It’s a match (?): Tinder usage and attitudes toward interracial dating

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ABSTRACT
The increased popularity of dating apps such as Tinder coupled with the rise in interracial marriages form the foundation of this study which explores the role played by visual and cultural cues in people’s dating decisions. Using a within-group 2*3 experimental design (N = 331) among a convenience sample of adults in the Netherlands, this study provides insight into how the ethnicity associated with profile pictures and names impact the evaluation of a potential date on Tinder. Overall, respondents ranked Caucasian-looking Tinder users as more attractive and more likely to be their date of choice. Interestingly, this finding did not hold when narrowed down to respondents identifying as Western-European only: They did not prefer Caucasian-looking or sounding profiles. Perceived attractiveness was shown to partially mediate the choice of a Caucasian-looking profile, regardless of name.

KEYWORDS
Online dating; race; self-presentation; dating apps

Introduction
Over the past few decades, the tradition of dating and marrying someone from the same town has made way for relationships that cross geographical, socio-economic, as well as ethnic boundaries. Both the U.S. and Europe have seen an increase in interracial marriages (Bialik, 2017; Lanzieri, 2012) and attitudes toward relationships between people from different ethnic backgrounds have improved over the years (Newport, 2019). These trends have coincided with an increase in the use of dating apps such as Tinder and other online dating platforms (Smith & Anderson, 2016), raising questions about how using these platforms impacts people’s attitudes toward interracial dating.

Previous work has examined how dating platforms extend users’ social networks with people with whom they would have otherwise never connected (Hergovich & Ortega, 2018), but has also shown that the majority of users remain more willing to date within their own ethnic group (Fiore & Donath, 2005). Newer, mobile-based dating platforms, such as the Tinder app, limit the written information users can share, rendering pictures and
names more relevant and possibly increasing the warranting value of visible characteristics such as race (see Walther, Van Der Heide, Hamel, & Shulman, 2009). The present study examines the role played by the visual and cultural information available on user profiles, i.e., pictures and names, in informing people’s dating decisions.

**Racial dating preferences and online dating**

Individuals’ preference for romantic partners who resemble them in a variety of ways, including their ethnic background, is one of the most reliable dating patterns in humans (Little, Burt, & Perrett, 2006). Nonetheless, the last two decades have highlighted an increasingly positive attitude toward interracial romantic relationships (Bialik, 2017; Lanzieri, 2012), as well as a rise in the number of people who marry someone outside their ethnic group (Johnson & Kreider, 2013; Lanzieri, 2012; Livingstone, 2017). This trend coincides with the diffusion of online dating (Hergovich & Ortega, 2018) and the rise in popularity of dating apps, raising questions about the role these apps play in the increase in interracial relationships. On the one hand, research suggests that online dating might lead to more assortativity in couples (Thomas, 2018), including regarding characteristics not immediately visible such as religion or education because of online platforms’ ability to connect to people outside one’s own community (Hergovich & Ortega, 2018). On the other hand, the affordances of online dating platforms, especially mobile dating apps, greatly emphasize visual elements (Carpenter & McEwan, 2016). This suggests that before users initiate contact, these images provide them with cues about other people’s characteristics, including racial identity, allowing them to establish a potential partner’s degree of similarity.

Within the reduced-cue environment of a dating platform, users will analyze all available information to reduce uncertainty around the value of a potential partner (Heino, Ellison, & Gibbs, 2010). Such value, while dependent on users’ purposes (e.g. a casual hookup vs. a long-term relationship; Carpenter & McEwan, 2016), correlates strongly with the perception of a potential partner’s similarity (Antheunis, Valkenburg, & Peter, 2010). As such, uncertainty reduction strategies play an important role in the partner preferences of individuals who use online dating apps. These strategies focus on the careful evaluation of all available information to a) spot inaccuracies or potential misrepresentation (Gibbs, Ellison, & Lai, 2011) and, b) ascertain the extent of similarity (Antheunis et al., 2010). On older dating platforms, users practiced uncertainty reduction through extensive textual self-disclosure (Toma & Hanock, 2012). Contemporary dating apps, however,
limit this opportunity and are instead characterized by their highly visual nature and their focus on photographs. These affordances emphasize the visual characteristics of a potential partner, including their racial features, which then might become an important element in establishing similarity, and therefore one’s ultimate partner choice.

