook users t, $t(76) = 2.44$, $p = .017$, $d_z = 0.27$. Regarding the effects associated with the Gender factor, female users ($M = 5.65$, $SE = 0.09$) were again rated as more trustworthy than male users ($M = 5.29$, $SE = 0.10$), $F(1, 76) = 30.82$, $p < .001$, $\eta^2p = .289$. The interaction between the two factors was not significant, $F < 1$.

5.3. Discussion

In this study, Tinder™ users were again perceived as less trustworthy than Parship and Facebook users. Different to the previous studies, Tinder™ and Parship users were perceived as equally trustworthy, and both were less trustworthy than Facebook users. Thus, it seems that the setting of this experiment diluted the associations or impressions that individuals have about specific online dating platforms. Rather, participants seem to have put Tinder™ and Parship under the same "online-dating" umbrella and no longer differentiated them. A possible explanation is that with the separation between the study and judgment phase, participants were not able to access the detailed information of exactly which dating app individuals had been paired with but only the general idea that it was a dating app. In this case, the results of this specific study may reflect the general stigma towards online dating that is still present in society (e.g., Couch, Liamputtong, & Pitts, 2012; Sautter et al., 2010; Smith & Duggan, 2013).

It is very remarkable that a difference in trustworthiness judgments was found between the two online dating platforms and the non-dating control group Facebook, when there was no explicit connection between the individuals depicted in the pictures and the online platforms they use at the time of the judgment. This effect suggests that participants encoded trustworthiness information automatically and unintentionally when they were first exposed to the users' pictures (Engell et al., 2007; Todorov et al., 2009; Willis & Todorov, 2006) and this impression was

retrieved when participants re-encountered the pictures in the neutral context and had to provide the trustworthiness judgments (e.g., Todorov et al., 2007; Todorov & Uleman, 2003).

Together, these results are suggestive of the adverse impact that the association with online dating contexts has on individuals' perceived trustworthiness. These personality impressions seem to be formed rather automatically and unintentionally when individuals are encountered in the context of dating sites/apps and surface in a later neutral context. In the next study we tested the strength and persistence of this effect.

6. Study 4

In this last study we aimed to do a general replication of the previous experiment and test whether the negative impact that online dating sites promote on perceived trustworthiness persists when there is a longer interval between the first encounter with a user profile and the eventual trustworthiness judgment of the user. To do this, after having studied all the user profiles, participants engaged in another cognitive task for approximately 10 minutes and only then did they see the pictures with the user faces again, with no further information about the social network they used, and provided their trustworthiness judgments.

Given that a longer interval is likely to dilute the association of the people depicted in the pictures and the situational context where they were first encountered, as both familiarity and recollection show a significant decline after intervals of several minutes (see Yonelinas, 2002), we significantly increased the sample size in this experiment to guarantee enough power to detect the effect of online platform on trustworthiness judgments.

6.1. Method

6.1.1. Participants

A total of 306 university students volunteered as participants for the experiment and received either course credit or 4€ for their participation. Of these, 75 participants had to be excluded from the sample because they did not know at least one of the online platforms they were asked about. The final sample was 231 participants, 174 women and 57 men (age, $M = 23$, $SD = 4$). The same experimental factors were manipulated in this experiment: Online Platform (Tinder™ vs. Parship vs. Facebook) and Gender (Female vs. Male) of the online platform users, both factors within-participants.

6.1.2. Materials and procedure

This experiment closely followed the procedure reported in Study 3, with the exception that there was an interval of approximately 10 minutes between the exposure and test phases. In this interval, participants completed conceptually unrelated tasks (economic games, Zürn & Topolinski, 2017; or word ratings, Lindau, & Topolinski, 2018a, 2018b).

6.2. Results

We ran a repeated measures ANOVA on the trustworthiness ratings of the test phase, entering Online platform (Tinder™ vs. Parship vs. Facebook) and Gender of the user (Female vs. Male) as within-participants factors. Even though descriptively Tinder™ users ($M = 5.43$, $SE = 0.06$) were considered less trustworthy than Parship users ($M = 5.45$, $SE = 0.06$), and than Facebook users ($M = 5.47$, $SE = 0.06$), the effect of Online platform did not reach statistical significance, $F(2, 460) = 1.81$, $p = .164$, $\eta^2p = .008$. The only reliable effect that emerged in the analysis was the main effect of Gender of the user: again, female users ($M = 5.69$, $SE = 0.07$) were rated as more trustworthy than male users ($M = 5.21$, $SE = 0.07$), $F(1, 230) = 103.88$, $p < .001$, $\eta^2p = .311$. The interaction between the two factors was not significant, $F < 1$.

6.3. Discussion

The results of this study suggest that the adverse effects of using online dating platforms on perceived trustworthiness wash out, especially when trustworthiness is assessed only several minutes after the first encounter with the users. The longer interval implemented between the exposure to the relevant situational cues informing about trustworthiness (i.e., the online platform) and the actual trustworthiness judgment is likely to have hindered the memory processes (familiarity and recollection) that support the retrieval of the person-related knowledge underlying the trustworthiness evaluations (see Yonelinas, 2002).

7. General Discussion

The goal of the present studies was to fill a gap in the literature regarding the impressions that individuals hold about general personality attributes of the users of different online dating platforms. We tested whether there are differences in the trustworthiness attributed to the users of Tinder™ and Parship dating platforms. Our general hypothesis was that Tinder™ users may face adverse effects in how trustworthy they are perceived due to the generally less positive reputation that Tinder™ enjoys as a "hook-up" app. A first preliminary study supported that indeed the "Hook-up app" narrative was present to a much larger extent when our participants were asked to describe Tinder™ than when they described Parship. Parship descriptions and opinions on the other hand were mostly associated with a motive to search for serious partners/relationships, which was not present at all in Tinder™ descriptions. Studies 1 and 2 showed that these differences in the narratives and ideas associated with the two online dating apps translate in how trustworthy the users are perceived to be: Tinder™ users were perceived as less trustworthy than Parship users and also less trustworthy than Facebook users (the non-dating online platform control group).

In Studies 3 and 4 we tested if the differences in the trustworthiness impressions persist when judgments are made in a neutral context, where the association between the individuals and the online platforms in which they were presented is removed. This hypothesis was supported in Study 3, in which Tinder™ users were again perceived as less trustworthy than Facebook users. This study also showed that in these conditions Tinder™ and Parship users seem to be put in the same "online-dating" category, given that participants did not differentiate between them in their trustworthiness judgments. This may explain why in this study Parship users were also evaluated as less trustworthy than Facebook users, which was not the case in the first two studies. As mentioned before, the results of this specific study may reflect the persistence of a stigma against online dating, which has not disappeared completely in present societies despite the improvement of the attitudes towards online dating in the last years (Smith, 2016; Smith & Duggan, 2013). In Study 4, with an interval of several minutes of strong cognitive distraction between the encounter with the profiles and the trustworthiness ratings of the decontextualized targets, the differences between the three online platforms were diluted and non-significant, clearly showing a temporal boundary condition of the adverse Tinder-effect.

Our studies expand previous research, especially the research investigating perceived trustworthiness of online daters and social network users profiles (e.g., McGloin & Denes, 2018; Toma, 2010, 2014). While the previous studies showed that the various different cues contained in online profiles are used as valid information to infer users' trustworthiness, our results go a step further and suggest that just the very basic information of which online platform individuals also affects their perceived trustworthiness. As a whole, our results converge with previous studies showing that individuals form rapid and effortless impressions about other individuals on the basis of minimal information (e.g., Uleman et al., 2008), in our studies as minimal as

knowing only the online dating platform a person uses. We believe these findings re a relevant addition to the literature given the importance of trustworthiness for the initiation of interpersonal contact and the development and pursuit of interpersonal relationships (see Balliet & Van Lange, 2013; Ferrin et al., 2008; Rotenberg, et al., 2004; Todorov, 2008).

Although our studies mostly focused on trustworthiness, it is probable that the more negative judgments that emerged for Tinder™ users as compared to Parship or to Facebook users, reflect a global impression that extends to judgments of other personality dimensions. Thus, it may be generally disadvantageous for an individual that others become aware that he or she uses a specific online dating platform, especially in contexts where their personality is being evaluated or judged in one dimension or another. This may be especially the case in situations where there is not the chance to meet the individual in person or to gather much more information about her/him. In such contexts it is more difficult to establish a personal connection and develop a deeper knowledge about the individual's personality, allowing our impressions about the person to be guided by a simple and superficial cue such as the online dating site she/he uses.