**Dating in the age of Tinder**

Mobile-based dating applications, such as Tinder, dominate the current online dating platform market (Ward, 2017). Tinder is a location-based service, meaning it incentivizes encounters between users in physical proximity (David & Cambre, 2016). In addition, compared to previous iterations of online dating platforms, one of Tinder’s defining affordances is its focus on user photos accompanied by limited textual information.

Similar to other forms of online-based interactions, Tinder lacks the majority of non-verbal communicative cues, leading individuals to focus on elements such as users’ pictures or names, features that more commonly reveal a person’s ethnic background, to determine their degree of similarity (Alhabash, Hales, Baek, & Oh, 2014; Hitsch, Hortaçsu, & Ariely, 2010). This raises the question what happens when people are presented with a Tinder profile of someone outside their own ethnic group. Does Tinder’s focus on names and images mean that the users’ ethnic background emerges as a relevant cue when choosing a partner? Or does the focus on images prioritize perceived attractiveness in people’s evaluation of their potential partner (Brand, Bonatsos, D’Orazio, & DeShong, 2012)? This leads to the following research questions:

**RQ1**: When using a location-based and image-centered dating platform, are respondents who identify as Western European more likely to want to date someone presenting a Caucasian appearance or a Dutch-sounding name?

**RQ2**: What is the role of (a) perceived attractiveness and (b) perceived ethnic similarity in the relationship between the appearance (Caucasian v. non-Caucasian) of a Tinder profile and respondents’ dating choices?

**Methods**

**Participants**

Participants were recruited in The Netherlands via convenience sampling, through the professional and private connections of a graduate student ($N = 331$; 190 females, 140 males, 1 other; mean age $30.9$, $SD = 8.78$); 197 respondents chose to view male and 134 respondents chose to view female
profiles. 58.3% of the sample had previous experience with the Tinder app. 80.4% of the respondents identified as Western European, 9.7% identified as “Other”, and 3.3% identified as “Asian”.

**Stimuli**

The study created a series of 24 fake Tinder profiles that featured pictures of people from a white or a nonwhite background (the latter resembled the ethnic minorities prevalent in the Netherlands: Surinamese, Antillean, Turkish, or Moroccan; Buunk & Dijkstra, 2017; pictures were taken from the Face Research Lab London Set (DeBruine & Jones, 2017)), with either a Dutch-sounding name, a name from the ethnic minority featured in the picture, or no name. Names were selected from lists of popular first names in The Netherlands. Half the profiles featured male pictures (6 white, 6 non-white), the other half featured female pictures (6 white, 6 nonwhite). Profiles were varied by name (no name, Dutch name, non-Dutch name). To avoid undue influence from the perceived attractiveness of a profile picture, respondents saw two versions of every option (i.e., two white females with a Dutch name).

**Study design and procedure**

The study utilized a within-group 2 (Caucasian vs non-Caucasian) * 3 (Dutch name/Non-Dutch name/No Name) experimental design using the online survey platform Qualtrics. After providing consent, participants answered demographic questions and questions about their Tinder usage, after which they were introduced to the stimuli. Everyone was exposed to all the pictures that matched their gender preference. After viewing each profile, respondents were asked to rate their likelihood of dating the person, perceived ethnic similarity, and perceived attractiveness. The survey ended with questions about exposure to people from different ethnic backgrounds.

**Measures**

**Perceived Similar Ethnic Background**

This was measured with the question: “How likely do you think it is this person has the same ethnicity as yours?” using a 5-point Likert scale.
**Likelihood of Dating**

This was measured with “How likely do you think you are to go on a date with this person?” using a 5-point Likert scale.

**Perceived Attractiveness**

This was measured with the question, “How attractive do you think this person is” and a 5-point Likert scale.

**Analysis Plan**

RQ1 was approached using Repeated Measures ANCOVAs, controlling for the reported ethnicity of respondents (Western European). RQ2 was approached through a mediation test via MEMORE 2.0 (Montoya & Hayes, 2017) which produced a bootstrapped regression model for the DV for each pairwise comparison of the IV (a total of three models).