How do our results relate to research measuring the personality attributes and motives of online daters? Is there a correspondence between the lower trustworthiness that was attributed to Tinder™ users and specific personality traits and motives that have been found to be more common in actual Tinder™ users? To our knowledge, only very few studies have compared Tinder™ users with other groups of the population. In general, these studies found little evidence supporting the existence of substantial differences between the personalities of Tinder™ users and of other groups in the population. For example, considering the Big Five personality traits, Tinder™ users and non-users have been found to differ only in the traits extraversion, openness

to experience (Tinder™ users scored higher) and consciousness (Tinder™ users scored lower); no differences were found for the traits agreeableness and neuroticism (Timmermans & De Caluwé, 2017a). More relevant for our findings is the comparison between Tinder™ users and users of online dating agencies. Also here no differences have been found between the two groups of people in what concerns the motives to use online dating, sexual permissiveness, sociability and self-esteem (Gatter & Hodkinson, 2016). This suggests that the differences we found in Studies 1-3 are more likely to be supported by the general narrative of Tinder™ as a "hook-up app" than by real differences between those who use the app and those that do not. However, one should be cautious when interpreting the results regarding the motives to use online dating apps/sites, given the high social desirability that responses about socially sensitive behaviors may reflect (e.g., Couper, Singer, & Tourangeau, 2003; Richman, Kiesler, Weisband, & Drasgow, 1999).

7.1. Limitations and future research

The studies in this manuscript were all conducted in Germany, and therefore questions regarding the generalizability of the findings to other countries and cultures may arise. One concern may be with the online platforms that were chosen as instantiations of our manipulation. While Tinder™ and Facebook are very popular worldwide, Parship enjoys a more limited popularity, as it is present only in 12 countries in Europe and in Mexico. But other countries are likely to have online dating sites with a similar focus in personality matching like Parship. For instance, the online dating sites Match.com and eHarmony are quite popular in the USA (with 35 and 7.1 million monthly visitors, respectively, as of November 2016; eBizMBA, 2016) and both require users to fill in a personality profile that then is used to select potential matches. Thus, future research could investigate whether the effects observed in our studies also emerge in other

world regions. Future studies can also test the impact that certain cultural idiosyncrasies, as for example a population's general attitude towards online dating, may have on the results we found with a student German sample.

Related to the above, the general question investigated in this paper may also be addressed in light of important demographic characteristics. One example is the age of participants. Our participants' cohort, university students, corresponds to the age group that has been recently identified as showing most usage of online dating platforms (young adults between 18-24 years old; Smith, 2016). Would our results be different if participants were recruited from another cohort, one in which the use of online dating platforms is not as frequent? Would this accentuate the differences between the different dating apps, or dilute them given the less knowledge of their working mode and operating features? Similarly, the user profiles that we presented were all of individuals belonging to the same age group as our participants. It is also an open question whether our findings hold when the age groups of the users in the profiles and of the participants who evaluate them do not match.

Another direction that future research may take is to create a context in which participants can interact with or explore the user profiles in more depth than what was possible in the present experiments. Although other studies have implemented the same general strategy of presenting profiles with static information and with which participants cannot interact (e.g., McGloin & Denes, 2018; Toma, 2010, 2014), this is not what happens in real life. It may be interesting to explore what happens if participants are allowed to swipe right or left on the Tinder™ profiles they are exposed to, or to send a friendship request to the Facebook user they are examining, and correlate that with trustworthiness perceptions, for instance.

Finally, our studies implemented a measurement of general trustworthiness, not specifying whether participants should judge the targets regarding their trustworthiness as a person or trustworthiness as a romantic partner. Given the consistency of our results in Studies 1 to 3, it is clear that being associated with different online platforms affects an individual's perceived trustworthiness. Future studies may thus further explore and disentangle which "life dimension" participants are considering when making the trustworthiness judgments.

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Highlights

- Five studies explored how users of online dating platforms are perceived by others
- Participants rated the trustworthiness of Tinder, Parship and Facebook users
- Tinder users were perceived as less trustworthy than the other two groups
- In rapid presentation of online dating profiles, Tinder and Parship did not differ
- The effect is diluted with increased intervals after first encountering the targets