**Manipulation Check**

An ANCOVA was performed with perceived ethnic similarity as the dependent variable, controlling for respondents’ reported ethnicity (“Western”). Mauchly’s test revealed a violation of the assumption of sphericity for the condition (Dutch) name $\chi^2(2) = 0.96, p =.004, (\epsilon = 0.98)$; degrees of freedom were corrected using the Huynh-Feldt estimate of sphericity in further analyses. Controlling for reported ethnicity (= Western European), the nature of the profile picture as well as the name significantly predicted users’ perceived ethnic similarity $F(1, 328) = 81.202, p < .001, \eta^2_p = .20$ and with a user with a Dutch name than a non-Dutch name $F (1.94, 635.95) = 3.78, p < .05, \eta^2_p = .01$.

**Results**

Repeated measures ANOVA was performed to initially compare the effects of the pictured ethnicity and name of stimuli on all respondents’ dating intention. Mean comparisons for intention to date, perceived attractiveness and perceived ethnic similarity for Western-European and non-Western European identifying respondents are available in Tables 1 and 2 respectively.

Considering intention to date as a dependent variable, Mauchly’s test revealed a violation of sphericity for the condition Name $\chi^2(2) = 0.98, p = .02 (\epsilon = 0.98)$; degrees of freedom were corrected using the Huynh-Feldt estimate of sphericity in further analyses. Condition Pictured Ethnicity (Caucasian) significantly predicted respondents’ dating intent $F (1, 329) = 443.80, p < .001, \eta^2_p = .57$, as did condition Name (Dutch) $F (1.96, 642.93) = 16.00, p < .001$, however with a much smaller effect size ($\eta^2_p = .05$). So, while all respondents were likely to choose a Caucasian-looking over a non-Caucasian Tinder profile and a profile with
a Dutch name over both other name conditions, ethnicity was more predictive of respondents’ dating intent than names.

Considering perceived attractiveness as a dependent variable, Mauchly’s test revealed a violation of sphericity for the condition Name $\chi^2(2) = 0.97, p = .011$ ($\varepsilon = 0.98$); degrees of freedom were corrected using the Huynh-Feldt estimate of sphericity in further analyses. Condition Pictured Ethnicity (Caucasian) and Condition Name (Dutch) significantly predicted the perceived attractiveness of stimuli $F(1, 329) = 470.77, p < .001, \eta^2_p = .59$; $F(1.98, 644.36) = 17.24, p < .001, (\eta^2_p = .05)$. All respondents thus found a white-looking Tinder profile more attractive than a nonwhite one, and preferred a profile with a Dutch name over both other name conditions; however, a stimulus’ ethnicity was more predictive of their attractiveness than their name.

To test RQ1, ANCOVA was performed with intention to date as the dependent variable, controlling for the self-reported race of respondents (Western European). Mauchly’s test revealed a violation of sphericity for the condition Name $\chi^2(2) = 0.98, p = .02$ ($\varepsilon = 0.99$); degrees of freedom were corrected using the Huynh-Feldt estimate of sphericity in further analyses. The relationship between condition Pictured Ethnicity (Caucasian) and Western European respondents’ intention to date was not significant $F(1, 328) = 0.93, p = .34, \eta^2_p = .003$; no significant effect was found between condition Name (Dutch) and Western European respondents’ intention to date $F(1.95, 644.15) = 0.592, p = .55, \eta^2_p = .002$. A second analysis controlled for Tinder Use and Interracial
Contact. Western European respondents who had experience with Tinder were not more likely to choose stimuli with (White) Pictured Ethnicity (F (1, 322) = 0.73, p = .39, ηp² = .002), but were slightly more likely to choose stimuli with a (Dutch) name F(2, 629.01) = 3.28. Western European respondents who reported high Interracial Contact were not more likely to choose stimuli with a (White) Pictured Ethnicity (F (1, 322) = 0.881, p = .41, ηp² = .001, or with a Dutch name (F (1.95, 628.12) = 0.40, p = .67, ηp² = .001). We employed MEMORE.2 macro to test the parallel mediation of perceived ethnic similarity and perceived attractiveness of the stimulus on likelihood of dating (RQ2). Three mediation tests were conducted (for stimuli of both genders with the three name conditions) to cover all combinations of pair-wise comparisons. Results of the mediation tests are available in Tables 3. Overall, perceived similar ethnicity did not appear to mediate respondents’ likelihood to date a profile with a Caucasian-looking over a non-Caucasian picture. However, for all the

Table 3. Mediation analysis for the three name conditions.

| Name Conditions          | Dutch Name | Non-Dutch Name | No Name |
|--------------------------|------------|----------------|--------|
| Total                    | 1.36 (.01)*** | 1.12 (.003)*** | .470 (.003)*** |
|                          | R² = .77    | R² = .70       | R² = .64 |
| Direct                   | .172 (.07)* | .224 (.06)***  | .13 (.06)* |
| X → M₁                   | 2.06 (.08)*** | 1.4 (.07)***   | 1.9 (.08)*** |
| X → M₂                   | 1.42***     | 1.13 (.06)***  | .45 (.06)*** |
| M₁ → Y                   | -.01 (.03)  | .008 (.03)     | -.01 (.03) |
| M₂ → Y                   | .85 (.03)*** | .78 (.03)***   | .79 (.04)*** |
| Indirect M₁              | -.01 (.05)  | .011 (.04)     | -.02 (.05) |
| [−.13, .11]              | [.067, .08] | [−.11, .08]    |
| Indirect M₂              | 1.2 (.08)*** | .89 (.06)***   | .35 (.05)*** |
| [1.04, 1.38]             | [.76, 1.01] | [.25, .46]     |

Unstandardized coefficients with standard errors in parentheses. 95% CI in brackets. M₁ = Perceived Ethnic Similarity, M₂ = Attractiveness, X = Pair-wise comparison, Y = Likelihood to date. *p <.05, **p <.01, ***p <.001

Graph 1. Dutch name stimuli.
name conditions, perceived attractiveness partially mediated respondents' likelihood to date a white-looking profile. A graphical rendition of mediation paths for Dutch, non-Dutch and no-Name stimuli is available in Graphs 1-3.

**Conclusion**

Coupling the rise in the popularity of online dating apps with an increased approval of interracial dating, researchers have hypothesized that the use of dating platforms might explain the rise in interracial relationships. Using a within-group 2*3 experimental design among a sample of adults in the Netherlands, this exploratory study investigated whether cues suggestive of a person’s ethnicity play a role in the selection of a potential date on the dating app Tinder.

Our findings were mixed: Even though all respondents ranked Caucasian-looking Tinder users as more attractive and dateable and
pictures played a larger role in this decision than names, this did not hold up for the Western European respondents, who were not any more likely to choose profiles with a Dutch name over those without one (RQ1). However, while perceived ethnic similarity did not appear to influence respondents’ dating intent, perceived attractiveness partially mediated the choice of a Caucasian-looking profile over the alternative under all name conditions. These results suggest that while perceived ethnic similarity might not play a direct role in the choice of a potential partner, the ethnic appearance of a Tinder profile could influence its perceived attractiveness, which in turn impacts its dateability.

These findings are in line with existing research on the role of race in online dating, underscoring that Caucasians are generally favored over all other groups (Rudder, 2014; Tsunokai, McGrath, & Kavanagh, 2014). Race not only becomes a filter (Robinson, 2015), but also appears to contribute to users’ dating market value (Heino et al., 2010), serving as a factor to indicate similarity, and therefore reduce uncertainty about their dateability (Antheunis et al., 2010). The study also reinforces previous findings into the fundamental role played by perceived attractiveness in users’ dating choices on a largely visual platform like Tinder (Strugo & Muise, 2019; Ward, 2017).

The present study has several limitations. One shortcoming was that the pairing of the profiles was not pretested which might have limited respondents’ perception of them as comparable. Second, Tinder profiles were restricted to images and user names only, whereas Tinder users often include a few words about themselves, cues that could provide further insight into their ingroup/outgroup status. Asking respondents to indicate ethnic similarity could have primed them to the purpose of the study, and led to increased social desirability in their answers. The study also did not rely a standardized measure of attractiveness, and did not ask respondents about the nature of their experience with Tinder or, indeed, their experience with other, similar dating apps, such as Bumble, Grindr, Scruff, or Her. Additionally, the profiles were not randomized, which could have led to fatigue and order effects.

Future work should take these limitations into account, and also consider including questions about interracial dating preferences. Examining different ethnic groups in different countries could also help to gain deeper insight into how racial dating preferences operate in different cultures.

The present study provides insight into the role played by racial and cultural cues in determining people’s online dating choices. It has shown that while perceived attractiveness plays an important role in dating choices, a potential partner’s ethnicity also matters.

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No potential conflict of interest was reported by the authors.

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